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Statewide Surveys and Inventories

Project W-170-R-25

Job Progress Report



MOUNTAIN LION

Study I, Job 8

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**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Mountain Lion Surveys</u>
PROJECT:	<u>W-170-R-25</u>		<u>and Inventories</u>
SUBPROJECT:	<u>1-7</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>I</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>8</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2000 to June 30, 2001</u>		

MOUNTAIN LION – STATEWIDE

SUMMARY

The Idaho Department of Fish and Game uses the Mandatory Check and report System to collect data on harvested mountain lions. The Mandatory Check program requires that hunters present a harvested lion to a Department office or checkpoint within 10 days of the kill date so the hide can be tagged and tooth removed from the skull of their harvested mountain lion.

In 2000, resident hunters purchased 18,561 mountain lions tags, up from 17,003 purchased in 1999. The majority of those tags (16,270) were issued as part of the resident Sportsman's Package. The remaining tags included 2,255 regular tags and 36 tags for a second mountain lion, valid in portions of Big Game Units 10 and 16, and all of Units 12, 16A, 17, 19, 20, 20A, 26, and 27.

Nonresidents purchased 888 mountain lion tags in 2000, also up from 813 purchased in 1999. Of these, 308 were regular tags (sold for \$235), 17 tags were for a second mountain lion (\$31.50), valid in portions of Big Game Units 10 and 16, and all of Units 12, 16A, 17, 19, 20, 20A, 26, and 27, and the majority, 555 tags, were reduced price mountain lion tags, available for \$31.50 to nonresident purchasers of a deer or elk tag valid in the Lolo, Selway, or Middle Fork Zone units and valid only in those Big Game Units (10, 12, 16A, 17, 19, 20, 20A, 26, and 27).

A total of 3,288 hound hunter permits were issued; 3,173 to resident hunters and 115 to non-resident hunters.

A total of 701 mountain lions were harvested and checked, an increase of 15% from the 612 mountain lions harvested in 1999. Female mountain lions comprised nearly half (47%) of the harvest. Hunters using guide harvested 148 mountain lions (21% of the total harvest reported). Hunters still hunting or stalking harvested 41 mountain lions, 13 were harvested by hunters using a predator call, and 92 mountain lions were harvested incidental to some other hunting activity.

The majority of mountain lions (392) were harvested by hunters using a rifle, 210 were taken by hunters using a handgun, 78 were harvested by hunters using archery equipment, 13 were harvested by hunters using a muzzle-loading weapon; the weapon of harvest was unknown for 8 mountain lions.

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JOB:	<u>8</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2000 to June 30, 2001</u>		

MOUNTAIN LION – PANHANDLE REGION

ABSTRACT

The 2000-2001 mountain lion season produced a regional harvest of 138 mountain lions. Female mountain lion harvest consisted of 45% of the regional harvest. Current data infer this population may have peaked and is currently declining. Changes in hunter participation and unfavorable hunting conditions may also be partly responsible for the decrease in lion harvest. Additional harvest data and/or new methods of monitoring lion populations may be required to determine lion population trends in the area.

DAU 1-1 (GMUS 1, 2, 3, 4, 4A, 5, 6, 7, 9)

Lion hunting with the aid of hound is disallowed during general big game seasons for deer and elk. Deer and elk seasons run almost continuously from October 10 through December 1 in most units. However, there is no deer or elk general season in units 4, 7, or 9 after November 3. Unit 9 is rarely accessible due to deep ridgetop snow on the boundary of the unit.

MANAGEMENT DIRECTION

Management Objectives

In the goals of the 1991-1995 Mountain Lion Management Plan, DAU 1-1 is to be managed to provide an increasing population of mountain lions. Available evidence indicates these management objectives were attained, and although no new mountain lion management plan is yet in place, current objectives are to stabilize and, in some areas, decrease the mountain lion population.

The Department will continue to gather harvest data via the mandatory check. Regulations will allow the use of trailing dogs and continue to protect young mountain lions and females accompanied by young of the year. Pursuit (no-harvest) seasons are not currently offered because regular hunting seasons were lengthened as the need arose for increased harvest.

BACKGROUND

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 DAU 1-1 was open only September through December, with one 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 November 26 through December 2. Seasons have closed generally at the end of December, or in mid-January during most of the 1980s and 1990s. Beginning in 1993 seasons were extended several times, so that DAU 1-1 currently closes March 31.

Prior to the 1995-1996 hunting season, DAU 1-1 was comprised of three 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 DAU 1-1, 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 2000-2001 season was 215 days, opening August 30 and closing March 31 in all game management units. This was an increase of 16 days in all units except 7 and 9 where the season was already opening on August 30. The use of hounds is not allowed during the general deer and elk rifle seasons.

HARVEST CHARACTERISTICS

The 2000-2001 mountain lion harvest in DAU 1-1 was 138, 13% below the five-year average (Table 1). The average harvest density was 1 mountain lion per 53 square miles. The highest harvest density occurred in Unit 3 with 1 mountain lion per 32 square miles. The lowest harvest density occurred in Unit 4A with 1 mountain lion per 97 square miles. During the 2000-2001 season, no mountain lions were harvested in Unit 9, which is consistent with the past, due to its remote location and poor access.

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 1993 there has been a generally increasing trend (Table 1). The three-year unweighted average of 46% females is beyond the maximum threshold (40%) in the most recent (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 (the “tooth drop”). These data were found to be unreliable, and since 1998, premolars have been sectioned and aged. These data show reflect young age structures, with approximately 2/3 of females under four years of age (Table 2), and nearly 90% of male lions under four years of age (Table 3).

Hunting Characteristics

The average successful mountain lion hunter during the 2000-2001 season was unguided (84%) and used hounds (73%) and a rifle (75%) to take a mountain lion (Table 4). The total mountain lion harvest by unguided hunters was 47% females and 53% males. The total mountain lion harvest by guided hunters was more concentrated on male lions with 40% females and 60% males.

Harvest Distribution by Date

During October and November, general elk and deer hunting seasons preclude mountain lion hunting with hounds. Forty-seven percent of the seasonal harvest of mountain lions occurs during December with an additional 23% during January (Table 5). During December, 40% of the harvest consists of females. This increases to 53% during January, and 60% during February. This pattern is consistent with a population being heavily exploited.

Incidental Kill

Ten of the 138 mountain lions harvested (7%) in this DAU were taken incidentally, primarily by hunters pursuing other big game animals. The sex ratio of mountain lions killed incidentally is substantially higher for the proportion of females compared to that for hunters specifically targeting mountain lions.

OTHER MORTALITIES

During this reporting period there were 2 non-hunting mortalities in addition to the 138 harvested lions. A female apparently died of malnutrition in Unit 5 during July. A male was killed while involved in a depredation in Unit 2 during August.

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. The winter of 2000-2001 was very mild, with below average snow accumulation beginning in late November in the higher elevations. Snow accumulation did not force prey species to lower elevations and onto roads. Thus lions and tracks were not often present on the access systems and many hunters reported

difficulty finding tracks. Other hunters reported abundant tracks and good hunting conditions if they got up on the hill where the ungulates were concentrated.

DEPREDATIONS

One mountain lions were killed as a consequence of depredations to domestic stock. The reporting rate of mountain lions killed by Wildlife Services has been highly variable over the years, so year-to-year comparisons have little value.

MANAGEMENT IMPLICATIONS

The Population Direction Goal for this area in the most recent Mountain Lion Management Plan (1991-1995) calls for an "increase." It appears safe to say that the increase envisioned during the 1991 planning process has been realized, and exceeded. At the same time, calf:cow ratios for elk have dropped substantially during the past six to eight years, and the lack of a population increase following reduced elk populations after the severe winter of 1996-1997 has resulted in a general desire by many big game hunters to reduce mountain lion populations.

It is desirable to reduce the mountain lion population of DAU 1-1 to a level somewhere between that of 1991 and 1999. While there are no specific population estimates possible for either time period, harvest data suggests there was substantial growth between those periods and, therefore, ample room for manipulation. A one-third reduction from the existing population should be within this range.

The three-year increasing pattern in the percentage of females in the harvest, combined with a younger age structure, and with a three-year decline in total harvest, implies the mountain lion population of DAU 1-1 is likely declining. A harvest shift out of traditional mountain lion units supports this conclusion. For the five-year average 1994-1998, 72% of the DAU 1-1 kill came from units 1, 4, and 6. During 2000-2001 this dropped to just 58%. Anecdotal reports from mountain lion hunters imply mountain lions were more difficult to find in the three core units, forcing them to shift to different areas.

Table 1. Mountain lion harvest in DAU 1-1, 1984-2000.

Harvest Season	Female	Male	Unknown	Total	Percent Female
1984	18	17	0	35	51%
1985	15	18	0	33	45%
1986	17	14	0	31	55%
1987	21	17	2	40	55%
1988	19	26	0	45	42%
1989	28	22	0	50	56%
1990	19	31	0	50	38%
1991	34	39	2	75	47%
1992	24	33	1	58	42%
1993	20	45	0	65	31%
1994	36	58	0	94	38%
1995	73	70	1	144	51%
1996	52	84	1	137	38%
1997	81	112	1	194	42%
1998	76	96	0	172	44%
1999	78	72	0	150	52%
2000	64	74	0	138	46%

Table 2. Age structure of female lions killed in DAU 1-1, 1998-2000.

Harvest Season	Harvest by Age Class				Percent in Each Age Class		
	Unknown	K-3	4-7	8+	K-3	4-7	8+
1998	17	38	22	3	60%	35%	5%
1999	26	37	12	2	73%	24%	4%
2000	64	0	0	0	ND	ND	ND

Table 3. Age structure of male mountain lions killed in DAU 1-1, 1998-2000.

Harvest Season	Harvest by Age Class				Percent in Each Age Class		
	Unknown	K-3	4-7	8+	K-3	4-7	8+
1998	33	66	5	0	93%	7%	0%
1999	32	44	6	1	86%	12%	2%
2000	74	0	0	0	ND	ND	ND

Table 4. Mountain lion harvest by method in DAU 1-1 during 2000-2001 season.

Method	Males	Females	Unknown	Total
Weapon				
Rifle	51	52	0	103
Bow	5	4	0	9
Muzzleloader	3	0	0	3
Pistol	13	8	0	21
Unknown	2	0	0	2
Guided				
Yes	13	9	0	22
No	61	55	0	116
Method				
Still	5	4	0	9
Incidental	8	8	0	16
Predator Call	0	0	0	0
Hounds	51	50	0	101
Other/Unknown	10	2	0	12

Table 5. Mountain lion harvest by sex and unit in DAU 1-1 during 2000-2001 season.

Unit	Sex	Month							Total
		Sept	Oct	Nov	Dec	Jan	Feb	Mar	
1	M	0	2	0	21	7	4	0	34
	F	0	1	0	9	5	2	1	18
2	M	1	0	1	3	2	1	0	8
	F	0	0	0	3	1	2	0	6
3	M	2	0	0	2	0	0	0	4
	F	0	1	1	3	4	2	1	12
4	M	0	0	4	3	1	1	0	9
	F	0	2	1	2	1	3	0	9
4A	M	0	0	0	1	0	0	0	1
	F	0	0	0	1	1	0	0	2
5	M	0	0	0	2	2	0	0	4
	F	0	2	1	1	0	0	0	4
6	M	0	1	0	5	2	0	0	8
	F	0	0	0	3	4	0	1	8
7	M	0	0	3	2	1	0	0	6
	F	0	0	0	4	1	0	0	5
9	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0
Total	M	3	3	8	39	15	6	0	74
	F	0	6	3	26	17	9	3	64

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SUBPROJECT:	<u>2</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>I</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>8</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2000 to June 30, 2001</u>		

MOUNTAIN LION – CLEARWATER REGION

ABSTRACT

During the 2000-2001 hunting season, hunters in the Clearwater Region harvested 231 mountain lions, 50% of which were females. This was about the same as the 1997-1999 average of 229 mountain lions harvested annually. DAU 2-1 received a 14% increase in harvest (98), while DAU 2-2 remained the same (98), and DAU 2-3 more than doubled in harvest (35). The most common age class harvested in all DAUs was the 4-to7-year age class. During the 2000-2001 season, most mountain lions were harvested using hounds (73%), followed by incidental harvest (19%). Most mountain lions were harvested with a rifle. A slight increase in incidental harvest may reflect the change in tag structure implemented to enhance incidental harvest.

DAU 2-1 (GMUS 8, 8A, 10, 10A, 11, 11A)

MANAGEMENT DIRECTION

Management Objectives

The 1991-1995 Mountain Lion Management Plan identifies the following statewide management goals:

- Maintain population levels.
- Reduce harvest rates to 250 animals statewide.
- Reduce the female component of the harvest from the current statewide average of 45% to 25-30%.

In addition there is a goal to increase population levels in Units 8, 8A, and 10A, and to maintain the population level in Unit 10. These objectives have changed recently, at least temporarily, as we have seen an apparent increase in mountain lion numbers. Consequently, the region has established more liberal seasons to harvest the increasing number of mountain lions and to address some of the current and potential problems associated with high mountain lion numbers.

BACKGROUND

Historical Information

DAU 2-1 units are generally accessible to hunters during winter and support productive mountain lion populations. Healthy white-tailed deer and elk populations, as well as some mule deer, provide a substantial prey base. Habitats in this area include dense, coniferous forest in Units 10 and 10A; coniferous forests interspersed with farmland in Units 8, 8A, and 11A; and Snake River canyon lands and higher elevation coniferous forests in Unit 11.

Season Structure

Within most of DAU 2-1 the 2000-2001 mountain lion take season extended from August 30 through March 31, a 2-week extension. There is no dog-training season for mountain lions.

HARVEST CHARACTERISTICS

Sex Ratio

During the 2000-2001 hunting season, DAU 2-1 hunters killed 98 mountain lions, including 49 females and 49 males (Table 1). This was identical to the previous 3-year average of 98. Females comprised 50% of the harvest, similar to the previous 3-year average.

Age Structure

The 2000-2001 harvest was dominated by 4-to-7-year age class mountain lions (Table 2). This is relatively consistent with previous years, except that harvest levels have declined.

Harvest Trend

During the 2000-2001 hunting season, hunters in DAU 2-1 harvested 98 mountain lions, which is 14% less than the previous 3-year average (Tables 1 and 13). This may have been a result of stabilized or declining populations in these units. Many hunters are indicating that mountain lions are becoming harder to find. The longer seasons should have produced a higher harvest.

Harvest By Method and Weapon

Hound hunting was the most common method used to harvest mountain lions in this DAU, accounting for 63% of the harvest. Incidental harvest accounted for 28% of the mountain lions reported during the 2000-2001 season (Table 3). As in the past, a rifle was the most common weapon used (Table 4).

CLIMATIC CONDITIONS

The Clearwater Region received 50% of average precipitation at higher elevations during the winter of 2000-2001. Snowpack stayed longer at lower elevations due to cooler winter temperatures. Winter conditions for big game were favorable throughout the region. Snow conditions provided average tracking conditions throughout the region, and hunting continued all winter and spring due to low snow accumulations at all elevations.

DEPREDATIONS

Mountain lion depredations are usually very minor in this DAU. However, during the 2000-2001 season, 14 depredation complaints were filed with the Department for this DAU. In GMUs 8 and 14 in particular, the Department has recently been receiving more reports (9) of problems associated with livestock, some of which are human safety concerns.

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 in 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 into lower elevations and preyed on whitetail. This would account for increased observations of mountain lions in lower elevation whitetail habitat in this DAU during the mid-1990s, particularly in GMUs 8A and 10A. Despite the longer season, harvest remained below the 1997 peak.

Harvest increased 440% from 1991 to 1997 in GMU 10A, where the highest annual harvest for the last 6 years has occurred. During the last few seasons, GMU 10A provided about one-third of the region's total mountain lion harvest, but is down since the peak (Table 14). Continued monitoring is needed to determine if the decrease is due to a population change or the hunting conditions; however, mountain lion hunters are indicating it is becoming more difficult to locate mountain lions.

DAU 2-2 (GMUS 12, 13, 14, 15, 16, 18)

MANAGEMENT DIRECTION

Management Objectives

The 1991-1995 Mountain Lion Management Plan identifies the following statewide management goals:

- Maintain population levels.
- Reduce harvest rates to 250 animals statewide.

- Reduce the female component of the harvest from the current statewide average of 45% to 25-30%.

These objectives have changed recently as we have seen an apparent increase in mountain lion numbers. The region has established more liberal seasons to harvest the increasing number of mountain lions and to address some of the current and potential problems associated with high mountain lion numbers.

BACKGROUND

Winter access varies among DAU 2-2 units. Lower elevations of most units are readily accessible to hunters during winter. Parts of all these units can be more difficult to access because of snow, mud, or steep, rugged habitat. Deer and elk populations throughout most of the DAU are thriving, providing a substantial prey base. Habitats range from dense coniferous forest and mountainous terrain with high precipitation, to lower elevations along the Snake and Salmon Rivers where bunch grass communities prevail in a drier climate.

Season Structure

Within DAU 2-2 the 2000-2001 take season was extended 2 weeks to start at the end of August. DAU 2-2 did not have a dog-training season and there were no female harvest quotas.

HARVEST CHARACTERISTICS

Sex Ratio

During the 2000-2001 hunting season, DAU 2-2 hunters harvested 98 mountain lions, 52% of which were females (Table 5). The proportion of females was higher than the previous 3-year average.

Age Structure

The 2000-2001 harvest was dominated by 4-to-7-year age class mountain lions (49%), which was a little lower than average (Table 6). This is a common harvest composition.

Harvest Trend

During the 2000-2001 hunting season, Area 2-2 hunters harvested 98 mountain lions, which is identical to the previous 3-year average (Table 5). Harvest in this DAU usually varies dramatically between years, usually a result of weather conditions. Incidental harvest may be an indicator of random encounters with mountain lions, likely a function of population densities. Incidental harvest is low (Table 7).

Harvest By Method and Weapon

Hunters in DAU 2-2 used hounds to harvest mountain lions 87% of the time and incidental to other activities 13% of the time (Table 7). The weapon used most often was the rifle (Table 8).

CLIMATIC CONDITIONS

The Clearwater Region received 50% of average precipitation at higher elevations during the winter of 2000-2001. Winter conditions for big game were favorable throughout the region. Snow conditions provided average tracking conditions throughout the region, and hunting continued all winter and spring due to low but persistent snow accumulations at lower elevations.

DEPREDATIONS

There were 5 reported cases of mountain lion depredations, which is typical of this DAU.

MANAGEMENT IMPLICATIONS

There was no change in harvest over the previous 3-year average. The season was again liberalized 2 weeks for the 2000-2001 season to offer sportsmen a greater opportunity to harvest mountain lions. Harvest may be somewhat related to weather conditions.

DAU 2-3 (GMUS 16A, 17, 19, 20)

MANAGEMENT DIRECTION

Management Objectives

The 1991-1995 Mountain Lion Management Plan identifies the following statewide management goals:

- Maintain population levels.
- Reduce harvest rates to 250 animals statewide.
- Reduce the female component of the harvest from the current statewide average of 45% to 25-30%.

These objectives have changed recently, at least temporarily, as we have seen an apparent increase in mountain lion numbers. Consequently the region has established more liberal seasons to harvest the increasing number of mountain lions and to address some of the current and potential problems associated with high mountain lion numbers.

BACKGROUND

Units within DAU 2-3 occur within wilderness and large roadless areas that afford limited access for hunters during the 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 DAU 2-3, the 2000-2001 mountain lion take season extended from August 30 through March 31, a 2-week extension. DAU 2-3 does not have a dog-training season, and there were no female harvest quotas.

HARVEST CHARACTERISTICS

Sex Ratio

During the 2000-2001 hunting season, DAU 2-3 hunters killed 35 mountain lions, including 16 females (Table 9). This was a doubling in harvest from the previous 3-year average and the highest ever recorded in this DAU. Few mountain lions are typically harvested from these units because of their remote nature and the difficult access facing hunters.

Age Structure

The numbers of mountain lions harvested is typically too small to reflect accurately the age structure of the population; however, age structure was evenly divided among age groups (Table 10).

Harvest Trend

Mountain lion harvest increased dramatically this year, likely a result of our increased bag limit and season length, increased nonresident hound permits, outfitter efforts, and low snow pack (Table 9). Because these are such large units with ample prey base, the mountain lion population is clearly much greater than harvest indicates. This suggests an underharvested population, but evidently self-regulating. The major restriction to harvest in this DAU is hunter access.

Harvest By Method and Weapon

Harvest in DAU 2-3 was 77% (24 of 34) by the use of hounds, the remainder incidental (4) and predator calling (1) (Table 11). The most common weapons used were rifle, pistol, and bow (Table 12).

CLIMATIC CONDITIONS

The Clearwater Region received 50% average precipitation at higher elevations during the winter of 2000-2001, but below average at lower elevations. Winter conditions for big game were favorable throughout the region. Snow conditions provided average to poor tracking conditions

throughout the region, and hunting continued all winter and spring due to low but persistent snow accumulations at lower elevations.

DEPREDATIONS

Because units in this DAU are comprised predominately of wilderness, depredations are not usually a concern. One depredation occurred during 2000-2001.

MANAGEMENT IMPLICATIONS

Because this DAU occupies such a large area and covers high quality big game range, the population of mountain lions can obviously sustain higher levels of harvest than what currently occurs. Incidental harvest has not increased in these units (occurrence of hunters who would shoot a mountain lion if they saw one), which may indicate that the population is remaining stable. The difference may lie within the prey base. Because mountain lions may be exploiting the whitetail prey base in other DAUs, their populations could increase beyond levels possible from preying on just mule deer and elk. However, whitetail are not widespread within these wilderness units and, therefore, mountain lion populations would not be expected to increase as dramatically as they could in those areas with quality whitetail habitat. That may be what has occurred over the last few years in units reflecting those conditions (Table 14).

Table 1. Mountain lion harvest in DAU 2-1, 1991-2000.

Year	Males	Females	Total	Percent Female
1991	25	18	43	42
1992	31	27	58	47
1993	46	28	74 ^a	38
1994	45	29	74 ^b	39
1995	45	61	106	58
1996	59	57	116	49
1997	75	72	147	49
1998	55	66	121	54
1999	45	29	74	39
2000	49	49	98	50
1997-1999 Average	58	56	114	49

Table 2. Mountain lion harvest by age class^a, sex, and year in DAU 2-1, 1991-2000.

Year	Sex	Age Class						Total
		K-3 (%)		4-7 (%)		8+ (%)		
1991	M	5	(13)	16	(41)	3	(8)	24
	F	6	(15)	9	(23)	0	(0)	15
1992	M	6	(12)	19	(37)	2	(4)	27
	F	6	(12)	18	(35)	0	(0)	24
1993	M	4	(7)	29	(50)	3	(5)	36
	F	5	(9)	15	(26)	1	(2)	21
1994	M	2	(10)	9	(45)	1	(5)	12
	F	3	(15)	4	(20)	1	(5)	8
1995	M	6	(6)	32	(32)	4	(4)	42
	F	11	(11)	41	(41)	7	(7)	59
1996	M	7	(6)	42	(36)	9	(8)	58
	F	18	(16)	36	(31)	3	(3)	57
1997	M	16	(11)	39	(28)	19	(14)	74
	F	16	(11)	45	(32)	5	(4)	66
1998	M	14	(13)	25	(24)	10	(9)	49
	F	20	(19)	32	(30)	5	(5)	57
1999	M	9	(13)	25	(35)	5	(7)	39
	F	8	(11)	23	(32)	1	(2)	32
2000	M	6	(8)	27	(35)	8	(10)	41
	F	12	(15)	23	(29)	3	(4)	38

^a Many age classes were improperly recorded and therefore not included. Any age class less than 0 or greater than 15 was considered invalid.

Table 3. Mountain lion harvest by method and sex in DAU 2-1, 1992-2000.

Method	1992		1993		1994		1995		1996		1997		1998		1999		2000	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Hounds	24	19	26	17	29	14	33	39	53	44	58	50	31	40	34	25	35	27
Incidental	3	5	14	6	13	10	10	19	6	13	15	21	7	12	4	9	10	18
Still Hunt	1	0	0	0	1	2	2	3	0	0	1	1	3	5	2	0	2	3
Unknown	3	3	6	5	2	3	0	0	0	0	1	0	0	0	1	0	1	0
Pred. Call	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	1	1
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	31	27	46	28	45	29	45	61	59	57	75	72	42	58	41	34	49	49

Table 4. Mountain lion harvest by weapon and sex in DAU 2-1, 1992-2000.

Weapon	1992		1993		1994		1995		1996		1997		1998		1999		2000	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Bow	6	12	8	5	11	1	5	5	9	8	7	9	5	5	7	1	5	3
Pistol	6	4	5	6	9	6	10	16	11	6	20	9	11	17	11	7	14	3
Rifle	16	8	26	13	23	19	30	39	37	32	46	52	26	36	19	25	29	38
Muzzle	0	0	1	0	0	0	0	1	0	0	0	1	0	0	3	0	1	4
Unknown	3	3	6	4	2	3	0	0	2	1	2	1	0	0	1	1	0	1
Total	31	27	46	28/	45	29	45	61	59	57	75	72	42	58	41	34	49	49

Table 5. Mountain lion harvest in DAU 2-2, 1991-2000.

Year	Males	Females	Total	Percent Female
1991	41	28	^a 70	40
1992	52	26	78	33
1993	64	51	^b 116	44
1994	46	34	80	43
1995	56	53	109	49
1996	66	55	121	45
1997	65	55	120	46
1998	43	48	91	53
1999	40	44	84	52
2000	47	51	98	52
1997-1999 Average	49	49	98	50

^a In 1991, one mountain lion was checked with sex unknown.

^b In 1993, one mountain lion was checked with sex unknown.

Table 6. Mountain lion harvest by age class^a, sex, and year in DAU 2-2, 1991-2000.

Year	Sex	K-3 (%)		4-7 (%)		8+ (%)		Total
1991	M	3	(4)	26	(39)	11	(16)	40
	F	9	(13)	18	(27)	0	(0)	27
1992	M	2	(3)	37	(57)	6	(9)	45
	F	6	(9)	13	(20)	1	(2)	20
1993	M	5	(5)	45	(42)	10	(9)	60
	F	14	(13)	32	(30)	2	(2)	48
1994	M	2	(5)	20	(48)	2	(5)	24
	F	5	(12)	12	(28)	1	(2)	18
1995	M	5	(5)	37	(36)	8	(8)	50
	F	17	(17)	28	(27)	7	(7)	52
1996	M	2	(2)	45	(38)	18	(15)	65
	F	5	(4)	33	(28)	16	(13)	54
1997	M	6	(5)	46	(38)	13	(11)	65
	F	9	(8)	41	(34)	5	(4)	55
1998	M	6	(7)	23	(27)	10	(12)	39
	F	5	(6)	37	(44)	4	(5)	46
1999	M	2	(3)	21	(28)	10	(13)	33
	F	10	(13)	25	(33)	8	(11)	43
2000	M	1	(1)	14	(18)	23	(29)	38
	F	11	(14)	24	(31)	5	(6)	40

^a Many age classes were improperly recorded and therefore not included. Any age class less than 0 or greater than 15 were considered invalid.

Table 7. Mountain lion harvest by method and sex in DAU 2-2, 1992-2000.

Method	1992		1993		1994		1995		1996		1997		1998		1999		2000	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Hounds	40	13	54	38	35	19	41	40	63	46	55	41	31	31	36	37	40	40
Incidental	4	5	7	11	6	11	15	8	3	6	9	11	11	10	3	6	4	9
Still Hunt	0	1	1	1	1	0	0	5	0	2	0	3	0	3	1	1	2	0
Unknown	7	7	2	1	4	3	0	0	0	0	1	0	0	1	0	0	1	1
Pred. Call	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Other	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Totals	52	26	64	51	46	34	56	53	66	55	65	55	42	45	40	44	47	51

Table 8. Mountain lion harvest by weapon and sex in DAU 2-2, 1992-2000.

Weapon	1992		1993		1994		1995		1996		1997		1998		1999		2000	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Bow	6	2	11	7	3	6	7	67	7	3	6	2	4	4	5	5	5	7
Pistol	22	6	21	21	18	7	13	19	24	22	26	17	12	16	17	8	19	13
Rifle	17	11	30	21	21	18	36	28	34	29	32	36	25	25	15	27	22	31
Muzzle	0	0	0	1	0	0	0	0	1	1	0	0	1	0	1	1	1	0
Unknown	7	7	4	6	0	0	0	0	0	0	1	0	0	0	2	3	0	0
Total	52	32	66	56	42	31	56	53	66	55	65	55	42	45	40	44	47	51

Table 9. Mountain lion harvest in DAU 2-3, 1991-2000.

Year	Males	Females	Total	Percent Female
1991	10	4	14	29
1992	16	5	21	24
1993	8	10	18	56
1994	6	5	11	45
1995	7	6	13	46
1996	4	4	8	50
1997	12	7	19	37
1998	11	6	17	35
1999	6	6	12	50
2000	19	16	35	46
1997-1999 Average	10	6	16	39

Table 10. Mountain lion harvest by age class^a, sex, and year in DAU 2-3, 1991-2000.

Year	Sex	K-3 (%)		4-7 (%)		8+ (%)		Total
1991	M	1	(7)	4	(28)	5	(36)	10
	F	2	(14)	2	(14)	0	(0)	4
1992	M	0	(0)	6	(32)	8	(42)	14
	F	0	(0)	4	(1)	1	(5)	5
1993	M	2	(14)	4	(29)	1	(7)	7
	F	2	(14)	5	(36)	0	(0)	7
1994	M	0	(0)	2	(40)	2	(40)	4
	F	0	(0)	1	(20)	0	(0)	1
1995	M	1	(9)	4	(36)	1	(9)	6
	F	1	(9)	3	(27)	1	(9)	5
1996	M	0	(0)	4	(50)	0	(0)	4
	F	1	13	3	(37)	0	(0)	4
1997	M	1	(5)	7	(37)	4	(21)	12
	F	2	(11)	5	(26)	0	(0)	7
1998	M	0	(0)	5	(31)	5	(31)	10
	F	0	(0)	5	(31)	1	(4)	6
1999	M	1	(8)	2	(17)	3	(25)	6
	F	1	(8)	5	(42)	0	(0)	6
2000	M	4	(13)	7	(23)	6	(19)	17
	F	5	(16)	4	(13)	5	(11)	14

^a Many age classes were improperly recorded and therefore not included. Any age class less than 0 or greater than 15 were considered invalid.

Table 11. Mountain lion harvest by method and sex in DAU 2-3, 1992-2000.

Method	1992		1993		1994		1995		1996		1997		1998		1999		2000	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Hounds	11	5	6	7	2	2	7	2	4	2	11	4	9	5	6	4	14	13
Incidental	2	0	1	2	4	2	0	3	0	2	1	2	3	0	0	1	2	2
Still Hunt	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
Unknown	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Pred. Call	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Other	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
Totals	16	5	8	10	6	5	7	6	4	4	12	7	13	5	6	6	19	16

Table 12. Mountain lion harvest by weapon and sex in DAU 2-3, 1992-2000.

Weapon	1992		1993		1994		1995		1996		1997		1998		1999		2000	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Bow	0	1	2	0	1	1	2	1	4	2	4	1	4	0	1	0	4	1
Pistol	9	3	2	3	1	0	4	1	4	1	7	2	1	2	2	2	11	11
Muzzle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	1	0	1	1	1	1	0	0	0	0	0	0	0	0	2	0	1	0
Rifle	6	1	3	6	5	3	1	4	0	1	1	4	5	3	1	4	3	4
Total	16	5	8	10	8	5	7	6	8	4	12	7	10	5	6	6	19	16

Table 13. Mountain lion harvest by DAU in the Clearwater Region, 1991-2000.

Year	DAU 2-1			DAU 2-2			DAU 2-3			Region		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
1991	25	18	43	42	28	70	10	4	14	77	50	127
1992	31	29	60	53	26	79	15	5	20	99	60	159
1993	46	27	73	64	51	115	8	10	18	118	88	206
1994	45	29	74	46	33	79	6	5	11	97	67	164
1995	44	63	107	56	52	108	8	6	14	108	121	229
1996	59	57	116	66	55	121	4	4	8	129	116	245
1997	75	72	147	65	55	120	12	7	19	152	134	286
1998	55	66	121	43	48	91	11	6	17	109	120	229
1999	41	35	76	40	44	84	6	6	12	87	85	172
2000	49	49	98	47	51	98	19	16	35	115	116	231

Table 14. Mountain lion harvest by Game Management Unit in the Clearwater Region, 1991-2000.

Unit	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
8	1	3	3	2	1	3	8	5	6	2
8A	9	4	6	13	11	17	15	21	14	12
10	13	23	30	20	16	21	20	19	16	19
10A	16	18	25	29	58	60	87	66	34	51
11	4	8	8	5	14	14	11	3	4	10
11A	0	0	1	5	7	1	6	6	2	4
12	18	18	24	10	16	18	23	21	24	30
13	2	6	10	4	10	9	8	4	4	7
14	12	17	24	10	17	16	16	18	26	13
15	24	21	35	26	41	51	42	17	9	14
16	9	13	12	16	16	18	18	20	13	17
16A	2	3	3	1	3	0	1	1	1	1
17	5	15	11	7	8	5	12	14	7	12
18	5	4	10	13	8	9	13	11	8	17
19	3	1	3	0	1	2	0	1	2	7
20	3	1	1	3	2	1	6	1	2	15
Total	126	155	206	164	229	245	286	228	172	231

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Mountain Lion Surveys</u>
PROJECT:	<u>W-170-R-25</u>		<u>and Inventories</u>
SUBPROJECT:	<u>3</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>I</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>8</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2000 to June 30, 2001</u>		

MOUNTAIN LION – SOUTHWEST REGION

ABSTRACT

Mandatory harvest reports indicated 175 mountain lions (89 male and 86 female) were harvested within the southwest region during the 2000-2001 season. The 2000-2001 harvest was 46% greater than that reported in 1999-2000. Fourteen units in the southwest region have a female harvest quota. Two units (39 and 40) in the southwest region closed because the initial female mountain lion harvest quota was met, but were reopened when the commission authorized an extension of the female quota. Forty-nine percent of the harvest was female mountain lions in 2000-2001. Rifles were the most common weapon used to harvest mountain lions. Guides were used by 24% of the successful mountain lion hunters. Incidental and still hunters harvested 17% of the mountain lions.

DAU 3-1 (GMUS 22, 24, 31, 32, 32A)

MANAGEMENT DIRECTION

Management direction listed in the 1991-1995 Mountain Lion Species Management Plan directed the Department to stabilize harvest rates and reduce female harvest rates by use of all or a combination of the following strategies: establishing harvest goals and/or quotas, reducing the number of nonresident hound hunters, establishing a fiscal year limit of one mountain lion, initiating a 3-day waiting period for harvesting a mountain lion after buying a tag, encouraging the selective harvest of males, and reducing season lengths or initiating controlled hunts in units subject to overharvest.

BACKGROUND

Mountain lions were considered rare in these game management units in the late 1970s and early 1980s. Like mountain lion populations in other parts of the state, those in DAU 3-1 began increasing dramatically in the early 1990s. Subsequently, mountain lion sightings, depredation occurrences, and sportsmen concerns increased. Conservative seasons adopted in the 1980s were modified to the more liberal seasons currently in place (Table 1). Female mountain lion harvest

quotas were implemented in these highly accessible units to allow ample sport harvest opportunity yet protect the mountain lion populations from overharvest. The use of dogs is allowed in mountain lion take seasons provided there is no open firearm season for deer and elk. In game management units with female mountain lion harvest quotas, a dog training season opens with the closure of the take season when a female quota is met.

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, extracting a premolar, and canine tooth measurement. Information is also recorded on sex, age, weapon type, hunt method, and date of kill.

Harvest increased 12% from 1999 to 2000 and was 19% above the five-year average (Table 2). The proportion of females in the harvest also increased from 39% in 1999 to 43% in 2000. The female mountain lion harvest quota was not met in any of these units in 2000. Thirty-five of the 37 harvested mountain lions were taken during December, January, and February (Table 3). Tooth drop measurements indicated most of harvested mountain lions were in the 4- to 7-year-old age class (Table 5).

Hunters using rifles and hounds harvest the most mountain lions in the Southwest Region (Table 6). Incidental mountain lion kills have been increasing; however, they still comprise less than 10% of the harvest. Most hunters who harvested mountain lions were unguided.

CLIMATIC CONDITIONS

The 2000-2001 winter period provided mixed mountain lion hunting conditions. Precipitation was 60% of average. Snow conditions allowed vehicular access to areas traditionally inaccessible in winter, probably contributing to the increase in harvest.

DEPREDACTIONS

Most mountain lion depredations are handled by USDA-APHIS Wildlife Services in accordance with the interagency Memorandum of Understanding (MOU) between Wildlife Services and the Department. Depredation records were not available for this reporting period. Mountain lion incident reports have been occurring, but record keeping is sporadic.

MANAGEMENT IMPLICATIONS

Female mountain lion harvest quotas, implemented to skew mountain lion harvest toward the male component, seem to be working in this DAU. Due to the high accessibility to mountain lion habitat in this DAU, harvest restrictions, such as female harvest quotas, are necessary to maintain viable populations and subsequent hunter satisfaction. Population objectives and hunter desires need to be reviewed, updated, and incorporated into the 2002-2010 Mountain Lion Species Management Plan revision.

DAU 3-2 (GMUS 19A, 23, 25, 33, 34, 35, 39)

MANAGEMENT DIRECTION

Management direction listed in the 1991-1995 Mountain Lion Species Management Plan directed the Department to stabilize harvest rates and reduce female harvest rates by use of all or a combination of the following strategies: establishing harvest goals and/or quotas, reducing the number of nonresident hound hunters, establishing a fiscal year limit of one mountain lion, initiating a 3-day waiting period for harvesting a mountain lion after buying a tag, encouraging the selective harvest of males, and reducing season lengths or initiating controlled hunts in units subject to overharvest.

BACKGROUND

Mountain lions occurred in lower densities in these game management units in the late 1970s and early 1980s. Dispersing mountain lions from the more remote wilderness units were thought to supply these units with huntable mountain lion populations. Like mountain lion populations in other parts of the state, those in DAU 3-2 began increasing dramatically in the early 1990s. Subsequently, mountain lion sightings, depredation occurrences, and sportsmen concerns increased. Conservative seasons adopted in the 1980s were modified to the more liberal seasons currently in place (Table 6). Female mountain lion harvest quotas were implemented in the more accessible units of this DAU to allow ample sport harvest opportunity, but ensure the mountain lion populations would not be overharvested. The use of dogs is allowed in mountain lion take seasons provided there is no open firearm season for deer and elk. In game management units with female mountain lion harvest quotas, a dog training season opens with the closure of the take season when a female quota is met.

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, extracting a premolar, and canine tooth measurement. Information is also recorded on sex, age, weapon type, hunt method, and date of kill.

Harvest increased 34% from 1999 to 2000 and was 32% above the five-year average (Table 7). The proportion of females in the harvest also increased from 38% in 1999 to 48% in 2000. The female mountain lion harvest quota of ten was initially met in Unit 39; however, the Commission authorized a one-time extension of the quota in this unit to 15 female mountain lions in the 2000-2001 season. Sixty-nine of the 86 (80%) harvested mountain lions were taken during December and January (Table 8). Tooth drop measurements indicated most of harvested mountain lions were in the 4- to 7-year-old age class (Table 9).

CLIMATIC CONDITIONS

The 2000-2001 winter period provided mixed mountain lion hunting conditions. Precipitation was 60% of average. Snow conditions allowed access to areas traditionally inaccessible in winter, probably contributing to the increase in harvest.

DEPREDATIONS

Most mountain lion depredations are handled by USDA-APHIS Wildlife Services in accordance with the interagency MOU between Wildlife Services and the Department. Depredation records were not available for this reporting period. Mountain lion incident reports have been occurring, but record keeping is sporadic.

MANAGEMENT IMPLICATIONS

Quotas on female mountain lion harvest, implemented to skew mountain lion harvest toward the male component, seem to be working in most of the units in this DAU. Harvest restrictions, such as female harvest quotas, are necessary primarily in Units 23 and 39 to maintain viable populations and subsequent hunter satisfaction. Removal or extension of quotas in these units will allow for short-term increases in hunter opportunity, but will most likely result in hunter dissatisfaction if continued for any length of time. Population objectives and hunter desires need to be reviewed, updated, and incorporated into the 2002-2010 Mountain Lion Species Management Plan revision.

DAU 3-3 (GMUS 20A, 26)

MANAGEMENT DIRECTION

Management direction listed in the 1991-1995 Mountain Lion Species Management Plan directed the Department to stabilize harvest rates and reduce female harvest rates by use of all or a combination of the following strategies: establishing harvest goals and/or quotas, reducing the number of nonresident hound hunters, establishing a fiscal year limit of one mountain lion, initiating a 3-day waiting period for harvesting a mountain lion after buying a tag, encouraging the selective harvest of males, and reducing season lengths or initiating controlled hunts in units subject to overharvest.

BACKGROUND

DAU 3-3 is characterized by limited access and rugged topography, almost totally 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 game management units. Wolves were reintroduced as predators in DAU 3-3 in 1995. The coexistence of these species has not been determined to date. The current structure of long seasons and two mountain lion bag limits was implemented in this DAU in response to

sportsmen's concerns about declining ungulate recruitment (Table 10). The use of dogs is allowed in mountain lion take seasons after October 31.

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, extracting a premolar, and canine tooth measurement. Information is also recorded on sex, age, weapon type, hunt method, and date of kill.

Harvest was similar between the 1999 and 2000 seasons (Table 11). The proportion of females in the harvest was 60% in 2000. Nine of the ten (90%) harvested mountain lions were taken during November, December, and January (Table 12). Tooth drop measurements indicated all of the harvested mountain lions were in the 4- to 7-year-old age class (Table 13).

CLIMATIC CONDITIONS

The 2000-2001 winter period provided mixed mountain lion hunting conditions. Precipitation was 60% of average.

DEPREDATIONS

Depredations rarely occur in this area due to its remote nature and lack of domestic livestock activities.

MANAGEMENT IMPLICATIONS

The remote nature of this DAU makes it unlikely that sport harvest can regulate mountain lion population numbers. The establishment of wolf packs will likely have the greatest effect on mountain lion populations in this area. Monitoring of this effect is needed. Mountain lion population objectives and hunter desires need to be reviewed, updated, and incorporated into the 2002-2010 Mountain Lion Species Management Plan revision.

DAU 3-4 (GMUS 40, 41, 42)

MANAGEMENT DIRECTION

Management direction listed in the 1991-1995 Mountain Lion Species Management Plan directed the Department to stabilize harvest rates and reduce female harvest rates by use of all or a combination of the following strategies: establishing harvest goals and/or quotas, reducing the number of nonresident hound hunters, establishing a fiscal year limit of one mountain lion, initiating a 3-day waiting period for harvesting a mountain lion after buying a tag, encouraging the selective harvest of males, and reducing season lengths or initiating controlled hunts in units subject to overharvest.

BACKGROUND

DAU 3-4 encompasses the southwest portion of Idaho. Habitats are generally dry and range from desert to distinctly dry forest. The general scarcity of trees and presence of cliffs and other rocky features make mountain lions more difficult to capture because they are forced to seek shelter in rocks more often than in other areas of Idaho. Access roads often do not traverse big game winter ranges, and most mountain lion habitat is not close to major human population centers. Another characteristic that sets DAU 3-4 apart from other areas in the Southwest Region is that elk are either absent or very scarce, and deer are the major big game prey species for mountain lions. A spike in female mountain lion harvest in the mid-1990s, due in part to increase success of professionally guided sportsmen, led to the current season framework that includes female mountain lion harvest quotas (Table 14). The use of dogs is allowed in mountain lion take seasons provided there is no open firearm season for deer and elk. In game management units with female mountain lion harvest quotas, a dog training season opens with the closure of the take season when a female quota is met.

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 canine tooth measurement for age estimation. Information is recorded on sex, age, weapon type, hunt type (guided, unguided, hounds, still, incidental), and date of kill.

Harvest increased 8% from 1999 to 2000 and was 61% above the five-year average (Table 15). The proportion of females in the harvest also increased from 38% in 1999 to 55% in 2000. The female mountain lion harvest quota of ten was initially met in Unit 40; however, the Commission authorized a one-time extension of the quota in this unit to 15 female mountain lions in the 2000-2001 season. Thirty-two of the 42 (76%) harvested mountain lions were taken during December and January (Table 16). Tooth drop measurements indicated most of harvested mountain lions were in the 4- to 7-year-old age class (Table 17).

CLIMATIC CONDITIONS

The 2000-2001 winter period provided mixed mountain lion hunting conditions. Precipitation was 60% of average. Snow depths did not restrict access.

DEPREDATIONS

Depredations rarely occur in this area due to its remote nature and lack of domestic sheep grazing activities.

MANAGEMENT IMPLICATIONS

Quotas on female mountain lion harvest, implemented to skew mountain lion harvest toward the male component, seem to be working in most of the units in this DAU. Harvest restrictions, such

as female harvest quotas, are necessary primarily in Unit 40 to maintain viable populations and subsequent hunter satisfaction. Removal or extension of quotas in these units will allow for short-term increases in hunter opportunity, but will most likely result in hunter dissatisfaction if continued for any length of time. Population objectives and hunter desires need to be reviewed, updated, and incorporated into the 2002-2010 Mountain Lion Species Management Plan revision.

Table 1. Mountain lion season structure for DAU 3-1 during 2000-2001 season.

Unit	Take Season	Season Length	Harvest Quota
22	August 30 – March 31	215 days	6 Females
24	August 30 – March 31	215 days	5 Females
31, 32	August 30 – March 31	215 days	7 Females
32A	August 30 – March 31	215 days	5 Females

Table 2. Mountain lion harvest in DAU 3-1, 1996-2000.

Year	Males	Females	Total	Percent Female
1996	15	8	23	35
1997	26	12	38	32
1998	12	16	28	57
1999	20	13	33	39
2000	21	16	37	43
1996-2000 Average	18	13	31	42

Table 3. Mountain lion harvest by sex and unit in DAU 3-1 during 2000-2001 season.

Unit	Sex	Month							Total
		Sept	Oct	Nov	Dec	Jan	Feb	Mar	
22	M	0	0	0	2	0	0	0	2
	F	0	1	0	1	2	0	0	4
24	M	0	0	1	0	0	2	0	3
	F	0	0	0	0	1	3	0	4
31	M	0	0	0	3	3	0	0	6
	F	0	0	0	2	1	1	0	4
32	M	0	0	0	1	1	2	0	4
	F	0	0	0	1	0	0	0	1
32A	M	0	0	0	3	2	1	0	6
	F	0	0	0	3	0	0	0	3
Total	M	0	0	1	9	6	5	0	21
	F	0	1	0	7	4	4	0	16

Table 4. Mountain lion harvest by age and sex classes by unit in DAU 3-1 during 2000-2001 season^a.

Unit	Sex	Age Class		
		K-3 (%)	4-7 (%)	8+ (%)
22	M	0	2 (100)	0
	F	0	4 (100)	0
24	M	0	1 (50)	1 (50)
	F	0	3 (100)	0
31	M	0	4 (100)	0
	F	1 (25)	3 (75)	0
32	M	1 (25)	2 (50)	1 (25)
	F	0	1 (100)	0
32A	M	0	4 (100)	0
	F	1 (33)	2 (67)	0
Total	M	1 (6)	13 (82)	2 (12)
	F	2 (13)	13 (87)	0

^a The percentage figures in this table are based on extremely small sample sizes and must be interpreted with caution.

Table 5. Mountain lion harvest by method in the Southwest Region during 2000-2001 season.

Method	Males	Females	Total
Weapon			
Rifle	41	47	88
Bow	13	10	23
Mzldr.	3	0	3
Pistol	31	28	59
Other	1	1	2
Guided			
Yes	24	18	42
No	65	68	133
Method			
Still	8	6	14
Incid.	5	11	16
Pred. Call	2	3	5
Hounds	72	65	137
Other	2	1	3

Table 6. Mountain lion season structure for DAU 3-2 during 2000-2001 season.

Unit	Take Season	Season Length	Harvest Quota
19A	August 30 – March 31	215 days	None
23	August 30 – March 31	215 days	8 Females
25	August 30 – March 31	215 days	5 Females
33, 34, 35	August 30 – March 31	215 days	10 Females
39	August 30 – March 31	215 days	10 Females

Table 7. Mountain lion harvest in DAU 3-2, 1996-2000.

Year	Males	Females	Total	Percent Female
1996	17	9	26	35
1997	49	25	74	34
1998	47	26	73	36
1999	40	24	64	38
2000	45	41	86	48
1996-2000 Average	40	25	65	38

Table 8. Mountain lion harvest by sex and unit in DAU 3-2 during 2000-2001 season.

Unit	Sex	Month							Total
		Sept	Oct	Nov	Dec	Jan	Feb	Mar	
19A	M	0	0	2	1	1	0	0	4
	F	0	0	0	3	2	0	0	5
23	M	1	0	0	1	4	1	0	7
	F	0	0	1	2	4	0	0	7
25	M	0	1	0	0	0	0	0	1
	F	0	2	0	1	2	0	0	5
33	M	0	0	0	4	4	1	0	9
	F	0	1	1	2	4	0	0	8
34	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0
35	M	0	0	0	2	2	0	0	4
	F	1	0	0	0	1	0	0	2
39	M	0	0	3	10	7	0	0	20
	F	0	0	2	7	5	0	0	14
Total	M	1	1	5	18	18	2	0	45
	F	1	3	4	15	18	0	0	41

Table 9. Mountain lion harvest by age and sex classes by unit in DAU 3-2 during 2000-2001 season^a.

Unit	Sex	Age Class		
		K-3 (%)	4-7 (%)	8+ (%)
19A	M	1 (25)	1 (25)	2 (50)
	F	0	2 (100)	0
23	M	1 (14)	4 (58)	2 (28)
	F	2 (33)	4 (67)	0
25	M	0	1 (100)	0
	F	1 (25)	3 (75)	0
33	M	0	6 (67)	3 (33)
	F	1 (17)	5 (83)	0
34	M	0	0	0
	F	0	0	0
35	M	0	4 (100)	0
	F	0	1 (50)	1 (50)
39	M	3 (16)	12 (63)	4 (21)
	F	4 (29)	9 (64)	1 (7)
Total	M	5 (11)	28 (64)	11 (25)
	F	8 (24)	24 (70)	2 (6)

^a The percentage figures in this table are based on extremely small sample sizes and must be interpreted with caution.

Table 10. Mountain lion season structure for DAU 3-3 during 2000-2001 season.

Unit	Take Season	Season Length	Harvest Quota
20A ^a	August 30 – April 30	215 days	None
26 ^a	August 30 – April 30	215 days	None

^aTwo mountain lion bag limit.

Table 11. Mountain lion harvest in DAU 3-3, 1996-2000.

Year	Males	Females	Total	Percent Female
1996	2	1	3	33
1997	3	3	6	50
1998	0	3	3	100
1999	3	6	9	67
2000	4	6	10	60
1996-2000 Average	2	4	6	67

Table 12. Mountain lion harvest by sex and unit in DAU 3-3 during 2000-2001 season.

Unit	Sex	Month							Total
		Sept	Oct	Nov	Dec	Jan	Feb	Mar	
20A	M	0	0	0	0	1	0	0	1
	F	0	0	1	2	1	1	0	5
26	M	0	0	0	0	2	1	0	3
	F	0	0	1	0	0	0	0	1
Total	M	0	0	0	0	3	1	0	4
	F	0	0	2	2	1	1	0	6

Table 13. Mountain lion harvest by age and sex classes by unit in DAU 3-3 during 2000-2001 season^a.

Unit	Sex	Age Class		
		K-3 (%)	4-7 (%)	8+ (%)
20A	M	0	1 (100)	0
	F	0	4 (100)	0
26	M	0	3 (100)	0
	F	0	1 (100)	0
Total	M	0	4 (100)	0
	F	0	5 (100)	0

^a The percentage figures in this table are based on extremely small sample sizes and must be interpreted with caution.

Table 14. Mountain lion season structure for DAU 3-4 during 2000-2001 season.

Unit	Take Season	Season Length	Harvest Quota
40	August 30 – March 31	215 days	10 Females
41, 42	August 30 – March 31	215 days	10 Females

Table 15. Mountain lion harvest in DAU 3-4, 1996-2000.

Year	Males	Females	Total	Percent Female
1996	10	10	20	50
1997	4	10	14	71
1998	9	8	17	47
1999	24	15	39	38
2000	19	23	42	55
1996-2000 Average	13	13	26	50

Table 16. Mountain lion harvest by sex and unit in DAU 3-4 during 2000-2001 season.

Unit	Sex	Month							Total
		Sept	Oct	Nov	Dec	Jan	Feb	Mar	
40	M	1	1	1	8	6	0	0	17
	F	0	0	1	7	8	0	0	16
41	M	0	0	0	0	1	1	0	2
	F	0	0	1	0	1	1	1	4
42	M	0	0	0	0	0	0	0	0
	F	0	0	0	1	0	1	1	3
Total	M	1	1	1	8	7	1	0	19
	F	0	0	2	8	9	2	2	23

Table 17. Mountain lion harvest by age and sex classes by unit in DAU 3-4 during 2000-2001 season^a.

Unit	Sex	Age Class		
		K-3 (%)	4-7 (%)	8+ (%)
40	M	2 (14)	12 (86)	0
	F	6 (40)	9 (60)	0
41	M	0	2 (100)	0
	F	2 (50)	2 (50)	0
42	M	0	0	0
	F	0	2 (100)	0
Total	M	2 (14)	14 (86)	0
	F	8 (38)	13 (62)	0

^a The percentage figures in this table are based on extremely small sample sizes and must be interpreted with caution.

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Mountain Lion Surveys</u>
PROJECT:	<u>W-170-R-25</u>		<u>and Inventories</u>
SUBPROJECT:	<u>4</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>I</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>8</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2000 to June 30, 2001</u>		

MOUNTAIN LION – MAGIC VALLEY REGION

ABSTRACT

Mandatory reports indicated a hunter harvest of 35 mountain lions in the Magic Valley Region during the 2000-2001 season, a decrease of 8% from the 1999-2000 season when 38 mountain lions were taken in the region. Thirteen mountain lions were hunter harvested in Area 4-1, 15 in Area 4-2, 5 in Area 4-3, and 2 in the Unit 49 portion of Area 4-4. Five other mountain lions were killed in the region during 2000-2001; 2 were taken in response to depredation problems and Department personnel euthanized 3 others. The female quota was reached in two harvest areas, 4-1 (Units 43, 44, 45, 48) closed on January 20, 2001 and 4-3 (Units 56, 57) closed on February 8, 2001.

The best hunting conditions occurred during December and January during which 66% of the harvest occurred. Fifteen of 35 (43%) mountain lions checked in 2000-2001 were females. Hound hunting accounted for 27 (77%) of the hunter-harvested mountain lions in the region.

DAU 4-1 (GMUS 43, 44, 45, 48)

MANAGEMENT DIRECTION

Management Objectives

- Stabilize harvest rates.
- Reduce the female component of the harvest to 25-35%.

BACKGROUND

Historical Information

Area 1 units have accounted for only 16% of the mountain lion harvest in the Magic Valley Region over the last 10 years (Table 1). Prior to 1994, most mountain lion depredations on livestock occurred in these units; however, in recent years depredations have been rare.

Season Structure

General	9/15-3/31	43, 44, 48, (49)	3-female quota
		45, (52, 52A, 53)	3-female quota

Note: Units in parenthesis are not in the 1991-1995 Mountain Lion Management Plan management area, but are grouped for female quota purposes. Unit 49 data is presented under Area 4-4.

HARVEST CHARACTERISTICS

The 2000-2001 harvest in Area 4-1 was 117% above the 10-year average (Table 1). Thirteen hunter-harvested mountain lions (8 males and 5 females) were checked from Area 4-1; 4 from Unit 43, 3 from Unit 44, and 6 from Unit 45. Nine of the 13 mountain lions (69%) were taken during December and January (Table 5). Eight of 10 mountain lions that were aged were in the 4-7 year age class (Table 6). Hunting access was not restricted by snow throughout the winter. Eight of the 13 mountain lions harvested in this area were taken with hounds, 3 through stalking, 1 from predator calling, and 1 incidental to other hunting activities (Table 7).

DEPREDATIONS

The Department did not receive any official depredation complaints, but one private landowner took 1 mountain lion as it was eating his chickens.

MANAGEMENT IMPLICATIONS

A 3-female quota was implemented for the 3 combined units for the 1994-1995 season to help meet the objective of controlling female harvest. The quota was met for the 1994-1995 season but not for the 1995-1996 season. The grouping of units for female quotas was changed for the 1996-1997 season to help increase mountain lion harvest. Unit 49 was added to Units 43 and 44 while Unit 45 was added to a new group, which included Units 52, 52A, and 53. Three-female quotas were implemented for both harvest groups. Harvest was allowed for the first time in Unit 48 during the 1999-2000 season. Unit 48 was added to the female quota group that includes Units 43, 44, and 49. The female quota for the 2000-2001 season was met in the 43, 44, 48 and 49 group of units on January 20, 2001. Harvest is influenced largely by snow conditions. Units 43, 44, 48, and 49 typically have very limited access after mid-December; however, in 2000-2001 access was good throughout all of these units. The other four units generally have good access throughout every winter.

DAU 4-2 (GMUS 46, 47, 54, 55)

MANAGEMENT DIRECTION

Management Objectives

- Decrease or stabilize populations.
- Reduce the female component of the harvest to 25-35%.

BACKGROUND

Historical Information

Units 46, 47, 54, and 55 have accounted for about 64% of the mountain lion harvest in the Magic Valley Region during the last 10 years (Table 2). Unit 54 has consistently had the highest annual mountain lion harvest of any GMU in the region. Until 1996, when mountain lion seasons were lengthened throughout the Magic Valley Region, Units 46, 47, and 54 had the most liberal seasons, staying open through February.

A 1-female harvest quota was placed on Unit 55 beginning in 1989. The quota was implemented to address concerns raised by Idaho State University's ongoing research project. The quota was filled in 1990-1991 (November 6), 1992-1993 (December 31), and 1993-1994 (November 18) but not in 1989-1990 or 1991-1992. The Unit 55 quota was increased to 3 females in 1994-1995 and the season was closed on January 15 and in 1995-1996 was closed on February 6. In the 1996-1997 season, Units 55, 56, and 57 were grouped together to increase harvest (7-female quota). The units were regrouped again in 1997-1998 with an increased female quota for additional harvest (Unit 55-6 females and Units 56 and 57-3 females). Seasons and quotas have remained the same since the 1997-1998 season.

Season Structure

General	9/15-3/31	46, 47	3-female quota
		54	6-female quota
		55	6-female quota

Management Studies

Idaho State University personnel continued their research on mountain lions in Units 55, 56, and 57. This study has been ongoing since 1986. Research summaries are presented in annual progress reports from Idaho State University.

HARVEST CHARACTERISTICS

The reported harvest of 15 mountain lions in 2000-2001 was 40% lower than the previous year and 29% below the 10-year average. Unit 54 traditionally accounts for the highest percentage of the harvest in these units, and in 2000-2001 accounted for 47% of the harvest. In 2000-2001, 2 mountain lions were taken in Unit 47, 7 in Unit 54, and 6 in Unit 55. Females accounted for 47% of the 2000-2001 harvest, which is above the 10-year average of 41% (Table 2). Of the 15 mountain lions harvested in these units, 40%, 47%, and 7% were in the K-3 years, 4-7 years, and 8+ years age classes, respectively (Table 6). Fifty-three percent (8/15) of the harvest occurred during December and January when tracking conditions were best (Table 5). Hound hunting accounted for 14 of the 15 mountain lions (93%) harvested in this area (Table 7).

DEPREDATIONS

Historically mountain lion depredations were uncommon in these units compared to the northern Magic Valley Region units. However, following the decline in mule deer numbers in 1993, mountain lion depredations on domestic livestock increased. From 1993-1995, sheepherders or Wildlife Services personnel killed 8 mountain lions. From 1996-1999, 6 problem mountain lions were killed in Unit 54 by Noh Sheep Co. and a claim of \$1,425 was paid in 1996-1997. During the 2000-2001 reporting period, Noh's sheepherder killed 1 female mountain lion and no damage claim was filed. One other subadult female mountain lion was captured and euthanized by IDFG personnel in the City of Albion.

MANAGEMENT IMPLICATIONS

Mountain lion populations appear to have increased for the 4 years prior to the 1997-1998 season, as evidenced by increased harvest, increased depredation complaints, and an increase in mountain lion observations by the public. However, since 1998 mountain lion populations appear to have stabilized or declined based on harvest data and reports from mountain lion hunters. Liberal harvest strategies will be continued for the 2001-2002 season.

DAU 4-3 (GMUS 56, 57)

MANAGEMENT DIRECTION

Management Objectives

- Reduce or stabilize the mountain lion population.
- Reduce the female harvest to 25-35% of the total harvest.

BACKGROUND

Historical Information

Unit 57 has been open to general mountain lion hunting since 1981. Unit 56 was closed to take seasons in 1981 and 1982 and from 1986-1992. Pursuit seasons were authorized in Unit 56 in 1991 and 1992 at the request of mountain lion hunters to learn more about mountain lion populations in the unit. Based on comments from houndsmen and field personnel, Unit 56 was determined to have an adequate mountain lion population to sustain limited harvest. A 1-female quota was placed on Unit 56 and adjacent Unit 57 for the 1992-1994 seasons to minimize harvest. The quota was raised to 2 females for the 1994-1995 and 1995-1996 seasons based on ongoing research and hunter observations. In 1996-1997, Units 56 and 57 were grouped with Unit 55 for female quota purposes and the female quota was set at 7, a net increase of 2 from the combined unit quotas in 1995-1996. In 1997-1998, Units 56 and 57 were grouped separately from Unit 55 for female quota purposes and the quotas were set at 3 and 6, respectively. No changes have been made to the season length or female quota since that time.

Season Structure

General	9/15-3/31	56, 57	3-female quota
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HARVEST CHARACTERISTICS

A harvest of 5 mountain lions was reported for these units in 2000-2001, which is equal to the 10-year average (Table 3). Sixty percent of reported harvest was females (Table 5). Of the 5 mountain lions harvested, 1 was in the K-3 year age class, 3 were in the 4-7 year age class, and 1 was in the unknown age class (Table 6). Eighty percent of the mountain lions were taken in December (Table 5). Three of the 5 mountain lions harvested were taken with hounds (Table 7). The 3-female quota was met on February 8, 2001.

DEPREDATIONS

No depredations were reported in these units.

MANAGEMENT IMPLICATIONS

These units will remain grouped together and will maintain a 3-female quota for the 2001-2002 season.

DAU 4-4 (GMU 49)

MANAGEMENT DIRECTION

Management Objectives

- Stabilize harvest rates.
- Reduce the female component of the harvest to 25-35% of the total harvest.

BACKGROUND

Historical Information

Unit 49 was closed to mountain lion hunting from 1976-1988. An increase in mountain lion observations by Department and Wildlife Services field personnel, deer and elk hunters, and bobcat trappers prompted the season to be opened in 1988-1989. Mountain lion depredations on livestock in this unit have been infrequent. For the 1994-1995 and 1995-1996 seasons, Unit 49 was combined with Units 50 and 51 with a 3-female quota. During the 1996-1997 season, Unit 49 was combined with Units 43 and 44 with a 3-female quota. In the 1999-2000 season, Unit 48 was added to this group of units for female quota purposes.

Season Structure

General	9/15-3/31	49 (43, 44, 48)	3-female quota
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Note: Units in parenthesis are not grouped with Unit 49 in the 1991-1995 Mountain Lion Management Plan management area, but are grouped for female quota purposes. Data presented are only for units in management area 4-4.

HARVEST CHARACTERISTICS

Two mountain lions were harvested in Unit 49 during the 2000-2001 season (Tables 4 and 5). Both of the mountain lions harvested were in the 4-7 year age-class. The 3-female quota was met on January 20, 2001. Units 50 and 51 are managed by the Upper Snake Region and are reported on elsewhere in this report.

DEPREDATIONS

No depredations were reported in this unit

MANAGEMENT IMPLICATIONS

Harvest in Unit 49 has typically been light with only 17 mountain lions taken since 1991. Snow conditions and access continue to play a substantial roll in mountain lion harvest in this unit. Unit 49 will continue to be grouped with Units 43, 44, and 48 for the purpose of establishing female quotas.

Table 1. Mountain lion harvest in DAU 4-1, 1991-2000.

Year	Males	Females	Total	Percent Female
1991	3	4	7	57
1992	1	1	2	50
1993	1	1	2	50
1994	2	3	5	60
1995	5	2	7	29
1996	2	1	3	33
1997	3	5	8	62
1998	4	0	4	0
1999	5	2	7	29
2000	8	5	13	38
1991-2000 Average	3.4	2.4	5.8	41

Table 2. Mountain lion harvest in DAU 4-2, 1991-2000.

Year	Males	Females	Total	Percent Female
1991	6	4	10	40
1992	13	8	21	38
1993	10	8	18	44
1994	14	8	22	36
1995	18	9	27	33
1996	20	10	30	33
1997	13	13	26	46
1998	8	10	18	55
1999	14	11	25	44
2000	8	7	15	47
1991-2000 Average	12.4	8.8	21.2	41

Table 3. Mountain lion harvest in DAU 4-3, 1991-2000.

Year	Males	Females	Total	Percent Female
1991	1	0	1	0
1992	0	0	0	0
1993	4	0	4	0
1994	4	0	4	0
1995	8	0	8	0
1996	5	5	10	50
1997	2	3	5	60
1998	6	3	9	33
1999	2	2	4	50
2000	2	3	5	60
1991-2000 Average	3.4	1.6	5.0	32

Table 4. Mountain lion harvest in DAU 4-4, 1991-2000.

Year	Males	Females	Total	Percent Female
1991	0	0	0	0
1992	0	0	0	0
1993	1	0	1	0
1994	2	0	2	0
1995	1	0	1	0
1996	2	3	5	60
1997	0	0	0	0
1998	3	1	4	25
1999	2	0	2	0
2000	2	0	2	0
1991-2000 Average	1.3	0.4	1.7	23

Table 5. Mountain lion harvest by sex and unit in the Magic Valley Region during 2000-2001 season.

Unit	Sex	Month							Total
		Sept	Oct	Nov	Dec	Jan	Feb	Mar	
43	M	0	0	0	0	1	0	0	1
	F	0	1	0	1	1	0	0	3
44	M	0	0	1	0	2	0	0	3
	F	0	0	0	0	0	0	0	0
45	M	0	0	0	2	2	0	0	4
	F	0	0	0	0	0	2	0	2
46	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0
47	M	0	0	0	0	0	1	0	1
	F	0	0	0	0	0	1	0	1
48	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0
49	M	0	0	0	0	2	0	0	2
	F	0	0	0	0	0	0	0	0
52	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0
52A	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0
54	M	0	0	1	3	1	0	0	5
	F	0	0	0	0	2	0	0	2
55	M	0	0	1	0	1	0	0	2
	F	0	0	1	0	1	2	0	4
56	M	0	0	0	2	0	0	0	2
	F	0	0	0	2	0	1	0	3
57	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0
Total	M	0	0	3	7	9	1	0	20
	F	0	1	1	3	4	6	0	15

Table 6. Mountain lion harvest by age and sex classes by unit in the Magic Valley Region during 2000-2001 season.

Unit	Sex	Age Class			
		K-3 (%)	4-7 (%)	8+ (%)	Unknown (%)
43	M	0	1	0	0
	F	1	1	0	1
44	M	0	3	0	0
	F	0	0	0	0
45	M	0	3	1	0
	F	0	0	0	2
46	M	0	0	0	0
	F	0	0	0	0
47	M	1	0	0	0
	F	0	1	0	0
48	M	0	0	0	0
	F	0	0	0	0
49	M	0	2	0	0
	F	0	0	0	0
52	M	0	0	0	0
	F	0	0	0	0
53	M	0	0	0	0
	F	1	0	0	0
54	M	1	3	1	0
	F	1	0	0	1
55	M	1	1	0	0
	F	2	2	0	0
56	M	0	1	0	1
	F	1	2	0	0
57	M	0	0	0	0
	F	0	0	0	0
Totals	M	3	14	2	1
	F	6	6	0	4

Table 7. Mountain lion harvest by method in the Magic Valley Region during 2000-2001 season.

Method	Males	Females	Total
Weapon			
Rifle	12	9	21
Bow	1	2	3
Muzzleloader	0	0	0
Pistol	7	4	11
Other/Unknown	0	0	0
Guided			
Yes	3	2	5
No	17	13	30
Other/Unknown	0	0	0
Method			
Still	3	0	3
Bait	0	0	0
Incidental	0	3	3
Predator Call	0	2	2
Hounds	17	10	27
Other/Unknown	0	0	0

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Mountain Lion Surveys</u>
PROJECT:	<u>W-170-R-25</u>		<u>and Inventories</u>
SUBPROJECT:	<u>5</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>I</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>8</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2000 to June 30, 2001</u>		

MOUNTAIN LION – SOUTHEAST REGION

ABSTRACT

During the report period the female harvest quota first initiated in 1991 was again instituted with a region-wide female harvest quota of 25. The west district quota of 15 females was not reached, but the east district quota of 10 females was reached in January 2000.

Forty-one mountain lions (21 males and 20 females) were reported harvested in the Southeast Region during the report period. Six other mountain lion mortalities were documented, including 2 killed for being near livestock deprecations.

DAU 5-1 (GMUS 66A, 70, 71, 72, 73, 73A, 74, 75, 76, 77, 78)

MANAGEMENT DIRECTION

From 1991 through 1995 Southeast Region management followed direction from the 1991-1995 Mountain Lion Management Plan: maintain populations and reduce/stabilize the harvest rate, especially on the female component. Specific quantitative statewide objectives are to reduce and stabilize current harvest to within 25% of 250 on a 3-year running average, and to reduce the female component of the harvest to 25-35%. Since 1996 the Idaho Fish and Game Commission, responding to increased mountain lion sightings, increasing livestock deprecations, and deer hunter concerns, has set more liberal seasons in southeast Idaho.

BACKGROUND

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 2-4 animals. Population information is sparse; however, increased sightings, increased deprecations, and increased harvests all suggest that mountain lion populations have increased over recent historic levels. Populations of one prey species, the 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 yeas ago to 15 in the west and 10 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 initiated in 1998. Management is intended to maintain relatively higher harvest than in adjacent ‘control’ units with lower harvest levels.

Season Structure

General	9/15-3/31	66A, 72, 74, 75, 76, 77, 78	10-female quota
		70, 71, 73, 73A	15-female quota

HARVEST CHARACTERISTICS

Forty-one mountain lions comprised of 21 males and 20 females were reported harvested in the Southeast Region during the 2000-2001 season (Table 1). The 49% female harvest was above the 10-year region-wide average of 41% (Table 1). Slightly higher percentages of males are checked during years with female quotas than during years without, perhaps showing some selection in the harvest by hunters.

Units 73 and 73A accounted for 32% (13 of 41) of the mountain lions taken (Table 2). Most mountain lions taken in the report period (27 of 41) were taken in November or December, with 8 of the 20 females taken in December alone (Table 2). The western district quota of 15 females was not reached during the reporting period as only 9 females were taken, whereas the eastern district quota was reached (11 females harvested) in January 2001.

A tooth is pulled from each mountain lion taken and cement annuli is used to determine age. During the 1999-2000 hunting season, teeth were taken from 28 of the 37 mountain lions: 13 in group I (1-3 years), 14 in group II (4-7 years), and 1 in group III (8+ years). The largest percentage of mountain lions harvested during the report period was from the 4-7 year old group with 8 (29%) of the males and 6 (21%) of the females within that class (Table 3).

As with most years, most (35 of 41) mountain lions harvested in 2000-2001 were taken by hunters using hounds (Table 4). Only 2 of the mountain lions harvested were taken with the use

of paid guides (Table 4). Six other nonhunting mortalities were recorded. Two kittens were killed by dogs during the season. Two mountain lions were taken by Wildlife Services because of depredations and two were taken illegally.

CLIMATIC CONDITIONS

Presence or absence of snow for tracking can have a significant effect on mountain lion harvest in some areas. Lower snow depths can permit access to more areas that can be searched for tracks. Conversely, adequate snow levels make tracking more efficient.

Snow pack measurements taken during 2000-2001 were 50-60% of normal for the 30-year average in both the Snake River (northern portion of the region) and Great Basin (southern portion) watersheds.

DEPREDATIONS

The Wildlife Services branch of USDA Animal and Plant Health Inspection Service continues to respond to mountain lion depredation issues in concert with the Department. Two mountain lions were killed by Wildlife Services for depredations during the reporting period.

MANAGEMENT IMPLICATIONS

During the period 1981 through 1990, the annual harvest of mountain lions in the region averaged 6.5, ranging between 0 and 17. 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. The 1991 through 1997 average annual harvest was 18.7. A record high harvest of 22 mountain lions occurred in 1996. Concern about impacts to deer herds from predation prompted a conservative increase in the quota the following year and harvest doubled to 44. Following removal of the quota in 1998-1999, harvest increased to 94. Reinstitution of the quota during the reporting period coincided with a nearly two-thirds reduction in overall harvest.

Male/female ratios in the harvest have generally ranged between 2:1 and 1:1. The 49% female harvest during the reporting period is higher than 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.

Table 1. Mountain lion harvest in DAU 5-1, 1990-2000.

Year	Males	Females	Total	Percent Female
1990	9	8	17	47
1991	8	5 ^a	13	38
1992	5	4	9	44
1993	7	5 ^a	12	42
1994	12	4	16	25
1995	9	6 ^a	15	40
1996	13	9 ^a	22	41
1997	29	15 ^a	44	34
1998	51	43	94	46
1999	21	16	37	43
2000	21	20	41	49
1990-2000 Mean	16.8	12.3	29.1	40.8

^a The harvest quota was exceeded when multiple females from the same group of units were reported on the same day.

Table 2. Mountain lion harvest by sex and unit in the Southeast Region during 2000-2001 season.

Unit	Sex	Month							Total
		Sept	Oct	Nov	Dec	Jan	Feb	Mar	
66A	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0
70	M	0	0	0	1	0	0	0	1
	F	0	0	0	0	1	0	0	1
71	M	0	0	0	0	0	0	0	0
	F	0	1	0	1	1	0	0	3
72	M	0	0	0	1	1	0	0	2
	F	0	0	0	2	0	0	0	2
73	M	0	0	1	1	2	0	1	5
	F	0	0	1	1	1	0	1	4
73A	M	0	0	2	0	1	0	0	3
	F	0	0	0	1	0	0	0	1
74	M	0	0	2	0	0	0	0	2
	F	0	0	0	2	0	0	0	2
75	M	0	0	2	1	1	0	0	4
	F	0	0	1	0	1	0	0	2
76	M	0	0	0	1	0	0	0	1
	F	0	0	1	1	0	0	0	2
77	M	0	0	2	0	1	0	0	3
	F	0	0	2	0	1	0	0	3
78	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0
Total	M	0	0	9	5	6	0	1	21
	F	0	1	5	8	5	0	1	20

Table 3. Mountain lion harvest by age and sex classes by unit in the Southeast Region during 2000-2001 season.

Unit	Sex	Age Class ^a		
		K-3 (%)	4-7 (%)	8+ (%)
66A	M	0	0	0
	F	0	0	0
70	M	0	1 (50)	1 (50)
	F	0	0	0
71	M	2 (67)	1 (33)	0
	F	0	1 (100)	0
72	M	0	0	0
	F	1 (50)	1 (50)	0
73	M	2 (50)	2 (50)	0
	F	0	1 (100)	0
73A	M	1 (50)	1 (50)	0
	F	2 (67)	1 (33)	0
74	M	1 (100)	0	0
	F	0	1 (100)	0
75	M	0	1 (100)	0
	F	0	0	0
76	M	1 (50)	1 (50)	0
	F	0	0	0
77	M	1 (50)	1 (50)	0
	F	0	1 (100)	0
78	M	1 (100)	0	0
	F	1 (100)	0	0
Total	M	9 (32)	8 (29)	1 (4)
	F	4 (14)	6 (21)	0 (0)

^a Age classes assigned from tooth cementum annuli.

Table 4. Mountain lion harvest per sex by weapon, guide status, and method in the Southeast Region during 2000-2001 season.

Method	Males	Females	Total
Weapon			
Rifle	10	7	17
Bow	2	2	4
Pistol	8	11	19
Other	1	0	1
Guided			
Yes	1	1	2
No	20	19	39
Method			
Incidental	1	5	6
Predator Call	0	0	0
Hounds	20	15	35

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Mountain Lion Surveys</u>
PROJECT:	<u>W-170-R-25</u>		<u>and Inventories</u>
SUBPROJECT:	<u>6</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>I</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>8</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2000 to June 30, 2001</u>		

MOUNTAIN LION – UPPER SNAKE REGION

ABSTRACT

Twenty-four mountain lions were reported harvested in the Upper Snake Region during the 2000-2001 season. Two additional mountain lions were taken accidentally by a bobcat trapper and another bobcat trapper found two young mountain lions in a cave. Harvest was determined from hunter reports as required by Fish and Game Commission regulation. No estimate of hunter effort or hunter participation in the dog training season is available. Officer field contacts have found only light dog training activity in Units 51, 58, and 59A and no known dog-training activity in Units 60, 60A, 61, 62, and 62A. Relatively mild wintering conditions resulted in dispersed wintering big game. The female mountain lion quota was exceeded in analysis area 6-3 (Units 64, 65, 66, 67, 69), but this was not determined before the season closed. The U.S. Department of Agriculture's Wildlife Services verified 3 reports of a mountain lion killing or injuring 4 calves and 1 sheep/lamb in 3 incidents in Butte County, and 3 unverified reports of mountain lions killing 18 calves and 6 sheep/lambs in 3 incidents in Clark, Madison, and Teton Counties. No mountain lions were taken as a result of Wildlife Services actions. The Department received no claims for livestock losses to mountain lions during 2000-2001.

DAU 6-1 (GMUS 58, 59, 59A)

MANAGEMENT DIRECTION

Management Objectives

1. Provide additional dog-training seasons during this planning period.
2. Implement some controlled hunts during this planning period.

BACKGROUND

Historical Information

These units have relatively few mountain lions and provide limited hunter and dog training opportunity. The hunting season had traditionally been September 15 through January 31; however, the 1996-1997 season was extended to March 31 to provide more hunter opportunity on perceived increased mountain lion numbers. In 2000 the opening date was changed to August 30 to provide archery deer and elk hunters the opportunity to take mountain lion incidental to deer and elk hunting. Occasional livestock depredation is reported. Problems are taken care of by USDA's Wildlife Services.

Season Structure

General either sex take season^{a,b} August 30, 2000-March 31, 2001

^a Either sex, except neither spotted mountain lion young nor female mountain lion accompanied by young may be taken.

^b These units will remain open until a total of four female mountain lions have been harvested or March 31, whichever occurs first.

Dog Training Season

A dog-training season shall open upon the closure of these units to harvest when a harvest quota is met. If opened, the training season in this group of units shall close March 31.

HARVEST CHARACTERISTICS

Sex Ratio

One male mountain lion and two female mountain lions were reported harvested from Area 6-1 during the 2000-2001 season (Table 1). Harvest from this area has been too light and variable to make meaningful sex ratio comparisons with previous years.

Age Structure

One of the female mountain lions that was in the K-3 years old category and the other two were in the 4-7 age category (Table 6).

Harvest Trend

Over the past five years, reported mountain lion harvest from Area 6-1 has ranged from 1 to 6 with an average of 2.8 (Table 1). The 2000-2001 harvest of 3 mountain lion is near average for

reported mountain lion harvest from this DAU over the last 5 years. Reported female mountain lion harvest has varied from 0 to 100% of the total harvest over the last 5 years.

Kill Distribution by Date

The male mountain lion was harvested in November and the two females were harvested in January (Table 5).

Incidental Kill

There was no other mountain lion kill reported from Area 6-1.

CLIMATIC CONDITIONS

Winter conditions were relatively mild resulting in big game remaining disbursed. Low snow accumulation during winter made locating mountain lion tracks difficult.

DEPREDATIONS

There were no mountain lion depredations reported during this reporting period.

MANAGEMENT IMPLICATIONS

There are relatively few mountain lions in Area 6-1 and mountain lion hunting activity remains light. The most hunter interest seems to occur after the female quota for more popular hunting units is reached, closing those units to hunting.

No data are collected on dog training seasons. However, local officers and residents feel dog training activity is light. This may be because of low mountain lion numbers or little dog owner/trainer interest.

Unit 59 was opened to hunting and dog training in 1994 because I-15 provides a better hunt area boundary than Medicine Lodge Creek. Mountain lion numbers in this unit are low and, therefore, provide only limited hunter and dog training opportunity.

There is no need for a controlled hunt in this area because harvest is light, ranging from 1 to 6 mountain lions per season.

DAU 6-2 (GMUS 50, 51)

MANAGEMENT DIRECTION

Management Objectives

1. Provide additional dog-training seasons during this planning period.

2. Implement some controlled hunts during this planning period.

BACKGROUND

Unit 50 supports a moderate number of mountain lions, while Unit 51 has a low mountain lion population. The season was extended from January 31 to March 31 in 1996-1997 to provide more hunter opportunity on perceived increased mountain lion numbers. In 2000 the opening date was changed to August 30 to provide archery deer and elk hunters the opportunity to take mountain lion incidental to deer and elk hunting. A female quota of 3 was implemented for the 1990-1991 season to discourage harvest of female mountain lions; this quota was increased to 4 in 1998, but reduced again to 3 in 1999 because of hunter concerns of overharvest. In 2000 the female quota was increased again to 4.

Season Structure

General Either Sex Take Season^{a,b} August 30, 2000-March 31, 2001

^a Either sex, except neither spotted mountain lion young nor female mountain lion accompanied by young may be taken.

^b The units will remain open until 4 female mountain lions have been harvested or March 31, whichever occurs first.

Dog training season

A dog-training season shall open upon the closure of this group of units to harvest where the harvest quota is met. If opened, the training season will close March 31.

HARVEST CHARACTERISTICS

Sex Ratio

Five male mountain lions were harvested in Area 6-2 during the 2000-2001 season (Table 2). The average female harvest over the last 5 years is 39%.

Age Structure

One mountain lion was in the K-3 age category, 2 were in the 4-7 years old category and 1 was in the 8+ years old category (Table 6).

Harvest Trend

Five mountain lions were reported harvested from Area 6-2 during the 2000-2001 season. Four of the mountain lions were reported taken from Unit 50 and 1 from Unit 51 (Table 5). This harvest was below the 5-year average harvest of 6.2 (Table 2).

Kill Distribution by Date

Two mountain lions were harvested in December, 1 in January, and 2 in March (Table 5).

Incidental Kill

There was no other mountain lion harvest reported from Area 6-2.

CLIMATIC CONDITIONS

Snow accumulation was light resulting in big game remaining relatively dispersed throughout the winter.

DEPREDATIONS

Wildlife Services verified 3 mountain lion-livestock conflicts from Butte County during 2000-2001. Two calves were killed in one case, 2 calves were injured in another case, and 1 sheep/lamb was killed in the third case. No mountain lions were taken as a result of Wildlife Services actions and the Department received no claims for livestock losses to mountain lions.

MANAGEMENT IMPLICATIONS

The take season remained open until March 31, 2001. Unit 50 has the best mountain lion population in the Upper Snake Region and has provided the most consistent hunter opportunity. This is probably because it is the closest unit in the Region to the core of Idaho's mountain lion habitat. Unit 51 has similar habitat and big game numbers as Unit 50, but it is farther from core mountain lion habitat. Consequently Unit 51 appears to have fewer mountain lions than Unit 50.

Management direction for Area 6-2 continues to be directed toward minimizing harvest of female mountain lions.

DAU 6-3 (GMUS 64, 65, 66, 67, 69)

MANAGEMENT DIRECTION

Management Objectives

1. Provide additional dog training seasons during this planning period.
2. Implement some controlled hunts during this planning period.

BACKGROUND

Historical Information

Historically there were relatively few mountain lions in these units. Suitable mountain lion habitat is relatively limited in these units with isolated areas separated by agricultural lands. Historically there were very few depredation or landowner complaints on mountain lions in these units. However, after implementing a dog training season in 1991, depredation and landowner complaints occurred annually. Therefore, the Department approved a mountain lion take season for these units in 1994. Area 6-3 was expanded to include Unit 66 and that part of Unit 69 within the Antelope and Garden Creek drainages and the female quota increased from 2 to 3 in 1996-1997. The female quota was increased to 4 for 1997-1998, and increased again to 5 for the 1998-1999 and 1999-2000 seasons. All of Unit 69 was included in the 2000-2001 season and the female quota increased to 7.

Season Structure

General either sex take season^a August 30, 2000-December 31, 2000

^a These units will remain open until a total of 7 female mountain lions have been harvested in this group of units or December 31, whichever occurs first.

Dog Training Season None

HARVEST CHARACTERISTICS

Sex Ratio

Eight male and 8 female mountain lions were reported taken from Area 6-3 during the 2000 season (Table 3). This exceeded the female quota by 1 mountain lion, but the Department did not receive the female harvest report until after the season had closed.

Age Structure

Five of the mountain lions harvested were in the K-3 years old category, 7 were in the 4-7 years old category, and 1 was in the over 8 years old category (Table 6).

Kill Distribution by Date

Two mountain lions were harvested in October, 1 in November, and 13 in December (Table 5).

Incidental Kill

A female mountain lion and one of her kittens were taken incidentally in a bobcat snare in the Blackfoot River drainage of Unit 69 in February 2001

CLIMATIC CONDITIONS

Snow accumulation was light and winter conditions remained relatively mild throughout the season. Hunter access was not hampered by snow depth. Big game winter mortality was light.

DEPREDATIONS

Wildlife Services received 2 unverified reports of mountain lions killing 1 sheep/lamb in Teton County and 18 calves in Madison County during the 2000-2001 reporting period. No mountain lions were taken as a result of Wildlife Services actions and the Department received no claims for livestock losses from mountain lions.

MANAGEMENT IMPLICATIONS

Area 6-3 is a relatively small area of mountain lion habitat that is isolated from other mountain lion habitat by agricultural and urban development. Motorized access is abundant, and snow accumulation does not restrict access most winters. It also lies close to several relatively large urban areas in which reside several houndsmen. These factors make the area vulnerable to overharvest of the mountain lion population. The female quota directs harvest toward male mountain lions, but does not prevent overharvest.

Eight male mountain lions and 8 female mountain lions were reported taken from this population during the 2000 season. In addition to the legal harvest, a bobcat trapper in Unit 69 took a female mountain lion and one of her kittens incidentally. It is unknown whether this level of harvest can be sustained. Therefore, harvest and houndsmen activity in Area 6-3 should be monitored closely to see how the mountain lion population and distribution responds. If harvest drops or houndsmen complain of a lack of mountain lion, or the nonhunting public complains, it may be appropriate to restrict the take season. This could be done by implementing a controlled hunt as provided for in the mountain lion plan.

DAU 6-4 (GMUS 60, 60A, 61, 62, 62A)

MANAGEMENT DIRECTION

There is very little mountain lion habitat in these units and mountain lion sightings are rare. No open mountain lion season is anticipated in these management units during this planning period.

BACKGROUND

Occasionally, mountain lions travel through these units, but there does not appear to be an established population. Big game in these units use different winter and summer ranges, making it difficult for a mountain lion population to establish. A dog-training season was established in these units in 1996-1997 to provide hound-hunting opportunity and collect information from hound hunters on mountain lion use of the area. A mountain lion take season with a female

quota of 5 was established in 2000 because of a perceived mountain lion population in this area by some hunters.

Season Structure

General take season^{a,b}

August 30, 2000-December 31, 2000

^a Either sex, except neither spotted mountain lion young nor female mountain lion accompanied by young may be taken.

^b The units will remain open until 5 female mountain lions have been harvested or December 31, whichever occurs first.

Dog training season

A dog-training season shall open upon the closure of this group of units to harvest where the harvest quota is met. If opened, the training season will close December 31.

Season Participation

No mountain lion were reported harvested from area 6-4 during the 2000-2001 season (Table 4). No data are collected on dog training season participation. However, Department personnel are unaware of any mountain lion hound hunter activity during the season.

DEPREDATIONS

Wildlife Services received 1 unverified report of a mountain lion killing 5 sheep/lambs in the Clark County area of Unit 61 during 2000-2001 reporting period. No mountain lions were taken as a result of Wildlife Services actions and the Department received no claims for livestock lost to mountain lion predation.

MANAGEMENT IMPLICATIONS

The mountain lion plan provides for no mountain lion hunting or dog training in these units. There does not appear to be an established mountain lion population in this area, although transient mountain lions occasionally migrate through and may temporally stay in the area for a short time. Big game are migratory in this area using different winter and summer ranges, making it difficult for a mountain lion population to establish. Snow depths usually prevent dog training activity after November 1.

OTHER UNITS

A male and female mountain lion were reported found by a bobcat trapper in a cave in Unit 63A in February 2001. The trapper sold the untagged hides to another person who brought them to the Regional Office for tagging. Both hides were in good enough condition for tanning. The mountain lions were not spotted, but were thought to be less than a year old. Cause of mortality was not known.

Table 1. Mountain lion harvest in DAU 6-1, 1996-2000.

Year	Males	Females	Total	Percent Female
1996	1	1	2	50
1997	6	0	6	0
1998	0	1	1	100
1999	2	0	2	0
2000	1	2	3	67
1996-2000 Average	2.0	0.8	2.8	29

Table 2. Mountain lion harvest in DAU 6-2, 1996-2000.

Year	Males	Females	Total	Percent Female
1996	5	3	8	38
1997	3	3	6	50
1998	1	4	5	80
1999	5	2	7	29
2000	5	0	5	0
1996-2000 Average	3.8	2.4	6.2	39

Table 3. Mountain lion harvest in DAU 6-3, 1996-2000.

Year	Males	Females	Total	Percent Female
1996	2	2	4	50
1997	7	3	10	43
1998	9	0	9	0
1999	7	2	9	22
2000	8	8	16	50
1996-2000 Average	5.0	3.0	9.6	31

Table 4. Mountain lion harvest in DAU 6-4, 2000.

Year	Males	Females	Total	Percent Female
2000	0	0	0	--
2000 Average	0	0	0	--

Table 5. Mountain lion harvest by sex and unit in the Upper Snake Region during 2000-2001 season.

Unit	Sex	Month								Total
		Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	
50	M	0	0	0	0	2	0	0	2	4
	F	0	0	0	0	0	0	0	0	0
51	M	0	0	0	0	0	1	0	0	1
	F	0	0	0	0	0	0	0	0	0
58	M	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	1	0	0	1
59	M	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	1	0	0	1
59A	M	0	0	0	1	0	0	0	0	1
	F	0	0	0	0	0	0	0	0	0
60	M	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0	0
60A	M	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0	0
61	M	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0	0
62	M	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0	0
62A	M	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0	0
64	M	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	1	0	0	0	1
65	M	0	0	0	0	0	0	0	0	0
	F	0	0	0	0	2	0	0	0	2
66	M	0	0	0	1	0	0	0	0	1
	F	0	0	1	0	2	0	0	0	3
67	M	0	0	0	0	4	0	0	0	4
	F	0	0	0	0	1	0	0	0	1
69	M	0	0	0	0	3	0	0	0	3
	F	0	0	1	0	0	0	0	0	1
Total	M	0	0	0	2	9	1	0	2	14
	F	0	0	2	0	6	2	0	0	10

Table 6. Mountain lion harvest by age and sex classes by unit in the Upper Snake Region during 2000-2001 season.

Unit	Sex	Age Class		
		K-3 (%)	4-7 (%)	8+ (%)
50	M	0	2	1
	F	0	0	0
51	M	1	0	0
	F	0	0	0
58	M	0	0	0
	F	0	1	0
59	M	0	0	0
	F	1	0	0
59A	M	0	1	0
	F	0	0	0
60	M	0	0	0
	F	0	0	0
60A	M	0	0	0
	F	0	0	0
61	M	0	0	0
	F	0	0	0
62	M	0	0	0
	F	0	0	0
62A	M	0	0	0
	F	0	0	0
64	M	0	0	0
	F	0	1	0
65	M	0	0	0
	F	2	0	0
66	M	0	0	1
	F	0	2	0
67	M	1	3	0
	F	0	0	0
69	M	1	1	0
	F	1	0	0
Total	M	3 (15)	7 (35)	2 (10)
	F	3 (20)	4 (20)	0

Table 7. Mountain lion harvest by method in the Upper Snake Region during 2000-2001 season.

Method	Males	Females	Total
Weapon			
Rifle	4	2	6
Bow	3	2	5
Mzldr.	0	0	0
Pistol	5	6	11
Other	0	0	0
Guided			
Yes	0	1	1
No	12	9	21
Method			
Still	0	1	1
Bait	0	0	0
Incid.	1	2	3
Pred. Call	0	0	0
Hounds	11	7	18
Other	0	0	0

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Mountain Lion Surveys</u>
PROJECT:	<u>W-170-R-25</u>		<u>and Inventories</u>
SUBPROJECT:	<u>7</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>I</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>8</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2000 to June 30, 2001</u>		

MOUNTAIN LION – SALMON REGION

ABSTRACT

Hunters have taken 327 mountain lions (212 males, 115 females) in Salmon Region in the past 5 seasons. Forty-three mountain lions (40% females) were harvested in 2000-2001. Age data for mountain lions harvested during the 2000-01 season were not available for this report.

Over the 3 seasons from 1997-1999, December and January accounted for about 75% of harvest in accessible areas (DAUs 7-1 and 7-2). About 40-50% occurred during December and 25-35% in January. In contrast most backcountry harvest (DAU 3-3) occurred during January; only about 10% occurred during September through December. During the 2000 season, 62% of harvest occurred in December and January in DAUs 7-1 and 7-2 (43% in December and 19% in January). In DAU 3-3 50% of harvest took place from September to December and only 17% occurred in January. In Salmon Region, 86% of mountain lions were taken using hounds. Only 7% of harvest occurred as incidental take during deer and elk seasons.

Average annual mountain lion harvest from Salmon Region has been increasing, more than doubling from the 1970s through the 1990s. Increased harvest probably reflects mountain lion population increases as a result of prey (primarily elk) population increases. In contrast, harvest during the 2000 season dropped by 33 lions from 1999. This probably had more to do with poor tracking conditions than an actual change in population. There was little snow during the 2000-2001 winter, making tracking difficult. At the same time, age composition of harvested animals indicates more older age mountain lions are available suggesting mountain lion populations are more than keeping pace with increased harvest. Wolves reintroduced into Salmon Region during 1995 and 1996 could eventually have some impact on mountain lion populations, particularly in localized areas.

DAU 3-3 (GMU 27)

MANAGEMENT DIRECTION

Follow statewide management direction in the 1991-1995 Mountain Lion Species Management Plan, which is to maintain populations, reduce and stabilize harvest, and reduce female component to 25-35% of the harvest.

BACKGROUND

Historical Information

Unit 27 encompasses most drainages of the Middle Fork of the Salmon River. Virtually all of the unit is part of the Frank Church River of No Return Wilderness. Road access is limited and terrain is generally quite rugged. Human use of the area is primarily recreational, including summer river rafting and fall/winter hunting. Elevations range from 3,000 feet to 10,000 feet and include very rugged river breaks and cliffs, sagebrush grasslands, mixed conifer forests, and subalpine habitats.

Unit 27 supports large mountain lion populations that are usually lightly harvested because of limited access and difficult terrain. However, outfitters have increased efforts in backcountry units in recent years. Both deer and elk are abundant prey species with bighorn sheep and mountain goats locally common. During January 1995 and January 1996, wolves were reintroduced into DAU 3-3. Packs are now established within the DAU.

Depredation problems are insignificant in Unit 27.

Season Structure

Unit 27 has traditionally had a long (September through March) mountain lion take season but no dog-training season. The August 30, 2000 through March 31, 2001 season included a total season length of 214 days. Dogs may be used when a firearm season for deer or elk is not open (after November 18.) Neither spotted young nor female mountain lions accompanied by young may be taken.

HARVEST CHARACTERISTICS

Sex Ratio

Over the long term, females comprised 38% of the 1995-2000 mountain lion check (Table 1).

Age Structure

More subadult mountain lions than usual (n=5) were harvested during 1999-2000 (Table 4). Over the long term, about 5% of females and 57% of males are in the oldest age class (age 8+).

Subadults comprise about 2% of male harvest and 19% of female harvest. Tooth drop measurements were discontinued at the end of the reporting period. Age determinations (based on cementum analysis) for mountain lions harvested in 2000-2001 are not yet available.

Harvest Trend

The 2000-2001 harvest of 6 mountain lions was less than half of 1997-1998 and 1998-1999, which were the highest in at least 25 years. Average harvest for Unit 27 has increased from 4-5 mountain lions per year in the 1970s and 1980s to 8 mountain lions per year in the early 1990s and 13 mountain lions per year by 2000. Unit 27 mountain lion harvest can be strongly influenced by activities of a handful of outfitters.

Kill Distribution By Date

In past years, most of Unit 27 harvest (about two-thirds over the long term) occurred during January and <10% of harvest occurred during September 15-November 18 deer and elk season. Only 1 animal was harvested during January in 2000-2001 and 3 mountain lions were killed between September and December (Table 5). Two of 6 animals were taken in February and March, similar to past years.

Incidental Kill

Three of 6 mountain lions harvested in Unit 27 were taken with the assistance of hounds; 2 were taken incidental to fall deer and elk hunting and 1 was taken incidentally to other activities in March. These proportions are in sharp contrast to the rest of the region (Table 6).

CLIMATIC CONDITIONS

Summer and fall 2000 were drier than usual, producing poor forage quality and ungulate body condition entering the 2000-2001 winter. Dry conditions persisted throughout the entire winter period. The few snow showers that did occur lasted briefly and tracking snow was scarce. These conditions probably inhibited mountain lion hunting somewhat.

DEPREDATIONS

No mountain lion depredations were reported in 2000-2001.

MANAGEMENT IMPLICATIONS

Mountain lion harvest appears to be on an increasing trend over the long term. The 1997-1998 and 1998-1999 harvests of 19 animals were the highest in at least 25 years, and the 1999-2000 harvest was comparable. However, the 2000-2001 harvest was <50% of the 3 previous years. The long-term increase in harvest probably reflects mountain lion population increases as a result of prey (primarily elk) population increases, but may also reflect increased effort on the part of some outfitters. Conversely, the decrease in harvest in 2000-2001 may reflect a decrease in

effort by outfitters because of poor snow conditions. Sex and age composition of Unit 27 harvest suggests a light harvest rate; older animals and males represent the majority of the harvest. Percent females in the harvest for Unit 27 is currently just above the goal range of 25-35%. Over the long term, newly reintroduced wolves could have some impact on mountain lion populations, at least on a local level.

DAU 7-1 (GMUS 21, 21A, 28, 36, 36B)

MANAGEMENT DIRECTION

Follow statewide management direction in the 1991-1995 Mountain Lion Species Management Plan, which is to maintain populations, reduce and stabilize harvest, and reduce female component to 25-35% of the harvest.

BACKGROUND

Historical Information

Area 7-1 is comprised primarily of the drainages to the west of the upper Salmon River. Elevations vary from 3,000 feet to 11,000 feet and include sagebrush grasslands, river breaks, mixed conifer forests, and subalpine habitats.

Area 7-1 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. Management Area 7-1 mountain lion populations are partly sustained by immigration from adjacent, less-hunted wilderness populations (DAU 3-3). "Joint use" outfitter areas in Units 21, 21A, 28, 29, and 30 led to hunter congestion and harvest problems and therefore were eliminated in 1991. The quota on female harvest in Unit 28 was cumbersome to administer and unnecessary, and was therefore eliminated during 1994-1995. During winters of 1994-1995 and 1995-1996, wolves were reintroduced in the adjoining DAU (3-3). Some of these animals have formed packs residing within DAU 7-1. Depredation problems are not a major concern in Area 7-1.

Season Structure

During 1996-1997 general mountain lion season in Area 7-1 was extended by 15 days from January 31 to February 15. During 1999-2000 the season was extended by another 61 days (August 30 to March 31) because of an apparent continued increase in mountain lion populations. With an additional 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 2000-2001. 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 Area 7-1 units.

HARVEST CHARACTERISTICS

Sex Ratio

During 2000-2001, 41% of mountain lions harvested were females (Table 2), similar to the 1995-2000 average of 38% (n=215).

Age Structure

Two subadult mountain lions (6% of total harvest) and 8 old mountain lions (24% of the total) were harvested during 1999-2000 (Table 4). Over the long term, harvest age structure has been stable to increasing, with approximately one-fourth of female harvest and <10% of male harvest classified as subadults. Approximately 25% of females and 40% of males taken are old animals (age 8+).

Harvest Trend

Harvest decreased slightly from 34 to 29 in 2000-2001. Average harvest for these units increased from 11.9 mountain lions per year in the 1970s to 18.3 during the 1980s, 27.4 mountain lions per year in the early 1990s, and 36 mountain lions per year in the last 5 years.

Kill Distribution By Date

In past years, approximately three-fourths of Area 7-1 mountain lion harvest occurred during December and January, 10% occurred from September through November, and about 10% in the first half of February. In 2000-2001, 62% of harvest occurred in December and January, 8% between September and November, and 30% in February and March.

Incidental Kill

Ninety-three percent of mountain lions harvested in Area 7-1 during 2000-2001 were taken with the assistance of hounds (Table 6); 2 (7%) were taken by other methods.

CLIMATIC CONDITIONS

Summer and fall 2000 were drier than usual, producing poor forage quality and ungulate body condition entering the 2000-2001 winter. Dry conditions persisted throughout the entire winter period. The few snow showers that did occur lasted briefly and tracking snow was scarce. These conditions probably inhibited mountain lion hunting somewhat.

DEPREDATIONS

No mountain lion depredations were reported in 2000-2001.

MANAGEMENT IMPLICATIONS

Mountain lion harvest in Area 7-1 has been on an increasing trend since the mandatory check was initiated in 1973. Increased harvest probably reflects mountain lion population increases as a result of prey (primarily elk) population increases. Sex and age composition of Area 7-1 harvest suggest harvest rate has not increased because older animals and males represent a stable to increasing proportion of the harvest. Percent females in the harvest is currently slightly above the goal range of 25-35%. Over the long term, newly reintroduced wolves could have some impact on mountain lion populations, at least on a local level.

DAU 7-2 (GMUS 29, 30, 30A, 36A, 37, 37A)

MANAGEMENT DIRECTION

Follow statewide management direction in the 1991-1995 Mountain Lion Species Management Plan, which is to maintain populations, reduce and stabilize harvest, and reduce the female component to 25-35% of the harvest.

BACKGROUND

Historical Information

Area 7-2 is comprised primarily of drainages to the east of the upper Salmon River. Elevations vary from 4,000 feet to 12,000 feet and include high desert communities, mixed conifer forests, and subalpine habitats. This DAU receives much less precipitation, and therefore has less forest, than other Salmon Region DAUs.

Area 7-2 supports low to moderate mountain lion densities 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 Area 7-2.

Season Structure

During 1996-1997 general mountain lion season in Area 7-2 was extended by 15 days from January 31 to February 15. During 1999-2000 the season was extended by another 61 days (August 30 to March 31) because of an apparent continued increase in mountain lion populations. With an additional 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 2000-2001. Dogs may be used when a firearm seasons for deer or elk are not open. Neither spotted young nor female mountain lions accompanied by young may be taken. There were no dog-training seasons in Area 7-2 units.

HARVEST CHARACTERISTICS

Sex Ratio

During 2000-2001, 6 of 12 mountain lions harvested were females (Table 3). Over the longer term, females comprised 29% of the harvest from 1995 to 2000 (n = 91).

Age Structure

Four subadult mountain lions (16% of the harvest) were taken in area 7-2 during 1999-2000 (Table 4). Nine mountain lions (36% of the harvest) were in the old age category (age 8+). Over the past 5 years, the female harvest has averaged 29% old animals and the male harvest has been 43% old animals. During the past 2 seasons, there appears to have been a decline in old age animals in the harvest, a trend that will bear watching carefully. Age data from the 2000-2001 season is not yet available.

Harvest Trend

The 1999-2000 harvest of 25 mountain lions was the highest in at least 25 years, almost double the harvest seen in recent years. Harvest during 2000-2001 was similar to the average from 1995 to 1998. Average harvest in these units has increased from about 5 mountain lions per year in the 1970s and 1980s to 9.8 mountain lions per year in the early 1990s and 15 mountain lions per year since 1995.

Kill Distribution By Date

In past years, approximately three-fourths of Area 7-1 mountain lion harvest occurred during December and January, 10% occurred from September through November, and approximately 10% in the first half of February. In 2000-2001, 62% of harvest occurred in December and January, 8% between September and November, and 30% in February and March.

Incidental Kill

Eleven of 12 mountain lions harvested in DAU 7-2 during 2000-2001 were taken with the assistance of hounds (Table 6). One mountain lion was taken by still hunting.

CLIMATIC CONDITIONS

Summer and fall 2000 were drier than usual, producing poor forage quality and ungulate body condition entering the 2000-2001 winter. Dry conditions persisted throughout the entire winter period. The few snow showers that did occur lasted briefly and tracking snow was scarce. These conditions probably inhibited mountain lion hunting somewhat.

DEPREDATIONS

No mountain lion depredations were reported in 2000-2001.

MANAGEMENT IMPLICATIONS

Mountain lion harvest in Area 7-2 has been on an increasing trend. Increased harvest probably reflects mountain lion population increases as a result of prey (primarily elk) population increases. Sex and age composition of animals harvested in Area 7-2 suggest that harvest rate is still acceptable, although proportion of old mountain lions in the harvest may be declining. Percent females in the harvest for Area 7-2 is currently within the goal range of 25-35%.

Table 1. Mountain lion harvest in DAU 3-3, 1995-2000.

Year	Males	Females	Total	% Females
1995	5	1	6	17
1996	6	6	12	50
1997	13	6	19	32
1998	12	7	19	37
1999	10	7	17	41
2000	3	3	6	50
Average	8	5	13	38

Table 2. Mountain lion harvest in DAU 7-1, 1995-2000.

Year	Males	Females	Total	% Females
1995	27	11	38	29
1996	28	7	35	20
1997	19	19	38	50
1998	24	17	41	41
1999	19	15	34	44
2000	17	12	29	41
Average	22	14	36	38

Table 3. Mountain lion harvest in DAU 7-2, 1995-2000.

Year	Males	Females	Total	% Females
1995	10	3	13	23
1996	11	2	13	15
1997	10	4	14	29
1998	9	5	14	36
1999	20	5	25	20
2000	6	6	12	50
Average	11	4	15	29

Table 4. Mountain lion harvest by age and sex classes in the Salmon Region during 1999-2000 season.

Unit	Sex	Age Class		
		K-3 (%)	4-7 (%)	8+ (%)
21	M	0	4	2
	F	0	1	0
21A	M	0	1	0
	F	0	2	1
27	M	3	4	3
	F	2	1	4
28	M	0	8	1
	F	1	5	2
29	M	0	2	1
	F	0	0	0
30	M	0	3	0
	F	1	0	0
30A	M	0	2	3
	F	1	0	0
36	M	0	1	0
	F	0	0	0
36A	M	0	2	3
	F	1	1	0
36B	M	0	1	0
	F	1	0	2
37	M	1	0	0
	F	0	0	0
37A	M	0	2	1
	F	0	0	1
Total	M	4 (8)	30 (61)	14 (29)
	F	7 (27)	10 (38)	10 (37)

Table 5. Mountain lion harvest by sex and unit in the Salmon Region during 2000-2001 season.

Unit	Sex	Month							Total
		Sept	Oct	Nov	Dec	Jan	Feb	Mar	
21	M	0	0	1	2	1	0	0	4
	F	0	0	0	1	0	0	0	1
21A	M	0	0	0	1	0	0	0	1
	F	0	0	0	0	0	0	0	0
27	M	1	1	0	0	0	0	1	3
	F	0	0	0	1	1	1	0	3
28	M	0	0	0	5	1	0	0	6
	F	0	0	2	0	2	1	0	5
29	M	0	0	0	0	0	1	0	1
	F	0	0	0	0	0	0	0	0
30	M	0	0	0	0	0	1	0	1
	F	0	0	0	1	0	0	0	1
30A	M	0	0	0	0	1	0	0	1
	F	0	0	0	0	0	0	0	0
36	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	1	1	2
36A	M	0	0	0	0	0	1	0	1
	F	0	0	0	1	1	1	0	3
36B	M	0	0	0	4	0	2	0	6
	F	0	0	0	0	0	1	1	2
37	M	0	0	0	1	1	0	0	2
	F	0	0	0	0	0	0	0	0
37A	M	0	0	0	0	0	0	0	0
	F	0	0	0	0	0	0	0	0
Total	M	1	1	1	13	4	5	1	26
	F	0	0	2	4	4	5	2	17

Table 6. Mountain lion harvest by method in the Salmon Region during 2000-2001 season.

Method	Males	Females	Total
Weapon			
Rifle	14	9	23
Bow	5	3	8
Muzzleloader	0	0	0
Pistol	6	4	10
Other	1	1	2
Guided			
Yes	16	8	24
No	10	9	19
Method			
Still	1	1	2
Bait	0	0	0
Incidental	3	0	3
Predator Call	0	0	0
Hounds	22	15	37
Other	0	1	1

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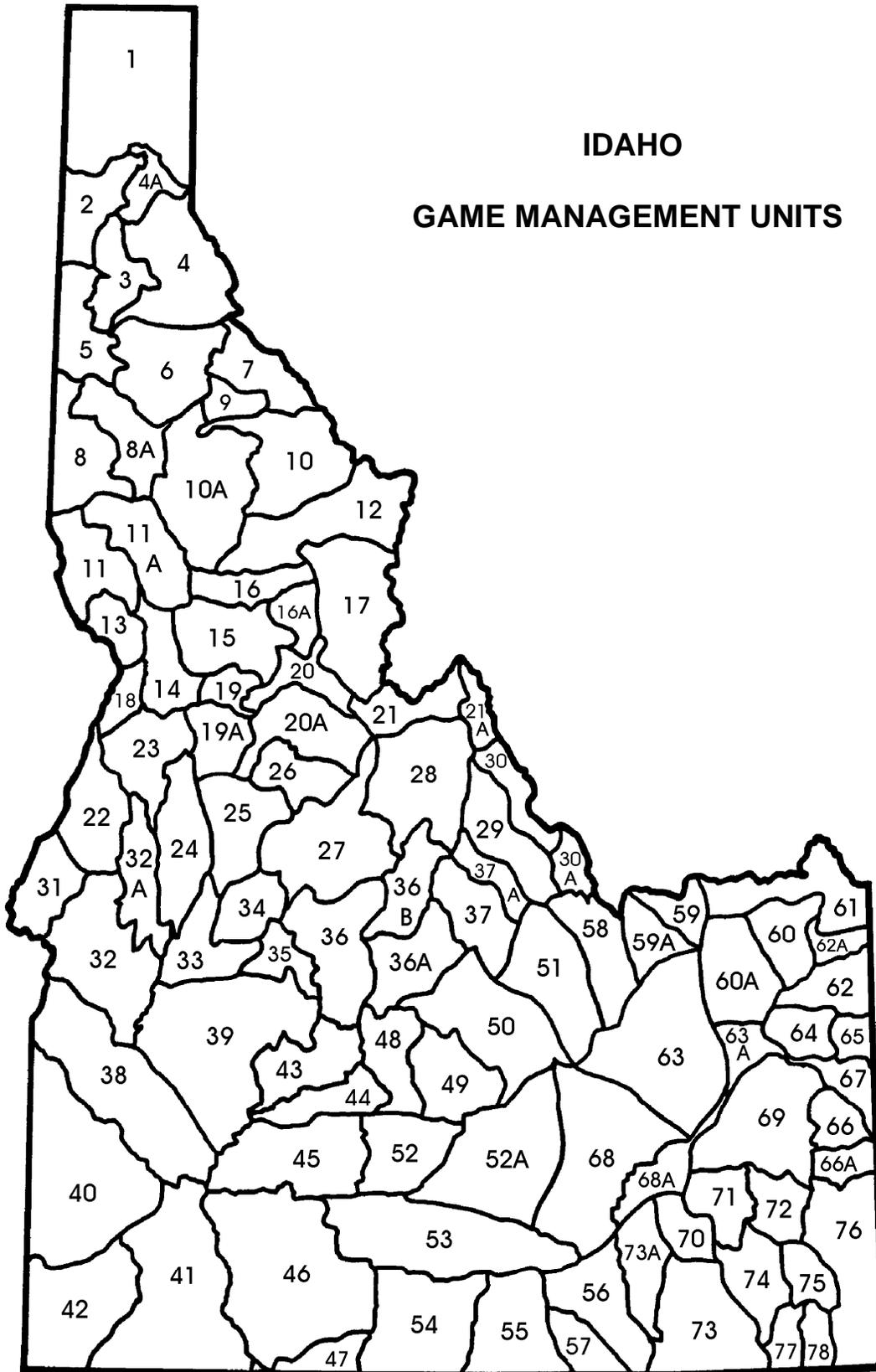
Approved by: IDAHO DEPARTMENT OF FISH AND GAME

Wayne Melquist
Wayne Melquist
Federal Aid Coordinator

Tom Parker
Tom Parker, Acting Chief
Bureau of Wildlife

IDAHO

GAME MANAGEMENT UNITS



FEDERAL AID IN WILDLIFE RESTORATION

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

