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Steven M. Huffaker, Director

Project W-170-R-28

Progress Report



MOOSE

Study I, Job 6

July 1, 2003 to June 30, 2004

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**PROGRESS REPORT
SURVEYS AND INVENTORY**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Moose Surveys and Inventories</u>
PROJECT:	<u>W-170-R-28</u>		
SUBPROJECT:	<u>1-7</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>1</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>5</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2003 to June 30, 2004</u>		

STATEWIDE

Abstract

The Idaho Department of Fish and Game offered 94 controlled hunts with 1,004 permits for male moose in 2003 and an additional 30 controlled hunts with 231 permits for female moose (Appendix A).

There were 4,980 first-choice applicants for the 1,004 permits for antlered moose offered in 2003, as compared with 4,817 first-choice applications for 1,003 permits for antlered moose in 2002. The overall success rate for applicants in 2003 was 20% (as compared with 21% in 2002 and 20% in 2001). Only 6% (306) of the applications were received from non-residents (297 in 2002). Ten permits were filled as second-choice hunts, and 12 permits were unfilled in the drawing and were sold over the counter on a first-come basis. Non-resident hunters drew 5% (55) of the permits offered for antlered moose.

For antlerless moose, there were 163 first-choice applications for the 231 permits available, only one of which was received from a non-resident hunter. In 2002, there were 118 applications for 147 antlerless moose permits. Twenty-nine antlerless moose permits were filled as second-choice hunts in 2003, and 65 permits were unfilled in the drawing and were sold over-the-counter afterwards. Non-residents drew two permits for antlerless moose in 2003 (none in 2002).

A total of 764 antlered moose were harvested in 2003, for a 75% hunter success rate. The hunter success rate in 2002 was 76% (761 antlered moose harvested), and in 2001 was 79% (800 antlered moose harvested). Fifty-five non-resident hunters harvested 40 antlered moose (73% hunter success) in 2003.

There were 169 antlerless moose harvested in 2003, for a 73% harvest rate. In 2002, hunters harvested 98 antlerless moose, for a 67% harvest rate. Based on discussions among hunters, it appears that the lower harvest rate on cow moose reflects lack of interest by hunters rather than inability to locate legal moose. Only one non-resident hunter applied for an antlerless permit as a first-choice hunt; two permits for antlerless moose were issued to non-resident hunters in 2003 (one a second-choice hunt), but neither hunter harvested.

**PROGRESS REPORT
SURVEYS AND INVENTORY**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Moose Surveys and Inventories</u>
PROJECT:	<u>W-170-R-28</u>		
SUBPROJECT:	<u>1</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>I</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>6</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2003 to June 30, 2004</u>		

PANHANDLE REGION

Abstract

Permit levels in 2003 were increased from 2002. A new hunt with 15 antlerless permits was created in Hunt Area 1-1. In 2003, seven of 189 bulls harvested exceeded 50 inches in antler spread (4%) while in 2002, three of 156 bulls exceeded 50 inches (2%). Success rates averaged 81% from 1993-2002 and were 89% in 2003. The average greatest antler spread for bull moose ($n=185$) was 37.0 inches. There were 32 unregulated moose mortalities reported during 2003.

Units 1, 2, 3, 4, 6, 7, 9

Management Direction

1. Develop an index to moose population trends that does not rely solely on aerial surveys.
2. Place enforcement emphasis on known problem areas of illegal moose kills. Publicize moose poaching arrests and the statewide reward system (CAP) in the media.
3. Develop a program for warning deer and elk hunters that moose are in an area to reduce accidental kills of moose.
4. Continue to examine present controlled hunt boundaries to include areas not now open to hunting and to distribute moose hunters more evenly. Coordinate moose management and permit levels along the Idaho/Washington border with the Washington Department of Fish and Wildlife.
5. Continue collecting information on moose distribution and mortality from Department and other agency personnel and the hunting public.

Background

For many years it was believed that the Panhandle Region provided little suitable moose habitat and that populations would remain relatively low. Open areas and extensive riparian areas that

typify moose habitat are not widespread in the Region. Rather, moose often utilize closed canopy timber with interspersed shrub fields and creek bottoms. Presently these populations are steadily expanding where timber harvesting and fire have created early-seral shrub fields.

Historically, moose have been managed in Idaho for rapid population increases. Seasons have been set on a bulls-only, controlled-hunt basis with conservative permit levels and limited antlerless harvest. Currently, moose are also managed on a one-kill-in-a-lifetime basis.

Population Surveys

No surveys were conducted for moose during the study period.

Harvest

In the Panhandle Region, moose hunting is now authorized in Units 1, 2, 3, 4, 6, 7, and 9 with an 86-day season for bull moose and a 40-day season for antlerless moose (Table 1). Twelve controlled hunts were authorized in the Panhandle Region in 2003 with a total of 235 permits. One hundred eighty-nine permit holders completed the mandatory report stating that they were successful in bagging a moose for a success rate of 80% (Table 2). All units have shown an increase in permits over the past ten years, with Unit 1 having the largest number of permits (Table 3).

Controlled Hunt Odds

Most areas of Idaho have permits available for a variety of big game species. By forcing a choice between moose and other big game permits, the Department has been successful in substantially improving drawing odds across most of the state. In the Panhandle, the only big game species managed under a permit system is moose, making drawing odds poor for moose.

Interest in moose hunting in the Panhandle Region has been high since moose hunting began. The increase in moose permits offered since 2001 has been greater than the increase in applicants, resulting in an improvement in the odds of drawing a permit. In 2003, the combined odds of drawing a moose permit were one in eight, representing an improvement from previous years when drawing odds were in the mid-teens.

Other Mortalities

Enforcement records of moose illegal mortalities were added to the existing database of moose mortalities for prior years. During the past eight years, 30 to 64 moose mortalities have been detected each year, in addition to controlled hunt harvest (Table 4). The bulk of these were illegal kills with road-kills contributing significantly. During this reporting period, thirty-two moose mortalities were documented in the Panhandle Region in addition to controlled hunts, 20 of which were illegal kills. The Coeur d'Alene Indian Tribe regulates moose harvest on ceded lands under agreement with the State of Idaho. In coordination with state goals, the tribe planned to increase tribal harvest to ten bull moose on ceded lands starting in 2002. Final tribal harvest is

unknown at this time, but is estimated to be ten animals based on prior success rates. Tribal harvest remains a negligible impact to moose herd dynamics in the Panhandle.

Management Implications

Recent aerial surveys allowed permit numbers to be increased from 123 in 2000 to 235 for the 2003 season. The number of applicants remained approximately the same, so drawing odds improved substantially, with one in eight applicants drawing a permit. Success rates in 2003 (80%) was similar to an average of 81% in previous years (1993-2002). The effort required to harvest a moose was relatively unchanged from previous years. Seven of the 172 bulls checked were measured at 50 inches or greater maximum antler spread, which represents an increase from the previous year. Large bulls are still available, with 29 bulls over 45 inches in size, slightly higher than the 23 bulls reported in 2002.

This year's data reflects the third year of a more aggressive moose management program. During 2001, hunt areas were combined into larger hunts, and permit levels were increased substantially, including conservative cow moose hunts in Units 1 (2003) and 2. This system allowed much higher hunter participation (+79% compared to 2000) with an associated improvement in drawing odds (one permit per 14 applicants in 2000 vs. one permit per eight applicants in 2003). Our expectation was that mean bull age and bull moose density would decrease somewhat during the next few years as easily accessed areas were hunted more intensively than in the past. The increase in the number of large bulls (>50 inches spread) and the improvement in success rates from 2002 do not indicate that expected bull ages or densities have changed significantly at this time. We will continue to closely monitor population and harvest information for indications of changes to regional moose numbers.

Table 1. 2003 season structure for controlled moose hunts in the Panhandle Region.

Season		Open for	Hunt area	Number of permits
Dates	Length			
30 Aug-23 Nov	86 days	Antlered	1-1	60
			1-2	30
			1-3	25
			1-4	40
			2	20
			3	5
			4	10
			6	10
			7	10
			9	5
15 Oct-23 Nov	40 days	Antlerless	1-1	15
			2	5

Table 2. Summary of moose harvest and drawing odds in the Panhandle Region, 1981-present.

Year	No. of permits	Harvest			% Success	First-choice applicants	Drawing odds
		M	F	Total			
1981	11	7	0	7	64	701	1:63.7
1982	11	11	0	11	100	599	1:54.5
1983	15	14	0	14	93	712	1:47.5
1984	15	14	0	14	93	721	1:48.1
1985	28	21	0	21	75	907	1:32.4
1986	28	23	0	23	82	750	1:26.8
1987	28	24	0	24	86	653	1:23.3
1988	40	34	0	34	85	597	1:14.9
1989	40	35	0	35	88	725	1:18.1
1990	42	38	0	38	90	849	1:20.2
1991	51	45	0	45	88	1,024	1:20.1
1992	51	44	0	44	86	1,071	1:21.0
1993	83	69	0	69	83	1,361	1:16.4
1994	83	63	0	63	76	1,430	1:17.2
1995	100	84	0	84	84	1,529	1:15.3
1996	100	74	0	74	74	1,516	1:15.2
1997	103	85	0	85	83	1,837	1:17.8
1998	103	91	0	91	88	1,623	1:15.8
1999	123	100	0	100	81	2,001	1:16.3
2000	123	106	0	106	86	1,765	1:14.3
2001	220	176	5	181	82	1,799	1:8.2
2002	220	156	5	161	73	1,703	1:7.7
2003	235	189	17	206	88	1,858	1:7.9

^a Prior to 1996, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

Table 3. Summary of moose harvest and drawing odds by Game Management Unit in the Panhandle Region, 1994-present.

Unit	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds
			M	F				
1	1994	59	45	0	76	8.1	1,026	1:17.4
	1995	74	63	0	85	11.3	1,106	1:14.9
	1996	74	56	0	76	7.9	1,081	1:14.6
	1997	74	64	0	86	10.2	1,109	1:15.0
	1998	74	67	0	91	8.4	1,050	1:14.2
	1999	88	68	0	77	12.1	1,324	1:15.0
	2000	88	75	0	85	8.6	812	1:9.2
	2001	155	120	0	77	8.6	828	1:5.3
	2002	155	103	0	66	9.2	1,065	1:6.9
	2003	170	135	14	88	9.3	1,165	1:6.9
2	1994	4	3	0	75	2.3	120	1:30.0
	1995	5	5	0	100	4.8	116	1:23.2
	1996	5	5	0	100	5.0	129	1:25.8
	1997	10	9	0	90	9.0	230	1:23.0
	1998	10	10	0	100	14.0	225	1:22.5
	1999	10	10	0	100	9.6	298	1:29.8
	2000	10	10	0	100	6.4	162	1:16.2
	2001	25	20	5	100	7.1	211	1:8.4
	2002	25	20	5	100	4.4	205	1:8.2
	2003	25	20	4	96	8.2	208	1:8.3
3 & 4	1994	4	4	0	100	7.3	60	1:15
	1995	4	3	0	75	9.3	57	1:14.3
	1996	4	4	0	100	10.0	86	1:21.5
	1997	4	2	0	50	2.7	104	1:26.0
	1998	4	3	0	75	9.1	87	1:21.8
3	1999	5	4	0	80	4.3	29	1:5.8
	2000	5	4	0	80	11.3	27	1:5.4
	2001	5	5	0	100	7.2	35	1:7.0
	2002	5	5	0	100	10.8	49	1:9.8
	2003	5	4	0	80	8.5	44	1:8.8
4	1999	5	4	0	80	8.0	110	1:22.0
	2000	5	5	0	100	9.5	68	1:13.6
	2001	10	9	0	90	12.0	108	1:10.8
	2002	10	7	0	70	10.0	122	1:12.2
	2003	10	8	0	80	14.6	133	1:13.3
6	1994	4	4	0	100	2.5	101	1:25.3
	1995	5	5	0	100	10.3	156	1:31.2
	1996	5	5	0	100	7.8	124	1:24.8
	1997	5	4	0	80	7.0	175	1:35.0
	1998	5	5	0	100	12.0	181	1:36.2
	1999	5	5	0	100	11.8	154	1:38.0
	2000	5	4	0	80	8.3	121	1:24.2
	2001	10	7	0	70	11.0	132	1:13.2
	2002	10	8	0	80	4.1	147	1:14.7
	2003	10	10	0	100	9.2	185	1:18.5

Table 3. Continued.

Unit	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds
			M	F				
7	1994	8	4	0	50	14.5	87	1:10.9
	1995	8	4	0	50	11.9	68	1:8.5
	1996	8	2	0	25	2.5	46	1:5.8
	1997	5	4	0	80	9.0	60	1:12.0
	1998	5	1	0	20	17.7	48	1:9.6
	1999	5	4	0	80	6.5	56	1:11.2
	2000	5	3	0	60	8.8	34	1:6.8
	2001	10	10	0	100	11.8	108	1:10.8
	2002	10	10	0	100	9.4	57	1:5.7
	2003	10	9	0	90	5.0	83	1:8.3
9	1994	4	3	0	75	7.8	40	1:10.0
	1995	4	4	0	100	6.7	26	1:6.5
	1996	4	2	0	50	5.0	50	1:12.5
	1997	5	2	0	40	9.5	44	1:8.8
	1998	5	5	0	100	10.6	32	1:6.4
	1999	5	5	0	100	7.4	30	1:6.0
	2000	5	5	0	100	9.2	41	1:8.2
	2001	5	5	0	100	8.0	61	1:12.2
	2002	5	5	0	100	10.0	40	1:8.0
	2003	5	5	0	100	10.8	40	1:8.0

^a Prior to 1996, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

Table 4. Summary of all known moose mortalities in the Panhandle Region, excluding controlled hunts, 1992-present.

Year	Mortality agent						Total
	Indian harvest	Illegal kill	Road kill	Natural	Train kill	Other	
1992	0	7	3	1	2	-	13
1993	1	3	1	1	1	-	7
1994	2	14	7	1	1	5	30
1995	2	42	5	3	0	12	64
1996	4	16	16	3	10	5	54
1997	2	12	9	3	4	2	32
1998	2	35	5	4	0	2	48
1999	2	24	20	4	1	3	54
2000	2	16	15	1	3	1	38
2001	9	22	8	0	0	3	42
2002	10 ^a	15	20	0	0	0	45
2003	10 ^a	20	1	0	0	1	32

^a Estimate. The Coeur d'Alene Indian Tribe issued 10 bull moose permits on ceded lands during 2002 and 2003. Final tribal harvest not available for 2002 and 2003.

**PROGRESS REPORT
SURVEYS AND INVENTORY**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Moose Surveys and Inventories</u>
PROJECT:	<u>W-170-R-28</u>		
SUBPROJECT:	<u>2</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>1</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>6</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2003 to June 30, 2004</u>		

CLEARWATER REGION

Abstract

Based upon mandatory harvest report data, Clearwater Region hunters harvested 156 antlered moose in 40 antlered-only controlled hunts and an additional seven antlerless moose in two controlled hunts for antlerless moose in 2003. A total of 270 (262 antlered, eight antlerless) permits were available across the Region. A total harvest success rate of 60% for bull moose and 88% for antlerless moose was reported. The average greatest antler spread for bull moose ($n=153$) was 36.0 inches. Drawing odds ranged from 1:1.0 (Hunt Areas 10-6, 10A-3, 16A-2, 17-1, 17-2, 17-3, 17-4, 17-5, 20-2, 20-3, and 20-4) to 1:17.5 (Hunt Area 8A-1).

Units 8, 8A, 10, 10A, 12, 14, 15, 16, 17, 19, 20

**Controlled Hunt Areas 8, 8A, 10-1, 10-2, 10-3, 10-4, 10-5, 10-6,
10A-1, 10A-2, 10A-3, 10A-4, 10A-5, 12-1, 12-2, 12-3, 12-4, 12-5, 12-6,
14-1, 14-2, 15-1, 15-2, 15-3, 15-4, 16-1, 16-2, 16A-1, 16A-2,
17-1, 17-2, 17-3, 17-4, 17-5, 19-1, 19-2, 20-1, 20-2, 20-3, 20-4**

Management Direction

Moose populations will be allowed to increase in units where habitat conditions will support expansion. Legal harvest will continue primarily for antlered bulls. Antlerless moose hunting opportunity will be continued in those areas where population control measures are considered necessary. Moose harvest will be increased where feasible and decreased where necessary. Known mortalities will be documented and information on numbers and distribution will be obtained from big game mortality report forms and from the mandatory harvest checks.

Moose populations large enough to support hunts are found in all big game management units in the Region except Units 11, 11A, 13, and 18. Management units are divided into controlled hunts to disperse hunters and to direct harvest to specific areas.

Moose have been hunted with controlled hunts on a bulls-only and once-in-a-lifetime basis (if permittee is successful in harvesting a moose). However, in 1999, two antlerless moose hunts

(Hunt 8-2 with four permits and Hunt 8A-2 also with four permits) were initiated to increase hunting opportunity, address high cow moose densities, and minimize the potential for moose-automobile collisions in these areas. Hunting season lengths for moose in the Clearwater Region were 86 days for antlered moose hunts and 40 days for antlerless moose hunts (Table 1). Since 1986, persons applying for moose permits have been prohibited from applying for any other controlled hunt to improve drawing odds. Additionally, unsuccessful permittees must wait two years before applying for another controlled moose hunt. Permit levels are based on trends in antler spread of harvested moose and hunter success rates of recent permittees in the respective controlled hunts.

Some moose populations in the Clearwater Region are found in climax vegetative cover. Summer feeding habits tend to be nocturnal in open, wet meadows, while diurnal activity is limited to adjacent forested areas. Logging may reduce habitat for these populations. Winter habitat selection favors subalpine fir and pacific yew plant communities. Other populations are adapted to seral plant communities, except in winter. These populations seem to be expanding in areas where extensive habitat manipulation has resulted in seral brush fields. Winter ranges appear to be timbered areas where yew-wood thickets are several hundred years old. Creating openings in these timber stands through logging may impact moose by eliminating these yew-wood thickets. The effects of the recent expansion of wolves on moose populations within the Region is as yet undetermined.

Population Surveys

Moose in the Clearwater Region are usually counted incidental to elk surveys. Consequently, many moose are not counted because these surveys are seldom flown at elevations where moose normally winter and because moose tend to prefer dense subalpine fir plant associations for winter habitat where they are less conspicuous. As a result, no comparative population data have been collected on a regular basis on moose throughout the Region.

During aerial surveys for elk in Unit 17 in January 1995, four search units within the elk survey area and seven additional search units outside of the area were flown specifically for moose. These search units were located on the north side of the lower Selway River and were delineated to assess moose densities using the moose sightability model (Unsworth et al. 1994, Beta 3 version). Sixteen moose (five cows, nine bulls, one calf, and one unclassified) were observed in Hunt Area 17-3, for an estimate of 36 ± 20 moose (eight cows, 18 bulls, two calves, eight unclassified). Outside of the sightability survey area, 22 moose were observed (seven cows, eight bulls, three calves, and four unclassified). Additionally, in Unit 16A, 19 moose (four cows, ten bulls, and five unclassified) were observed incidental to elk surveys.

During January 2000, a moose sightability survey was conducted across Hunt Areas 15-1, 15-2, 15-6, and 15-7 (north of State Highway 14 and west of the American River drainage) concurrent with elk surveys in Unit 15. The objectives of the survey were to 1) obtain an adult population estimate to evaluate future population changes, and 2) to obtain a sex composition/bull population estimate as a baseline to evaluate the future effect(s) of recent permit increases. Contiguous hunt areas were selected where permits were recently increased to ten in each area, in a sufficiently small area that could be surveyed with available budget constraints (13 hours of

flight time) and still be adequate to obtain estimates with low sampling variances. In search units already selected for the elk survey, additional funds were expended to fly to higher elevations beyond those normally surveyed for elk. Furthermore, additional flight time was used to fly a large sample of the remaining subunits.

Twenty-six moose (seven cows, nine bulls, two calves, eight unclassified) were observed from a Hughes 500C helicopter during the survey. Sex classification was not always possible due to heavy vegetative cover and the lack of antlers on some moose. These data were initially analyzed with the moose sightability model (Unsworth et al. 1994, Beta 3 version). The results were an unexpected estimate of 614 ± 481 moose at the 90% CI level that was extrapolated from the 26 observed moose (corrected to 31 with the sampling design).

Further examination of the moose model revealed that during its development, only four moose were in cover greater than 70%. As a result, each moose is corrected to a range of 1.04 to 7.83 moose when observed in the first four cover classes (0-71% cover), but corrected to 34.38 moose in Cover Class 5, and to 100.0 moose in Cover Class 6 (90-100% cover). This effect is amplified when visibility declines and the intercept is decreased when the Hughes 500 helicopter is used for the survey. Therefore, the three moose observed in greater than 70% cover during the Unit 15 survey contributed greatly to the total estimate. Considerations for avoiding this concern in future surveys might include conducting surveys at a time of year when they are found in less cover, or earlier in the winter (December) when antlers are consistently present to improve classification efforts.

Harvest Characteristics

Harvest levels, hunter success, and hunter days expended for 2003 were determined from mandatory harvest reports (Tables 2 and 3). Hunt areas in Units 12, 15, and 17 were combined and/or renamed in 2001 and one new hunt area was added in Unit 10 (10-6) in 2001. Permit numbers were adjusted in the Region to respond to changes in hunter success rates and/or antler spread with a net loss of 22 permits. The 270 moose permits that were available in 2003 resulted in a reported harvest of 158 antlered moose and six antlerless moose. Mortality reports from some permittees were unaccounted for and were not used in calculating hunter success. Twelve permits were not filled during the controlled hunt drawing process due to lack of interest (one permit in Unit 12, six permits in Unit 17, and five permits in Unit 20) but were sold as left-over permits. The 2003 cumulative success rate (60%) was slightly higher than the average (59%) for the past five-year period (1999-2002). Success rates for antlered and antlerless moose were 60% and 88%, respectively. Drawing odds ranged from 1:1.0 (Hunt Areas 10-6, 10A-3, 16A-2, 17-1, 17-2, 17-3, 17-4, 17-5, 20-2, 20-3, and 20-4) to 1:17.5 (Hunt Area 8A-1).

Reported moose mortalities due to methods other than legal harvest during controlled hunts have varied considerably by unit (Table 4). Unit 15 continues to average the highest number of reported mortalities in the Region outside of scheduled hunts, followed by Units 10A and 12. It is likely that the level of mortality is considerably higher than reported for the Clearwater Region, particularly with respect to the 'Indian Harvest' and 'Illegal Kill' categories.

Climatic Conditions

The Clearwater Region experienced moisture conditions in 2003-2004 that were considered below normal. Snow pack in the Clearwater Basin was 89% of average (October-March) while the Salmon River Basin averaged 78% for the same time period. Snowfall was earlier than usual in the Region but most accumulation at the lower elevations did not persist. This allowed big game populations to forage and move easily and probably had a positive effect on big game over-winter survival.

Management Implications

Permit levels will continue to be allocated based on trends in antler spread of harvested moose and hunter success rates of recent permittees. Numbers of permits may be increased or decreased as dictated by harvest data. Permit numbers were decreased (-22) in the Clearwater Region in 2001; more substantial decreases in the near future are not anticipated.

All areas need more intensive work to determine population levels, trends, and habitat selection and use. Some moose populations are increasing and seem to respond favorably to extensive habitat alteration by silvi-cultural practices. However, other populations may be displaced or eliminated because they cannot adapt to habitat changes, particularly where yew-wood thickets are eliminated through logging and where increased road densities make moose more vulnerable to illegal and Indian harvest.

Literature Cited

Unsworth, J. W., F. A. Leban, D. J. Leptich, E. O. Garton, and P. Zager. 1994. Aerial Survey: User's Manual, Second Edition, Idaho Department of Fish and Game, Boise, ID. 84 pp.

Table 1. 2003 season structure for controlled moose hunts in the Clearwater Region.

Season		Open for	Hunt area	Number of permits
Dates	Length			
30 Aug-23 Nov	86 days	Antlered	8	6
			8A	6
			10-1	6
			10-2	3
			10-3	8
			10-4	4
			10-5	4
			10-6	3
			10A-1	9
			10A-2	8
			10A-3	3
			10A-4	7
			10A-5	5
			12-1	3
			12-2	13
			12-3	7
			12-4	7
			12-5	9
			12-6	6
			14-1	7
			14-2	6
			15-1	20
			15-2	15
			15-3	5
			15-4	20
			16-1	7
			16-2	10
			16A-1	5
			16A-2	2
			17-1	7
			17-2	3
			17-3	2
17-4	5			
17-5	5			
19-1	4			
19-2	8			
20-1	2			
20-2	5			
20-3	4			
20-4	2			
15 Oct-23 Nov	40 days	Antlerless	8	4
			8A	4

Table 2. Summary of moose harvest and drawing odds in the Clearwater Region, 1990-present.

Year	No. of permits	Harvest			% Success	First-choice applicants	Drawing odds
		M	F	Total			
1990	167	118	0	118	71	1,156	1:6.9
1991	176	134	0	134	76	1,201	1:6.8
1992	176	132	0	132	75	1,221	1:6.9
1993	201	159	0	159	79	1,211	1:6.0
1994	201	133	0	133	66	1,115	1:5.5
1995	263	177	0	177	67	1,501	1:5.7
1996	263	162	0	162	62	1,288	1:4.9
1997	263	157	0	157	60	1,579	1:6.0
1998	263	153	0	153	58	1,250	1:4.8
1999	292	180	8	188	64	1,540	1:5.3
2000	292	177	7	184	63	961	1:3.3
2001	270	141	7	148	55	931	1:3.4
2002	270	152	8	160	59	803	1:3.0
2003	270	156	7	163	60	858	1:3.2

^a Prior to 1996, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

Table 3. Summary of moose harvest and drawing odds by Game Management Unit in the Clearwater Region, 1994-present.

Unit	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds
			M	F				
8	1994	2	2	0	100	7.0	16	1:8.0
	1995	4	3	0	75	12.8	55	1:13.8
	1996	4	3	0	75	15.3	41	1:10.3
	1997	4	3	0	75	7.0	41	1:10.3
	1998	4	4	0	100	17.6	44	1:11.0
	1999	10	6	4	100	8.7	61	1:6.1
	2000	10	5	3	80	5.1	34	1:3.4
	2001	10	5	3	80	7.1	35	1:3.5
	2002	10	6	4	100	5.4	52	1:5.2
	2003	10	6	3	90	5.4	48	1:4.8
8A	1994	2	2	0	100	20.0	42	1:21.0
	1995	4	4	0	100	15.5	58	1:14.5
	1996	4	3	0	75	7.8	65	1:16.3
	1997	4	2	0	50	9.5	84	1:21.0
	1998	4	4	0	100	5.5	93	1:23.3
	1999	10	6	4	100	5.2	154	1:5.4
	2000	10	6	4	100	3.5	76	1:7.6
	2001	10	5	4	90	4.1	104	1:10.4
	2002	10	5	4	90	4.6	93	1:9.3
	2003	10	6	4	100	10.4	113	1:11.3
10	1994	19	11	0	58	7.9	119	1:6.3
	1995	23	14	0	61	7.6	114	1:5.0
	1996	23	16	0	70	7.3	124	1:5.4
	1997	23	16	0	70	8.4	134	1:5.8
	1998	23	14	0	61	6.7	151	1:6.6
	1999	23	16	0	70	11.1	149	1:6.5
	2000	23	13	0	57	4.0	112	1:4.9
	2001	28	17	0	61	6.4	91	1:3.3
	2002	28	14	0	50	9.3	86	1:3.1
	2003	28	20	1	75	6.5	82	1:2.9
10A	1994	9	7	0	78	10.5	58	1:6.4
	1995	23	21	0	91	8.3	184	1:8.0
	1996	23	19	0	83	9.9	155	1:6.7
	1997	23	20	0	87	13.2	201	1:8.7
	1998	23	14	0	61	9.8	151	1:6.6
	1999	34	21	0	62	8.7	194	1:5.7
	2000	34	29	0	85	11.9	134	1:3.9
	2001	32	28	0	88	6.8	116	1:3.6
	2002	32	26	0	81	7.9	130	1:4.1
	2003	32	27	0	84	8.1	140	1:4.4
12	1994 ^b	52	26	0	50	7.1	266	1:5.1
	1995	64	37	0	58	5.9	258	1:4.0
	1996	64	33	0	52	5.2	201	1:3.1
	1997 ^c	64	29	0	45	5.0	258	1:4.0
	1998 ^b	64	27	0	42	5.6	172	1:2.7
1999 ^b	61	29	0	48	6.0	191	1:3.1	

Table 3. Continued.

Unit	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds	
			M	F					
14	2000 ^b	61	31	0	51	6.3	119	1:2.0	
	2001	45	16	0	36	3.0	70	1:1.6	
	2002	45	24	0	53	4.5	58	1:1.3	
	2003	45	26	0	58	6.8	75	1:1.7	
	1994	6	5	0	83	3.8			
	1995	10	10	0	100	6.6	111	1:11.1	
	1996	10	10	0	100	5.7	113	1:11.3	
	1997	10	9	0	90	3.9	161	1:16.1	
	1998	10	8	0	80	6.0	124	1:12.4	
	1999	10	9	0	90	7.9	157	1:15.7	
	2000	10	9	0	90	4.5	100	1:10.0	
	2001	13	11	0	85	3.5	124	1:9.5	
	15	2002	13	11	0	85	5.3	120	1:9.2
2003		13	11	0	85	4.6	121	1:9.3	
1994		41	39	0	95	7.9	329	1:8.0	
1995		51	44	0	86	7.8	408	1:8.0	
1996		51	43	0	84	7.1	337	1:6.6	
1997		51	37	0	73	6.8	346	1:6.8	
1998		51	44	0	86	8.7	287	1:5.6	
1999		60	50	0	83	7.5	386	1:6.4	
2000		60	44	0	73	8.2	212	1:3.5	
2001		60	34	0	57	8.9	256	1:4.3	
2002		60	35	0	58	8.5	176	1:2.9	
2003		60	35	0	58	11.2	173	1:2.9	
16		1994	10	10	0	100	6.6	103	1:10.3
	1995	14	12	0	86	3.8	90	1:6.4	
	1996	14	9	0	64	5.4	65	1:4.6	
	1997	14	10	0	71	10.2	94	1:6.7	
	1998	14	11	0	79	6.3	79	1:5.6	
	1999	14	14	0	100	6.5	89	1:6.4	
	2000	14	13	0	93	6.2	78	1:5.6	
	2001	17	10	0	59	6.3	65	1:3.8	
	2002	17	11	0	65	5.4	40	1:2.4	
	2003	17	9	0	53	7.0	58	1:3.4	
	16A	1994	5	3	0	60	15.7	43	1:8.6
		1995 ^d	7	6	0	86	6.9	38	1:5.4
		1996	7	2	0	29	2.0	41	1:5.9
1997		7	5	0	71	5.0	33	1:4.7	
1998		7	5	0	71	8.2	43	1:6.1	
1999		7	5	0	71	7.8	21	1:3.0	
2000		7	3	0	43	8.7	21	1:3.0	
2001		7	6	0	86	4.3	13	1:1.9	
2002		7	3	0	43	14.3	14	1:2.0	
2003		7	3	0	43	4.3	8	1:1.1	
17		1994	31	13	0	42	8.7	61	1:2.0
		1995	35	13	0	37	7.9	66	1:1.9
		1996	35	8	0	23	3.3	45	1:1.3

Table 3. Continued.

Unit	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds	
			M	F					
19	1997	35	11	0	31	5.4	37	1:1.1	
	1998	35	4	0	11	4.3	26	1:1.0	
	1999	35	11	0	31	4.5	55	1:1.6	
	2000 ^b	35	12	0	34	5.8	23	1:1.0	
	2001	22	2	0	9	4.5	25	1:1.1	
	2002	22	9	0	41	6.5	14	1:1.0	
	2003	22	6	0	27	7.7	16	1:1.0	
	1994	12	8	0	67	6.8	34	1:2.8	
	1995	14	8	0	57	5.5	71	1:5.1	
	1996	14	9	0	64	4.3	44	1:3.1	
	1997	14	9	0	64	6.9	156	1:11.1	
	1998	14	10	0	71	3.4	37	1:2.6	
	1999	14	7	0	50	3.7	42	1:3.0	
	2000	14	7	0	50	5.6	29	1:2.1	
	2001	12	2	0	17	14.0	15	1:1.3	
	20	2002	12	4	0	33	5.0	6	1:1.0
		2003	12	11	0	92	10.0	14	1:1.2
1994		12	7	0	58	8.9	44	1:3.7	
1995		14	5	0	36	8.6	48	1:3.4	
1996		14	7	0	50	3.6	57	1:4.1	
1997		14	6	0	43	4.0	34	1:2.4	
1998		14	8	0	57	12.1	43	1:3.1	
1999		14	6	0	43	3.8	41	1:2.9	
2000		14	5	0	36	11.4	23	1:1.6	
2001		14	5	0	36	8.4	17	1:1.2	
2002	14	4	0	29	4.5	14	1:1.0		
2003	14	3	0	21	7.7	10	1:1.0		

^a Prior to 1996, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

^b Some permits not sold.

^c One permittee returned tag prior to season start.

^d Failure to make contact with two permittees during telephone survey of hunters; therefore, harvest estimate and days hunted were taken from the big game mandatory report.

Table 4. Summary of all known moose mortalities in the Clearwater Region, excluding controlled hunts, 1994-present.

Year	Mortality agent					Total
	Indian harvest	Illegal kill	Road kill	Natural	Other	
1994	2	13	2	1	5	23
1995	10	4	7	4	2	27
1996	4	9	4	3	6	26
1997	1	18	2	2	5	28
1998	6	3	3	0	5	17
1999	6	1	0	0	8	15
2000	5	10	0	5	0	20
2001	1	9	3	0	1	14
2002	2	13	4	0	2	21
2003	0	2	0	0	3	5

**PROGRESS REPORT
SURVEYS AND INVENTORY**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Moose Surveys and Inventories</u>
PROJECT:	<u>W-170-R-28</u>		
SUBPROJECT:	<u>3</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>1</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>6</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2003 to June 30, 2004</u>		

SOUTHWEST REGION

Abstract

Two moose were harvested in Hunt Area 19A in 2003. No moose were harvested in Hunt Areas 20A-1, 20A-2, and 20A-3 during the 2003 season. Seven permits were issued in these three areas combined in 2003. Hunter success for these three hunt areas may reflect effects of hunting on the local, more vulnerable, moose or effects of predation on moose in these areas. Both permit holders harvested a moose in Hunt Area 25. Two moose were harvested in Hunt Area 26 in 2003. The average greatest antler spread for bull moose ($n=6$) was 37.5 inches. No population trend or herd composition surveys were conducted in Units 19A, 20A, 25, or 26 during the reporting period.

Units 19A, 20A, 25, 26

Controlled Hunt Area 20A

Management Direction

Management will be consistent with the statewide management direction delineated in the 1991-1995 Moose Management Plan (pages 15-17).

Background

Moose observations have been increasing in Units 19A, 20A, 25, and 26. As a result, a two-permit hunt was initiated in Unit 20A in 1983. Further increases in moose sightings led to subdivision of the unit in 1995 into three hunt areas, 20A-1, 20A-2, and 20A-3, consisting of two, three, and two permits, respectively. This increase in moose observations also led to the establishment of a two-permit hunt in Unit 26 in 1997. Consequently two new hunts, Hunt Area 19A and Hunt Area 25, were created in 1999 consisting of two permits each.

Population Surveys

No moose population surveys were conducted during the reporting period.

Harvest Characteristics

Moose hunting seasons last 86 days in Units 19A, 20A, 25, and 26 (Table 1). Harvest data are generated through a mandatory hunter report requirement. Both permit holders harvested a moose in Hunt Area 19A (Tables 2 and 3). No moose were harvested in Hunt Areas 20A-1, 20A-2, and 20A-3. Both permit holders harvested a moose in Hunt Area 25. Two moose were harvested in Hunt Area 26 in 2003. Average spread was 45.4 inches in Unit 19A, 39.3 inches in Unit 25, and 45 inches in Unit 26.

Management Implications

Because reliable population data are not available and difficult to generate, permit levels have been conservative. The frequency and location of reports indicate pioneering populations exist in game management units adjacent to or near Units 20A and 26 (e.g., 19A, 24, 25). Two moose hunts with two permits each were implemented in Units 19A (Hunt Area 19A) and 25 (Hunt Area 25) in 1999. The lack of hunter success in Unit 20A needs to be monitored closely. The most vulnerable moose in the Chamberlain Basin, Root Ranch, and Cold Meadows areas may have been harvested, making hunting more difficult. There may also be effects of predation on animals in these areas. All areas need intensive data collection to determine population levels, trends, and habitat selection.

Table 1. 2003 season structure for controlled moose hunts in the Southwest Region.

Season		Open for	Hunt area	Number of permits
Dates	Length			
30 Aug-23 Nov	86 days	Antlered	19A	2
			20A-1	2
			20A-2	3
			20A-3	2
			25	2
			26	2

Table 2. Summary of moose harvest and drawing odds in the Southwest Region, 1995-present.

Year	No. of permits	Harvest			% Success	First-choice applicants	Drawing odds
		M	F	Total			
1995	7	7	0	7	100	38	1:5.4
1996	7	4	0	4	57	38	1:5.4
1997	9	7	0	7	78	49	1:5.4
1998	9	4	0	4	44	38	1:4.2
1999	13	9	0	9	69	105	1:8.1
2000 ^a	13	4	0	4	31	50	1:3.8
2001 ^b	16	8	0	8	50	47	1:2.9
2002	13	8	0	8	62	47	1:3.6
2003	13	6	0	6	46	70	1:5.4

^a Three permit holders opted for a rain-check tag in 2001.

^b Includes three rain-check tag recipients from the 2000 hunting season.

Table 3. Summary of moose harvest and drawing odds by Game Management Unit in the Southwest Region, 1995-present.

Unit	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds
			M	F				
19A ^b	1999	2	2	0	100	18.5	39	1:19.5
	2000	2	1	0	50	-	17	1:8.5
	2001	2	1	0	50	-	18	1:9.0
	2002	2	2	0	100	9.5	19	1:9.5
	2003	2	2	0	100	4.5	24	1:12
20A	1995	7	7	0	100	3.7	38	1:5.4
	1996	7	4	0	57	2.8	38	1:5.4
	1997	7	5	0	71	5.2	26	1:3.7
	1998	7	3	0	43	3.0	19	1:2.7
	1999	7	4	0	57	2.8	14	1:2.0
	2000 ^c	7	2	0	29	15.0	19	1:2.7
	2001 ^d	10	3	0	30	4.7	10	1:1.0
	2002	7	2	0	28	-	8	1:1.1
	2003	7	0	0	0	-	13	1:1.9
	25 ^b	1999	2	2	0	100	8.5	38
2000		2	1	0	50	-	9	1:4.5
2001		2	2	0	100	8.5	15	1:7.5
2002		2	2	0	100	5.0	17	1:8.5
2003		2	2	0	100	3.0	25	1:12.5
26 ^e	1997	2	2	0	100	1.5	23	1:11.5
	1998	2	1	0	50	7.0	19	1:9.5
	1999	2	1	0	50	2.0	14	1:7.0
	2000	2	0	0	0	-	5	1:2.5
	2001	2	2	0	100	3.5	4	1:2.0
	2002	2	2	0	100	3.5	3	1:1.5
	2003	2	2	0	100	11.0	8	1:4.0

^a Prior to 1996, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

^b Hunt established in 1999.

^c Three permit holders opted for a rain-check tag in 2001.

^d Includes three rain-check tag recipients from the 2000 hunting season.

^e Hunt established in 1997.

**PROGRESS REPORT
SURVEYS AND INVENTORY**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Moose Surveys and Inventories</u>
PROJECT:	<u>W-170-R-28</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>6</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2003 to June 30, 2004</u>		

MAGIC VALLEY REGION

Abstract

The frequency of observations suggest moose have increased in the Big Wood River and Trail Creek areas of Units 48 and 49, and in all of Unit 56. Legal harvest was authorized in the Magic Valley Region for the first time in 1999 in Unit 56. Beginning in the fall of 2001, harvest was authorized in Units 44, 48, and 49. Nine permits were issued in 2003 for the two hunt areas and eight hunters were successful (89%). The average greatest antler spread for bull moose ($n=8$) was 38.7 inches.

Units 43, 44, 45, 46, 47, 48, 49, 52, 52A, 53, 54, 55, 56, 57

Controlled Hunt Areas 44, 56

Management Direction

Follow statewide management direction; allow established populations to expand; transplant moose where feasible; and increase effort to record sightings and mortalities.

Background

Prior to 1990, transient moose were recorded throughout the Magic Valley Region, but there were no viable, resident populations. In recent years, moose numbers in the Region have increased as a result of natural ingress and transplants, and viable populations, capable of sustaining limited harvest, occur in Units 44, 48, 49, and 56.

Population Surveys

Aerial population surveys for moose have not been conducted in the Region. In recent years, observations indicate increasing numbers of moose along the South Fork of the Boise River in Unit 43, Willow Creek in Unit 44, the Big Wood River in Unit 48, and in the Trail Creek drainage on the border of Units 48-49. The increase in moose numbers is primarily the result of movement of moose from Unit 50. Moose released in Unit 44 probably contributed to an

increase in moose population in this unit. During the 2003-2004 reporting period, observations suggested there were 100+ moose in the Willow Creek, Big Wood, and Trail Creek areas. Populations in the Sublett area (Unit 56) appear to be stable and observations are common.

Harvest Characteristics

Hunting season length for antlered moose in both hunt areas in the Magic Valley Region were 86 days in 2003 (Table 1). Moose permits were increased from two to four permits in Hunt Area 44 (includes part of Unit 44 and all of Units 48 and 49) in 2003. Three permit holders were successful in harvesting adult bull moose and all were taken in Unit 48 (Table 2). Five antlered permits were again offered in Hunt Area 56 (includes Units 56, 73, and 73A). Five bulls were harvested with one taken in Unit 56, three in Unit 73, and one in Unit 73A (Table 2).

One other moose mortality was reported in the Region during the reporting period (Table 3). An adult female moose was found in Unit 48 in Croesus Gulch in April 2004. No determination was made as to cause of death, but body condition appeared to be good.

Trapping and Translocation

In 1981-1982, the Department identified that suitable, unoccupied moose habitat existed in Units 43 and 44 and requested that the Sawtooth National Forest conduct an environmental analysis for the establishment of a moose population on the Fairfield Ranger District. Upon completion of the analysis in 1983, arrangements were made to translocate “problem” moose from urban areas in the Upper Snake and Southeast Regions to Units 43 and 44. During the period from March 1986-June 2000, 31 moose (six adult or yearling bulls, 16 adult or yearling females, seven male calves, and two female calves) were released.

No moose were released in the Region during this reporting period.

Management Implications

Efforts to reintroduce moose in Unit 43 have not been successful in establishing a huntable moose population in this unit. Most of the released moose have been illegally killed or have moved from the area. However, numerous moose observations are made in Unit 43 during the winter while Department employees are conducting elk feeding operations and sightability surveys.

The Big Wood River moose population (Units 48 and 49) is expanding and has potential for additional growth. Human-moose conflicts in the Big Wood River Valley were minimal during the reporting period and public support remains strong for moose population expansion in this area.

Table 1. 2003 season structure for controlled moose hunts in the Magic Valley Region.

Season		Open for	Hunt area	Number of permits
Dates	Length			
30 Aug-23 Nov	86 days	Antlered	44	4
			56	5

Table 2. Summary of moose harvest and drawing odds by hunt area in the Magic Valley Region, 1999-present.

Hunt area	Year	No. of permits	Harvest		% Success	Days/hunter	First-choice applicants	Drawing odds
			M	F				
44 ^a	2001	2	2	0	100	3.8	9	1:4.5
	2002	2	1	0	50	1.0	13	1:6.5
	2003	4	3	0	75	11.0	16	1:4.0
56	1999	5	5	0	100	16.0	28	1:5.6
	2000	5	5	0	100	3.8	21	1:4.2
	2001	5	4	1	100	19.2	31	1:6.2
	2002	5	4	0	80	3.0	31	1:6.2
	2003	5	5	0	100	17.2	37	1:7.4

^a Hunt established in 2001.

Table 3. Summary of all known moose mortalities in the Magic Valley Region, excluding controlled hunts, 1986-present.

Year	Mortality agent					Total
	Indian harvest	Illegal kill	Road kill	Natural	Other	
1986	0	1	0	0	0	1
1987	0	0	0	0	0	0
1988	0	0	1	1	0	2
1989	0	3	1	0	0	4
1990	0	1	0	0	0	1
1991	0	0	0	1	0	1
1992	0	0	1	0	0	1
1993	0	1	0	0	0	1
1994	0	0	0	0	0	0
1995	0	1	0	0	1	2
1996	0	2	0	0	0	2
1997	0	0	0	0	0	0
1998	0	0	0	0	1	1
1999	1	0	0	0	0	1
2000	0	0	0	0	0	0
2001	0	2	0	0	4	6
2002	0	0	0	0	0	0
2003	0	0	0	0	1	1

**PROGRESS REPORT
SURVEYS AND INVENTORY**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Moose Surveys and Inventories</u>
PROJECT:	<u>W-170-R-28</u>		
SUBPROJECT:	<u>5</u>	STUDY NAME:	<u>Big Game Population Status,</u>
STUDY:	<u>1</u>		<u>Trends, Use, and Associated</u>
JOB:	<u>6</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2003 to June 30, 2004</u>		

SOUTHEAST REGION

Abstract

The number of moose permits available in 2003 increased by five from 2002; 155 antlered-only and 70 antlerless-only permits were offered in 2003. Mandatory harvest reports identified a total of 129 antlered (83% hunter success) and 51 antlerless (73% hunter success) moose harvested. The average greatest antler spread was 35.7 inches for the 119 antlered moose for which data is available. Data for Hunt Area 56 (Units 56, 73, and 73A) are reported under the Magic Valley Region-subproject 4.

Units 66A, 70, 71, 72, 73, 73A, 74, 75, 76, 77, 78

**Controlled Hunt Areas 66A, 70, 71-1, 71-2, 72,
74, 75, 76-1, 76-2, 76-3, 77, 78**

Management Direction

Management direction for moose in the Southeast Region follows that for the state in general; to provide “high-quality” hunting and other moose-related recreational opportunities. Consequently, permit levels are conservative, and hunter success is high relative to hunts for other cervid species. For antlered-only hunts, emphasis is on providing each hunter with the opportunity to harvest a mature bull moose. Antlerless-only moose hunting is also offered due to relatively high moose populations. Non-consumptive values of moose are also important.

The 1991-1995 Moose Management Plan established the goals of providing high-quality moose hunting and other moose-related recreational experiences for as many people as possible, assisting the expansion of moose populations into available habitat, and increasing permit numbers where possible.

Background

Prior to the 1950s, there were too few moose in the Southeast Region to justify harvest. The first hunt for moose in the Region was held in 1959 when five antlered-only permits were issued for a

portion of Unit 76. With continued growth of the population, harvest has increased to recent levels of over 150 moose in 11 units. Illegal moose harvest may be substantial (Kuck and Ackerman 1984), although reporting of these cases is sporadic. The Department issued a small number of permits for any moose in several units from 1975 to 1990. An average of 80% of that harvest was antlered moose. In 1991, antlerless-only hunts were instituted in Units 66A and 76. Since 1991, permits have been issued for antlered or antlerless-only moose. Antlerless moose hunts start later than antlered hunts to provide more time for calf development.

Portions of the Region continue to be colonized by moose, and populations apparently are increasing. Notably, moose appear to be expanding in Units 73 and 73A.

Population Surveys

No moose surveys were conducted in the Southeast Region during 2003 due to time constraints. Moose aerial surveys were conducted in two units in 2002. During January 2002, search units were flown in Hunt Area 66A and Hunt Area 76-3.

In Hunt Area 66A, 19 search units were stratified as high, medium, or low likelihood of moose and 13 search units were flown for sightability. One hundred fifty-two moose were counted in these 13 search units consisting of 75 cows, 48 bulls, and 29 calves (Table 1). Estimates of 219 (± 31) total moose including 105 (± 15) cows, 75 (± 18) bulls, and 39 (± 9) calves were generated using the Hiller-Siloy Wyoming-based model (Unsworth et al. 1994). Overall herd composition was estimated as 48% cows, 34% bulls and 18% calves. The population estimate of 219 in 2002 was 23% lower than the estimate of 285 in 1995, however 90% confidence intervals overlap. Average moose seen were 3.0 in low units, 16.0 in medium units, and 18.5 in high units. Search units were likely well-stratified for the survey.

In Hunt Area 76-3, 13 search units were stratified as high or low likelihood of moose and ten search units were flown for sightability. One hundred three moose were counted in these ten search units consisting of 41 cows, 48 bulls, and 14 calves (Table 1). Estimates of 174 (± 40) total moose including 71 (± 20) cows, 78 (± 20) bulls, and 25 (± 8) calves were generated using the Hiller-Siloy Wyoming-based model. Overall herd composition was estimated as 41% cows, 45% bulls and 14% calves. The population estimate of 174 in 2002 was very close to the 167 estimated in 1995. Average moose seen was 9.8 in low units and 11.2 in high units. Search units may need to be re-stratified or have stratification by moose likelihood deleted in future surveys.

Harvest Characteristics

Hunting season lengths for antlered and antlerless moose remained at 86 days (August 30-November 23) and 40 days (October 15-November 23), respectively, in 2003 (Table 2). Two hundred twenty-five permits (155 antlered and 70 antlerless) were issued. A telephone survey to estimate total harvest was not conducted. Minimum reported harvest was available through a mandatory mortality report of successful hunters. Reported harvest totaled 184; 129 antlered and 55 antlerless moose (Tables 3 and 4).

Minimum overall hunter success rate for the Region was 80%; 73% for antlerless-only permits and 83% for antlered-only permits.

Other sources of moose mortality are illegal, Indian harvest, natural, road-kills, and other. For the 2002-2003 reporting period, six non-harvest mortalities were reported. (Table 5). Reporting of non-hunting mortalities is believed to be much lower than the actual number.

Climatic Conditions

Winter 2003-2004 snow depths were significantly below the 30-year average, with snow levels at 60-80% of average in most drainages. Average temperature during the winter was similar to the 30-year norm.

Habitat Conditions

Succession of aspen stands into conifer may negatively affect moose habitat in the future. Treatment to retard succession may slow potential decreases. Development and disturbance associated with mining and timber harvest in the eastern portion of the Region continued. Livestock grazing and other development of riparian areas impact moose habitat in many parts of the Region.

Management Implications

Aerial surveys, using sightability models such as Anderson (1994) and Unsworth et al. (1994), and the mandatory check of moose harvested provide the majority of information available for management. Conservative permit levels likely allow for passive population expansion and growth, particularly in those areas being newly colonized.

Relatively high drawing odds for antlered-only permits indicate strong demand for moose hunting opportunity. Antlerless-only drawing odds are generally 1:1 or less; however, leftover permits sell quickly.

Moose also have high non-consumptive values for viewing by the public. Their relative abundance and general lack of fear of humans make them easy for people to observe.

During the spring and early summer, an average of between five and 30 moose wander into the city of Pocatello and surrounding communities. These are nearly always yearlings or two-year olds and are most often hazed back into the surrounding hills or captured and translocated to more suitable habitat.

Literature Cited

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- Unsworth, J. W., F. A. Leban, D. J. Leptich, E. O. Garton, and P. Zager. 1994. Aerial survey: user's manual, second edition. Idaho Department of Fish and Game, Boise, ID 84 pp.

Table 1. Total observed moose by sex/age class, and model estimates of moose from aerial surveys in the Southeast Region, 1991-present.

Hunt area/ Year	Observed		Estimate	
	Total	Bull:Cow:Calf	Total	Bull:Cow:Calf
76-1, 2				
1994	90	42:100:42	432	26:100:50
2000	286	74:100:42	510±83	74:100:42
76-3, 4				
1993	104	76:100:37	192	76:100:36
1997	89	85:100:44	190	100:100:53
76-5, 6				
1991	136	49:100:60	-	-
1995	121	55:100:40	167±22	54:100:34
2002	103	117:100:34	174±40	110:100:35
76				
1999	140	100:100:62	583±146	99:100:60
66A				
1995	159	69:100:49	285±60	67:100:43
2002	152	64:100:39	219±31	71:100:37

Table 2. 2003 season structure for controlled moose hunts in the Southeast Region.

Season		Open for	Hunt area	Number of permits			
Dates	Length						
30 Aug-23 Nov	86 days	Antlered	66A	30			
			70	5			
			71-1	5			
			71-2	5			
			72	5			
			74	5			
			75	10			
			76-1	25			
			76-2	20			
			76-3	25			
			77	10			
			78	10			
			15 Oct-23 Nov	40 days	Antlerless	66A	15
						71-1	5
71-2	5						
75	5						
76-1	20						
76-2	10						
			76-3	10			

Table 3. Summary of moose harvest and drawing odds in the Southeast Region, 1982-present.

Year	No. of permits	Harvest			% Success	First-choice applicants	Drawing odds
		M	F	Total			
1982	68	59	0	59	87	2,442	1:35.9
1983	74	54	5	59	80	-	-
1984	95	77	5	82	86	1,908	1:20.1
1985	95	73	4	77	81	1,841	1:19.4
1986	95	79	4	83	87	-	-
1987	95	81	8	89	94	834	1:8.8
1988	110	100	5	105	95	830	1:7.5
1989	110	95	4	99	90	556	1:5.1
1990	125	98	9	107	86	738	1:5.9
1991	135	94	20	114	84	910	1:6.7
1992	135	98	19	117	87	837	1:6.2
1993	160	113	29	142	89	728	1:4.6
1994	160	114	29	143	89	809	1:5.1
1995	180	115	32	147	82	932	1:5.2
1996	180	105	34	139	77	921	1:5.1
1997	180	115	31	146	81	849	1:4.7
1998	180	103	28	131	73	804	1:4.5
1999	185	104	49	153	83	1,026	1:5.5
2000	185	111	34	145	78	600	1:3.2
2001	220	124	48	172	78	747	1:3.4
2002	220	127	38	165	75	723	1:3.3
2003	225	129	51	180	80	701	1:3.1

Table 4. Summary of moose harvest and drawing odds by Game Management Unit in the Southeast Region, 1994-present.

Unit	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds
			M	F				
66A	1994	35	22	10	91	4.9	232	1:6.6
	1995	42	28	9	88	7.4	294	1:7.0
	1996	42	24	8	76	4.1	231	1:5.5
	1997	42	26	7	79	7.7	247	1:5.9
	1998	42	22	8	71	4.7	232	1:5.5
	1999	42	22	12	81	5.2	273	1:6.5
	2000	42	27	7	81	5.7	194	1:4.6
	2001	45	24	12	80	4.1	220	1:4.9
	2002	45	29	12	91	-	202	1:4.5
	2003	45	28	12	89	3.8	215	1:4.8
70	1994	5	5	0	100	5.5	8	1:1.6
	1995	5	4	0	80	11.6	36	1:7.2
	1996	5	3	0	60	6.0	10	1:2.0
	1997	5	4	0	80	21.0	29	1:5.8
	1998	5	5	0	100	6.0	16	1:3.2
	1999	5	4	0	80	11.3	30	1:6.0
	2000	5	4	0	80	20.0	21	1:4.2
	2001	5	4	0	80	11.8	15	1:3.0
	2002	5	5	0	100	-	30	1:6.0
	2003	5	5	0	100	10.0	15	1:3.0
71	1994	10	10	0	100	9.1	66	1:6.6
	1995	10	10	0	100	5.9	49	1:4.9
	1996	10	8	0	80	5.8	73	1:7.3
	1997	10	9	0	90	8.1	52	1:5.2
	1998	10	9	0	90	6.8	54	1:5.4
	1999	15	6	4	67	6.1	75	1:5.0
	2000	15	7	4	73	11.0	42	1:2.8
	2001	20	9	5	70	7.1	54	1:2.7
	2002 ^b	20	7	3	50	-	25	1:1.3
	2003 ^b	20	9	6	75	7.5	23	1:1.2
72	1994	5	5	0	100	4.7	21	1:4.2
	1995	5	5	0	100	5.2	32	1:6.4
	1996	5	3	0	60	6.0	27	1:5.3
	1997	5	5	0	100	3.0	28	1:5.6
	1998	5	4	0	80	5.8	34	1:6.8
	1999	5	5	0	100	6.8	47	1:9.4
	2000	5	5	0	100	5.4	26	1:5.2
	2001	5	5	0	100	1.8	39	1:7.8
	2002	5	5	0	100	-	31	1:6.2
	2003	5	4	0	80	12.8	34	1:6.8
74	1994	5	2	0	40	11.0	11	1:2.2
	1995	5	5	0	100	5.2	16	1:3.2
	1996	5	3	0	60	2.3	22	1:4.4
	1997	5	3	0	60	23.3	18	1:3.6
	1998	5	3	0	60	12.0	25	1:5.0
	1999	5	2	0	40	4.3	19	1:3.8

Table 4. Continued.

Unit	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds	
			M	F					
75	2000	5	4	0	80	13.7	12	1:2.4	
	2001	5	4	0	80	34.7	16	1:3.2	
	2002	5	3	0	60	-	16	1:3.2	
	2003	5	4	0	80	7.0	24	1:4.8	
	1994	5	4	0	80	14.0	30	1:6.0	
	1995	5	5	0	100	19.3	36	1:7.2	
	1996	5	4	0	80	9.3	27	1:5.3	
	1997	15	8	5	87	5.2	48	1:3.2	
	1998	15	9	2	73	8.9	36	1:2.4	
	1999	15	10	4	93	8.9	41	1:2.7	
	2000	15	5	4	60	3.8	28	1:1.9	
	2001	15	10	4	93	7.1	26	1:1.7	
	2002	15	9	2	73	-	29	1:1.9	
	2003 ^b	15	9	3	80	6.8	31	1:2.1	
	76	1994	85	56	19	88	7.0	380	1:4.5
1995		94	46	23	73	10.3	420	1:4.5	
1996		94	50	26	81	4.4	447	1:4.8	
1997		84	48	19	80	5.3	375	1:4.5	
1998		84	40	18	69	6.4	345	1:4.1	
1999		84	42	29	85	7.0	480	1:5.7	
2000		84	45	19	76	5.6	249	1:3.0	
2001		105	51	27	74	4.8	326	1:3.1	
2002 ^b		105	57	21	74	-	329	1:3.1	
2003		110	51	30	74	6.2	323	1:2.9	
77		1994	5	5	0	100	13.0	29	1:5.8
		1995	7	6	0	86	18.6	21	1:3.0
		1996	7	4	0	57	11.5	26	1:3.7
		1997	7	6	0	86	7.3	20	1:2.9
		1998	7	4	0	57	6.3	28	1:4.0
	1999	7	6	0	86	14.2	28	1:4.0	
	2000	7	7	0	100	7.1	12	1:1.7	
	2001	10	8	0	80	7.6	24	1:2.4	
	2002	10	4	0	40	-	25	1:2.5	
	2003	10	9	0	90	6.3	23	1:2.3	
	78	1994	5	5	0	100	15.6	32	1:6.4
		1995	7	6	0	86	15.0	28	1:4.0
		1996	7	6	0	86	13.8	58	1:8.3
		1997	7	6	0	86	21.7	32	1:4.6
		1998	7	7	0	100	11.0	34	1:4.9
1999		7	7	0	100	10.4	33	1:4.7	
2000		7	7	0	100	13.9	16	1:2.3	
2001		10	9	0	90	10.9	27	1:2.7	
2002		10	8	0	80	-	36	1:3.6	
2003		10	9	0	90	19.8	13	1:1.3	

^a Prior to 1996, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

^b Applicants and drawing odds for antlered hunts only.

Table 5. Summary of all known moose mortalities in the Southeast Region, excluding controlled hunts, 1991-present.

Year	Mortality agent						Total
	Indian harvest	Illegal kill	Road kill	Natural	Train kill	Other	
1991	0	3	3	1	0	0	7
1992	0	0	1	0	0	0	1
1993	0	0	2	0	0	0	2
1994	0	0	1	0	0	0	1
1995	1	10	1	1	0	7	20
1996	1	2	5	0	1	1	10
1997	0	1	1	3	0	3	8
1998	0	1	1	0	1	3	6
1999	0	1	4	3	0	0	8
2000	0	4	2	1	0	2	9
2001	1	1	3	0	0	4	9
2002	0	1	2	1	0	1	5
2003	0	0	2	3	0	1	6

**PROGRESS REPORT
SURVEYS AND INVENTORY**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Moose Surveys and Inventories</u>
PROJECT:	<u>W-170-R-28</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>6</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2003 to June 30, 2004</u>		

UPPER SNAKE REGION

Abstract

Hunting season lengths for antlered and antlerless moose remained at 86 days (August 30-November 23) and 40 days (October 15-November 23), respectively, in 2003 (Table 1). Twenty-two controlled hunts with 336 permits were offered for antlered moose and 19 controlled hunts with 133 permits were offered for antlerless moose in the Upper Snake Region in 2003. A total of 265 antlered (79% hunter success) and 94 antlerless (71% success) moose were harvested as determined by mandatory harvest reports. The mean antler spread for all antlered hunts combined was 35.1 inches ($n=253$). Drawing odds ranged from 1:0.05 (Hunt Area 58) to 1:8.5 (Hunt Area 51).

No population surveys were conducted specifically for moose during this reporting period due to fiscal constraints. However, 383 moose were counted incidental to deer and elk surveys in Units 50 (34), 60A (239), and 64, 65, and 67 (110) on winter range.

A dry summer, followed by a winter with moderate snowfall, resulted in a moderate number of nuisance and depredation complaints during the 2003-2004 winter. Six depredation complaints were received during this reporting period. They involved moose eating stored hay and the incidents were resolved by hazing with cracker shells and snowmobiles and paneling haystacks. Five of the depredations were reported in Unit 65 and one in Unit 63A. A total of 20 moose were darted and translocated during the reporting period.

Concern has been expressed by sportsmen and field personnel that trophy bull moose have become difficult to come by in Region 6. Harvest data has not shown a marked decrease in mean antler spread, but this topic will need to be addressed and looked into for this years trophy species season setting process.

Units 50, 51, 58, 63, 63A

Controlled Hunt Areas 50, 51, 63, 63A

Background

In early 1980, six moose were released near the North Fork of the Big Lost River (Unit 50). Most initially remained close to their release site, but there has been egress to other areas. Reproduction has occurred, and additional transplants have augmented this population.

An antlered-only hunt in Unit 50 was initiated in 1993 and an antlerless-only hunt was initiated in 2003. An antlered-only moose hunt was opened in Unit 51 in 1999 as a result of an increasing number of moose being sighted incidentally during deer and elk sightability surveys and ground observations. In 2003, an antlered-only hunt was opened in Unit 58 for the same reason.

A significant population of moose exists in Unit 63A. Moose utilize the riparian habitat along the North and South Forks of the Snake River and associated sloughs, and depredation and nuisance complaints occur on a fairly regular basis. Moose distribution in Unit 63 is centered around the Mud Lake Wildlife Management Area (WMA)-Camas National Wildlife Refuge (NWR) area.

Hunt Area 63A was initiated in 1987. Unit 63 was added to Hunt Area 63A in 1999 and was then split into two separate hunts (Hunt Areas 63 and 63A) in 2003. Permit levels have continued to increase in both the antlered and antlerless hunts in these areas.

Population Surveys

No population surveys were conducted during this reporting period. However, moose were counted incidentally during elk sightability surveys in Unit 50 in 1999 and 2000 and in Unit 51 in 2003. A total of 13 moose were counted in Unit 51 in 2002, including three bulls, five cows, two calves, and three unclassified animals in 2003. A total of 11 moose were counted in Unit 50, including two bulls, two cows, three calves, and three unclassified animals in 2000. Six moose were observed in Unit 50 in 1999. Eighteen moose were observed in Unit 51 in 1999, including seven bulls, two cows, two calves, and seven unclassified animals. A total of 34 moose were counted incidentally to elk surveys in 2004.

Harvest Characteristics

Controlled hunt harvest and drawing odds are summarized in Tables 2 and 3. A total of 25 antlered-only permits were issued in these units in 2003, resulting in the harvest of 23 animals (92% success) based on mandatory harvest reports. In addition, 14 moose were harvested on 28 antlerless-only permits (50 % success). Mean antler spreads for these hunts were 36.7 ($n=5$, range 22.0-44.5), 36.25 ($n=2$, range 29.0-43.5), 35.50 ($n=1$), 35 ($n=5$, range 27.0-41.0), and 33.17 ($n=9$, range 26.0-43.5) for Hunt Areas 50, 51, 58, 63, and 63A, respectively, in 2003.

A summary of all known non-hunting mortalities is presented in Table 4.

Climatic Conditions

Spring and summer weather conditions during 2003 were warmer and much drier than normal. Winter precipitation was below normal and temperatures were near normal. The spring of 2004 has seen near average precipitation levels.

Habitat Conditions

Habitats within these units are quite varied. In Unit 50, extensive willow bottoms provide good summer and winter habitat, and the moose population appears to be increasing and ranging throughout the coniferous zone in summer.

Habitat in Units 51 and 58 are limited to discontinuous willow riparian areas. Habitat in Unit 63 is almost entirely desert and is unsuitable for moose except areas on and adjacent to Mud Lake WMA and Camas NWR. Habitat in Unit 63A consists primarily of the Snake River riparian zone adjacent to private residential and agricultural lands.

Depredations, Trapping, and Translocation

During this reporting period, one moose-related depredation complaint was received from Unit 63A. The complaint involved concerns over damage to stored hay and was resolved through paneling haystacks.

Management Implications

A new hunt was initiated in Unit 50 in 1993 and in Unit 51 in 1999. The populations in Unit 63 and 63A appear to be increasing and are causing numerous nuisance and depredation problems in some years. Permit increases were implemented beginning in 1993, and the antlerless hunt will be continued.

Units 59, 59A

Controlled Hunt Area 59

Background

Former Hunt Areas 59 and 59A were combined in 1993 to form the current Hunt Area 59. Twenty antlered-only and five antlerless-only permits were offered in 2003 (Table 3). Prior to 1993, two hunts with a total of 12 antlered-only permits were offered in these units. Former Hunt Area 59 had been open continuously since 1974 with permit levels fluctuating between four and eight with over 90% hunter success reported. Hunt Area 59A was closed in 1978 after one moose was harvested in the preceding four years. In 1983, this hunt was reopened and two permits were issued annually through 1988 with 100% hunter success. Four permits were issued each season from 1989-1992 with 100% hunter success. Permit levels have increased steadily since that time.

Population Surveys

A moose trend count was flown most recently in Units 59 and 59A on December 17-18, 1994. A Bell Model G47 Soloy helicopter was used to fly the survey. Counting conditions were good, with eight or more inches of relatively new snow cover present over the entire area. All probable moose habitat was surveyed. A total of 179 moose (129 in Unit 59 and 50 in Unit 59A) with a bull:cow:calf ratio of 44:100:54 was counted on the survey. Of the 40 bulls counted, 13 were classified as yearlings, 20 as adults, and seven had already shed antlers.

Few previous data are available for comparison. Prior to this count, no surveys had been conducted in Unit 59 since 1984 (64 total moose), and Unit 59A had never been surveyed specifically for moose. However, during deer and elk sightability surveys conducted in 1991-1992, 1993-1994, and 1999-2000, moose were counted on an incidental basis. In 1991-1992, 46 moose were counted in Unit 59 and 71 in Unit 59A. In 1993-1994, a total of 49 moose were observed in Unit 59 and 46 in Unit 59A (unclassified). The 1999-2000 survey resulted in a total count of 90 moose, including ten bulls, 19 cows, 13 calves, and 48 unclassified.

Harvest Characteristics

Controlled hunt harvest and drawing odds are summarized in Tables 2 and 3. Twenty permits for antlered moose were offered in 2003, and 20 animals were harvested for a 100% hunter success rate. In addition, five antlerless permits were issued and five animals were harvested for a 100% success rate. Mean antler spread was 33.68 inches ($n=20$) and ranged from 21.0-47.25 inches.

Statewide drawing odds have improved substantially in most units due to regulation changes implemented in 1986. In 2003, drawing odds were 1:4.5 in Hunt Area 59.

A summary of all known non-hunting mortalities is presented in Table 4. Known illegal kill was a serious problem in the early 1980s when it nearly equaled controlled harvest, but has been of little significance based on documented mortalities in recent years.

Climatic Conditions

Spring and summer temperatures were slightly higher than average while precipitation was well below normal. Fall and winter temperatures were near normal with snow depths well below average. Precipitation has improved since mid-March.

Habitat Conditions

Habitat consists primarily of conifer/sagebrush ecotones and aspen. Riparian areas are limited and discontinuous. Habitat extends down major drainages that have willows. Improving riparian zone management would increase habitat quality and quantity in this area.

Depredations, Trapping, and Translocation

No depredations, trapping, or translocation operations occurred during this reporting period.

Management Implications

General observations indicate the moose population in these units is increasing. Permit levels have increased steadily and will continue to be adjusted in response to data analysis.

Units 60, 60A, 61, 62, 62A

Controlled Hunt Areas 60, 60A, 61-1, 61-2, 61-3, 62, 62A

Background

During the 1970s, the moose population in Fremont County was thought to be declining and experiencing high levels of illegal mortality and Indian harvest. As a result, in 1977, all moose hunts in Fremont County were closed. After a boundary change to include only Clark County, Hunt 361-1 was the only hunt open from 1977 to 1982.

The population had increased by 1983. A winter aerial survey conducted in 1983 counted moose in numbers slightly below the highs of the early 1950s. The Island Park area is the only area where counts were clearly lower than those in the 1952-1956 period. In response to the population recovery, eight controlled hunts were opened in 1983 in Fremont County.

A new hunt was established in Unit 60A in 1986. The hunt area consists of agricultural land and the riparian zone along the Henrys Fork of the Snake River. Many residences and farms occur in the area. The moose population within this corridor has been increasing. Annual depredation and nuisance complaints of moose in agriculture fields and near towns and residences have been received, resulting in expanded antlerless-only hunting opportunity. Permits were reduced by approximately 50% on the Island Park caldera portion of the Region in 1991 as a result of significant winter mortality during the 1988-1989 winter, but have been steadily increasing since as populations continue to grow.

Fourteen hunts with a total of 129 antlered-only and 45 antlerless-only permits were offered in 2003 (Table 3).

Population Surveys

A population survey was conducted in Unit 62 and a portion of 62A during December 2000. The survey in 62A was not completed because of fiscal constraints. The final population estimate for Unit 62 was 366 moose (180 cows, 109 bulls, and 77 calves; Table 5). This total compares to fixed wing censuses of 228 and 97 moose observed during 1989 and 1990, respectively.

Most of the area was surveyed by airplane from November 1989-February 1990. Survey results indicated that moose populations had decreased substantially since the previous winter. Moose

appeared to be in poor condition prior to the 1988-1989 winter following two years of drought, and significant winter losses probably occurred. Survey results are shown in Table 6.

A helicopter survey was conducted along the North Fork Snake River corridor between St. Anthony and the Highway 33 bridge in Hunt Area 60A in December 1991. Only the riparian corridor was searched, so this should be considered a minimum count. A total of 37 moose were observed, including two bulls, 21 cows, and 14 calves.

Moose have been counted incidental to deer and elk sightability surveys in Unit 60A on a fairly regular basis. However, moose distribution varies greatly from year to year and, since not all search units are surveyed, the usefulness of this information is questionable.

In 2004, a total of 239 moose were counted incidental to deer trend surveys. The majority of these animals were unclassified. Other recent totals for Unit 60A include 185 in 2003, 387 in 2002, 473 in 2000, 585 in 1998, 340 in 1997, 219 in 1996, 272 in 1995, 360 in 1994, 187 in 1993, and 312 in 1991.

Harvest Characteristics

Controlled hunt harvest and drawing odds are summarized in Tables 2 and 3. One hundred twenty-nine antlered-only moose permits were issued in 2003, resulting in the harvest of 89 animals (69% success) based on mandatory harvest reports. In addition, 32 moose were harvested on the 45 antlerless-only permits (71% success) in Hunt Areas 60, 60A, 61-1, 61-2, 61-3, 62, and 62A. Mean antler spreads for individual hunts were 30.78 ($n=19$, range 14.0-48.0), 32.5 ($n=2$, range 31.0-34.0), 33.85 ($n=13$, range 23.0-42.75), 32.91 ($n=13$, range 12.0-44.0), 35.63 ($n=14$, range 19.5-46.75), 35.13 ($n=10$, range 30.0-40.0), and 36.19 ($n=13$, range 15.0-47.75) for Hunt Areas 60, 60A, 61-1, 61-2, 61-3, 62, and 62A, respectively.

A summary of all known non-hunting mortalities is presented in Table 4.

Climatic Conditions

Spring and summer weather conditions during 2003 were much warmer and drier than normal. Winter precipitation was below the long-term average and temperatures were near normal. The spring of 2004 came early. Temperatures and precipitation have been near normal.

Depredations, Trapping, and Translocation

No complaints were received regarding moose eating stored hay crops during this reporting period.

Management Implications

The increase in desert-wintering moose has led to increased depredations and nuisance complaints during average to severe winters. Mortality during the 1988-1989 winter resulted in significant population declines. However, moose populations have rebounded rapidly to levels

above those present prior to the 1988-1989 die-off. Consequently, permit levels have been increased accordingly.

Units 64, 65, 67

Controlled Hunt Areas 64, 65, 67-1, 67-2

Background

All of Unit 64 except the Canyon Creek drainage, Unit 65, and Unit 67 north and west of State Highway 31 have been open to moose hunting since 1974. In 1983, this area (old Hunt Area 364) was split along unit boundaries into three separate hunts. Increasing moose populations allowed a steady increase in permit levels until 1987. A new Hunt Area, 67-2, was created in 1983, and allowed the harvest of moose in that portion of Unit 67 previously closed.

Hunting opportunity has increased in these units from one hunt with two permits during the early 1980s to seven hunts with 78 permits (58 permits for antlered moose and 20 for antlerless) in 2003 (Table 3).

Population Surveys

Historically, moose populations appeared to be increasing in these units prior to the winter of 1988-1989. Forage was impacted by two years of drought and moose shifted their distribution to lower elevation agricultural and urban areas. Moose appeared to be in poor condition and significant winter losses likely occurred.

During the winter of 1992-1993, moose were first counted incidental to elk sightability surveys. Totals of 48, 26, and 90 moose were counted in Units 64, the western portion of 65, and 67, respectively. Most animals counted were unclassified. Moose were also counted incidental to elk sightability surveys during the 1995-1996 winter. Totals of 36, 101, and 60 moose were observed in Units 64, 65, and 67, respectively. Again, most animals were not classified. Moose were again counted incidentally during the 1997-1998 winter. Totals of 67, 30, and 88 (largely unclassified) moose were counted in Units 64, western 65, and 67, respectively. Moose were counted in Units 64, 65, and 67 incidental to elk surveys during the 2003-2004 winter. A total of 110 moose were observed.

Harvest Characteristics

Controlled hunt harvest and drawing odds are summarized in Tables 2 and 3. Hunters harvested 48 antlered moose on 58 permits (83% hunter success rate) and 16 antlerless moose on 20 permits (80% hunter success) in 2003 (Table 3). Mean antler spreads were 35.49 ($n=17$, range 29.5-43.0), 35.25 ($n=7$, range 28.0-44.0), 31.75 ($n=9$, range 25.0-38.0), and 37.43 ($n=12$, range 22.0-46.0) for Hunt Areas 64, 65, 67-1, and 67-2, respectively.

A summary of all known non-hunting mortalities is presented in Table 4.

Climatic Conditions

Spring and summer weather conditions during 2003 were warmer and significantly drier than normal. Winter precipitation was far below normal and temperatures were normal. Weather conditions for the spring of 2004 have been characterized by more normal precipitation levels.

Habitat Conditions

Conifer with interspersed aspen and narrow riparian areas make up the majority of moose habitat in this area. Mountain mahogany on south-facing ridges provides important winter moose habitat in Units 65 and 67. In Unit 64, moose are found wintering primarily in stream bottom willow/aspen/dogwood communities.

Depredations, Trapping, and Translocation

Five moose depredation complaints were received from Unit 65 during this reporting period. These involved moose hitting stored hay and were resolved with hazing and paneling of haystacks.

Management Implications

It is unknown if the fewer moose counted incidental to recent elk and deer surveys, compared to 1998, is a reflection of population change or differences in distribution due to mild wintering conditions. A 1989 aerial survey found approximately half the number of moose censused in 1985. A shift in moose distribution resulting from the drought and severe winter conditions was partially responsible for the low count. Also mortality during the 1988-1989 winter was above normal. Permit levels were maintained for the 1989 and 1990 seasons, but were adjusted in 1991 in response to data analysis. Moose populations appear to have rebounded rapidly to levels at or above those present prior to the 1988-1989 die-off. Consequently, permit levels increased in 1993, 1995, 1997, and again in 1999. Additionally, an antlerless-only hunt was initiated in Unit 64 in 1993.

Units 66, 69

Controlled Hunt Areas 66-1, 66-2, 69-1, 69-2, 69-3

Background

Ten hunts, with a total of 104 antlered-only permits and 35 antlerless permits were offered in Units 66 and 69 in 2003 (Table 3). The moose population in these units increased at a fairly rapid rate during the late 1970s when populations elsewhere in the Upper Snake Region were decreasing or remaining static. Moose populations appeared to have continued to increase, particularly in the west half of Unit 69.

Hunts 366 and 369 were split in 1981 to create four hunts (366-1, 366-2, 369-1, and 369-2). This resulted in a 50% increase in permit levels from 1980 (16 to 24). A new hunt (369-3) was created in 1984 from adjacent portions of Hunts 366-1 and 369-2.

Hunt 369-1 was changed from antlered-only to either-sex in 1986 to address landowner concerns over depredations in grain fields. Either-sex permits were not effective in harvesting antlerless moose. No female moose were harvested. As a result, this hunt was changed back to antlered-only in 1991. However, beginning in 1993, an antlerless-only hunt (369-4) was initiated. This hunt had ten permits and included all of Unit 69. In 1999, Unit 66 was added to this hunt, permits were increased to 20, and it was renumbered Hunt Area 66-3. This antlerless hunt was restructured again in 2001. Unit 66 was dropped from the hunt area and Unit 69 was split into three Hunt Areas (69-1, 69-2 and 69-3) that correspond to the like-numbered antlered hunts.

Population Surveys

No population surveys have been conducted in these units specifically to monitor moose populations. However, moose were counted incidentally during deer and elk sightability surveys in 1992, 1994, 1995, 1997, 1999, 2000, and 2002 (not all subunits were surveyed).

A total of 60 moose (most unclassified) were counted in Unit 66 in 2000. Other recent totals include 35 in 1999, 62 in 1997, 32 in 1995, 98 in 1994, and 26 in 1992. In Unit 69, 257 moose were tallied in 2000. This total included six bulls, 39 cows, 38 calves, and 174 unclassified moose. Other recent totals include 121, 168, 231, and 193 in 1992, 1995, 1997, and 1999, respectively. A total of 175 moose were counted during deer surveys in Unit 69 in 2002 (107 during composition flights and 68 during trend flights).

Harvest Characteristics

Controlled hunt harvest and drawing odds are summarized in Tables 2 and 3. Ten hunts with a total of 139 permits were offered in these two units in 2003. A total of 81 antlered moose were harvested on 104 permits (78% success). An additional 29 antlerless moose were harvested on 35 permits (83% success). Mean antler spreads were 36.22 ($n=15$, range 26.0-44.5), 37.0 ($n=17$, range 25.5-44.0), 39.44 ($n=20$, range 26.5-49.5), 34.78 ($n=22$, range 23.0-44.0), and 37.09 ($n=7$, range 34.5-47.5) for Hunt Areas 66-1, 66-2, 69-1, 69-2, and 69-3, respectively.

A summary of all known non-hunting mortalities is presented in Table 4.

Climatic Conditions

Spring and summer weather conditions during 2003 were warmer and significantly drier than normal. Winter precipitation was below normal and temperatures were slightly below average. The spring of 2004 has had average temperatures and precipitation.

Habitat Conditions

Hunt Area 66 is characterized by conifer/aspen habitats with narrow canyon bottom riparian areas which support moderate willow/dogwood communities. Hunt Area 69 is primarily aspen/sagebrush and private agricultural land. Moose may be migrating from adjacent areas to winter on the Tex Creek WMA.

Depredations, Trapping, and Translocation

No moose depredation complaints were received from Units 66 or 69 during this reporting period.

Management Implications

Steadily increasing moose populations in these units have resulted in an increase in permit levels in all of these hunts since the early 1990s. Additionally, an antlerless-only hunt has been offered since 1993.

Table 1. 2003 season structure for controlled moose hunts in the Upper Snake Region.

Season		Open for	Hunt area	Number of permits
Dates	Length			
30 Aug-23 Nov	86 days	Antlered	50	6
			51	2
			58	2
			59	20
			60	26
			60A	8
			61-1	20
			61-2	15
			61-3	22
			62	20
			62A	18
			63	5
			63A	10
			64	18
			65	10
			66-1	20
			66-2	22
			67-1	15
			67-2	15
			69-1	25
			69-2	25
			69-3	12
			15 Oct-23 Nov	40 days
59	5			
60	5			
60A	15			
61-1	5			
61-2	5			
61-3	5			
62	5			
62A	5			
63	8			
63A	15			
64	10			
66-1	5			
66-2	5			
67-1	5			
67-2	5			
69-1	10			
69-2	10			
69-3	5			

Table 2. Summary of moose harvest and drawing odds in the Upper Snake Region, 1990-present.

Year	No. of permits	Harvest			% Success	First-choice applicants	Drawing odds
		M	F	Total			
1990	140	135	2	137	98	1,160	1:8.3
1991	118	105	10	115	97	1,490	1:12.6
1992	118	104	11	115	97	1,101	1:9.3
1993	214	170	30	200	93	1,225	1:5.7
1994	214	171	33	204	95	1,564	1:7.3
1995	231	187	31	218	94	1,668	1:7.2
1996	231	167	28	195	84	1,551	1:6.7
1997	276	201	35	236	86	1,767	1:6.4
1998	276	200	29	229	83	1,654	1:6.0
1999	379	280	46	326	86	2,235	1:5.9
2000	379	274	45	319	84	1,387	1:3.7
2001	406	305	52	357	88	1,472	1:3.6
2002	406	262	45	307	76	1,529	1:3.8
2003	469	265	94	359	77	1,495	1:3.2

Table 3. Summary of moose harvest and drawing odds by analysis area in the Upper Snake Region, 1994-present.

Analysis area	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds
			M	F				
50, 51, 58, 63 63A	1994	22	11	9	91	4.1	74	1:3.4
	1995	22	11	8	86	4.4	114	1:5.2
	1996	22	10	9	86	4.1	71	1:3.2
	1997	26	13	9	85	4.8	116	1:4.5
	1998	26	9	8	65	5.6	96	1:3.7
	1999	34	17	10	79	12.0	160	1:4.7
	2000	34	17	11	82	2.7	90	1:2.6
	2001	37	18	13	84	3.3	113	1:3.1
	2002	37	22	11	89	6.7	111	1:3.0
	2003	53	23	14	70	3.7	107	1:2.0
59, 59A	1994	15	14	0	93	4.7	161	1:10.7
	1995	16	16	0	100	4.4	155	1:9.7
	1996	16	15	0	94	6.6	117	1:7.3
	1997	16	14	0	88	7.1	132	1:8.3
	1998	16	15	0	94	2.8	152	1:9.5
	1999	20	20	0	100	6.1	172	1:8.6
	2000	20	19	0	95	4.8	110	1:5.5
	2001	22	19	0	86	2.6	88	1:4.0
	2002	22	20	0	91	6.7	124	1:5.6
	2003	25	20	5	100	5.0	113	1:4.5
60, 60A 61, 62, 62A	1994	84	73	10	99	4.1	685	1:8.2
	1995	90	77	8	94	4.6	731	1:8.1
	1996	90	70	7	86	4.4	678	1:7.5
	1997	101	81	6	86	3.8	773	1:7.7
	1998	101	83	3	85	4.8	692	1:6.9
	1999	136	116	3	88	5.7	929	1:6.8
	2000	136	104	5	80	4.5	582	1:4.3
	2001	144	119	13	92	4.2	651	1:4.5
	2002	144	94	9	72	7.2	616	1:4.3
	2003	174	89	32	70	5.9	605	1:3.5
64, 65, 67	1994	37	30	5	95	8.7	249	1:6.7
	1995	40	33	5	95	7.8	218	1:5.5
	1996	40	24	4	70	6.3	254	1:6.4
	1997	56	35	7	75	4.5	228	1:4.1
	1998	56	36	5	73	4.8	229	1:4.1
	1999	79	49	15	81	8.1	279	1:3.5
	2000	79	51	10	77	4.8	202	1:2.6
	2001	74	55	9	86	3.8	175	1:2.4
	2002	74	41	8	66	6.8	217	1:2.9
	2003	78	48	16	82	8.7	184	1:2.4

Table 3. Continued.

Analysis area	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds
			M	F				
66, 69	1994	56	43	9	93	4.4	395	1:7.1
	1995	63	50	10	95	6.0	450	1:7.1
	1996	63	48	8	89	4.4	431	1:6.8
	1997	77	58	13	92	4.1	518	1:6.7
	1998	77	57	13	91	4.1	485	1:6.3
	1999	110	78	18	87	5.2	695	1:6.3
	2000	110	83	19	93	5.3	403	1:3.7
	2001	129	94	17	86	5.2	445	1:3.4
	2002	129	85	17	79	6.8	461	1:3.6
	2003	139	81	29	79	5.3	486	1:3.5

^a Prior to 1996, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

Table 4. Summary of all known moose mortalities in the Upper Snake Region, excluding controlled hunts, 1982-present.

Year	Mortality agent						Total
	Indian Harvest	Illegal kill	Road kill	Natural	Train kill	Other	
1982	0	3	0	0	0	0	3
1983	0	6	4	0	0	2	12
1984	11	10	6	3	0	17	47
1985	6	12	13	1	6	9	47
1986	6	19	14	1	0	7	47
1987	6	14	14	7	2	8	51
1988	1	6	31	7	4	41	90
1989	2	2	10	1	0	9	24
1990	3	8	16	4	0	13	44
1991	1	10	12	6	4	22	55
1992	3	10	38	0	0	15	66
1993	1	8	7	0	0	4	20
1994	0	9	36	3	0	6	54
1995	2	3	15	2	0	7	29
1996	2	1	30	1	0	16	50
1997	1	7	27	9	0	5	49
1998	0	2	25	1	0	7	35
1999	2	4	26	5	0	3	40
2000	2	6	19	1	0	4	32
2001	0	3	11	1	0	9	24
2002	0	0	15	3	0	4	22
2003	0	2	14	3	0	0	19

Table 5. Aerial survey of moose in Hunt Area 62.

2000-2001	Observed	Estimated ($\pm 90\%$ CI)
Total moose	332	366 \pm 16
Cows	164	180 \pm 9
Bulls	98	109 \pm 8
Calves	70	77 \pm 5
Bulls:Cows:Calves	60:100:43	61:100:43

Table 6. Aerial survey of moose in Hunt Areas 60, 60A, 61, and 62.

Inclusive location	1990-1991		1991-1992	
	Bulls:Cows:Calves	Total	Bulls:Cows:Calves	Total
Middle to N Leigh Creek	67:100:83	15	-	0
Wiggleton Hollow to Johns Creek	56:100:56	19	-	7
N Fork Badger Creek to Bitch Crk	72:100:56	41	-	6
Bitch Creek to Conant Creek	7:100:68	49	56:100:67	20
Conant Creek to Fall River	-	14	27:100:55	20
Fall River Ridge to Cave Falls Rd	36:100:43	80	-	28
Cave Falls Rd to Fish Creek Rd	-	10	56:100:22	16
Fish Creek to Moose Creek	-	24	-	19
Warm River Hatchery to Survey Draw	17:100:67	11	-	5
Buffalo River	-	2	-	2
Macks Inn/Big Springs Henrys Lake Flat	42:100:52	59	-	19
Henrys Lake	22:100:56	16	-	19
Henrys Fork to Hatchery Butte west of Warm River	32:100:60	102	-	14
Humphrey to Spencer	73:100:55	25	-	14
Spencer to Rattlesnake Creek	25:100:75	24	-	23
Corral Creek to Spring Creek	5:100:47	29	-	7
West Camas Drainage	-	14	-	29
East Camas Drainage	-	9	-	4
Big Bend Ridge	14:100:105	88	22:100:122	68
Desert, east of Sand Creek	-	6	-	8
Desert, Red Rd to Sand Creek Rd ^a	100:100:100	85	65:100:41	50
Junipers and Hook of Sands ^a	118:100:44	103	33:100:67	18
Chokecherry Ridge and Second Sands ^a	69:100:45	63	72:100:36	48
Total		888		444

^a Moose counted in conjunction with helicopter deer survey, December 18, 1988.

**PROGRESS REPORT
SURVEYS AND INVENTORY**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Moose Surveys and Inventories</u>
PROJECT:	<u>W-170-R-28</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>6</u>		<u>Habitat Studies</u>
PERIOD COVERED:	<u>July 1, 2003 to June 30, 2004</u>		

SALMON REGION

Abstract

Two controlled hunts with 14 total permits for antlered moose occurred in the Salmon Region during 2003. Eleven of 14 hunters harvested moose (79% hunter success). The average greatest antler spread for 11 of these moose for which data is available was 33.7 inches; the three-year running average is 35.3 inches. Interest in moose permits increased back to recent levels in 2003; 106 applicants selected Salmon Region hunts as first choices (draw odds = 1:7.6).

Units 21, 21A, 29, 30, 30A, 37A

Controlled Hunt Areas 21, 29

Background

Habitats in these units range from riparian river bottoms to sagebrush grasslands on rolling foothills up through ponderosa pine and Douglas-fir forests to lodgepole pine and spruce-fir forests at higher elevations. Willow shrub communities usually associated with moose habitat are not common. Portions of these units contain extensive cliff and rock talus areas at both low and high elevations. Topography is moderately to very rugged. Units 21 and 21A are in one of the higher precipitation zones in the Salmon Region, creating productive commercial forestlands. As a consequence, timber harvest is a dominant activity in at least the North Fork Salmon River drainage. Logging roads are common.

Units 21, 21A, 30, and 30A border areas in Montana where moose are common. Migrants from Montana may well have formed the initial nucleus for populations in units bordering Montana. Cross-border movements are no doubt common in this area. No information exists on historical moose numbers other than an increase in moose sightings in recent years, primarily in the North Fork Salmon River drainage. As a result, Hunt Area 21 (Units 21 and 21A) was initiated in 1990 with three permits. Similar increases in moose sightings resulted in establishment of Hunt Area 29 (Units 29 and 37A) in 1991 and Hunt Area 30 (Units 30 and 30A) in 1993. Hunt Area 30 was incorporated into Hunt Area 29 in 1999.

Population Surveys

Because of dense cover, low moose densities, and solitary habits of moose, formal population surveys are generally ineffective in occupied moose habitat in the Salmon Region. Incidental observations of moose are recorded during aerial surveys for other ungulates. During 2003-2004 surveys, observers counted 36 moose.

Harvest Characteristics

Harvest and hunter information was compiled from Big Game Mortality Reports, which hunters must complete within ten days of harvest; antlers of males must be presented to an IDFG representative. Permit levels (Tables 1 and 2) and season structure (Table 3) were unchanged in 2003. Fourteen antlered-moose permits were allocated between two controlled hunts in the Salmon Region for 2003. Eleven of 14 hunters harvested moose (79% success). Of 150 permits issued since 1990, 136 hunters (91%) have taken a moose (Table 1). Antler spread of moose harvested during the 2003 season ranged from 19.0 to 42.88 inches (11=33.7 in.). Since 1995, average spread ranged from 33.5 to 37.4 inches.

Four moose deaths were attributed to two causes of non-hunting mortality during the reporting period (Table 4). Non-hunting mortality ranged from zero to eight moose per year from 1982 to 2003.

Climatic Conditions

Rainfall during summer months in 2003 was below average, with warm, dry weather during early summer. Vegetative growth generally appeared well below average. Winter conditions were generally mild with temperatures above normal and snow accumulation at lower elevations below average. Animals, therefore, likely entered winter in average to below average body condition, then encountered a mild to average winter, which should have produced average over-winter survival. Snow pack (as measured at higher elevations) was approximately 70% of average by late winter. Onset of spring weather and associated plant phenology was apparently advanced by approximately 3-4 weeks. Water-year precipitation to date has been near average.

Habitat Conditions

Intensive logging operations in primary moose range of Units 21 and 21A generally have enhanced moose habitat by encouraging forb and shrub production in cutover areas. However, positive impacts may eventually be counter-balanced by negative effects of increased road access and loss of mature, dense-canopy forest stands used by moose for winter cover.

Capture and Translocation

No moose capture or translocation operations were conducted in the Salmon Region during the reporting period (Table 5). Opportunities exist to expand moose populations in Units 36 and 36B via capture and translocation.

Management Implications

Intensive population or habitat data will not be available for this area in the foreseeable future. Management will be based on moose sighting reports, incidental field observations of moose, and data from moose harvest and miscellaneous mortalities.

Table 1. Summary of moose harvest and drawing odds in the Salmon Region, 1990-present.

Year	No. of permits	Harvest			% Success	First-choice applicants	Drawing odds
		M	F	Total			
1990	3	2	0	2	67	12	1:4.0
1991	6	6	0	6	100	38	1:6.3
1992	6	6	0	6	100	32	1:5.3
1993	9	9	0	9	100	54	1:6.0
1994	9	8	0	8	89	54	1:6.0
1995	12	10	0	10	83	123	1:10.3
1996	12	11	0	11	92	82	1:6.8
1997	12	12	0	12	100	89	1:7.4
1998	12	11	0	11	92	92	1:7.7
1999	14	13	0	13	93	124	1:8.9
2000 ^a	14	11	0	11	79	80	1:5.7
2001 ^{a,b}	15	16	0	16	107	102	1:6.8
2002	14	12	0	12	86	76	1:5.4
2003	14	11	0	11	79	106	1:7.6

^a One permit was deferred from 2000 until 2001 season because of wildfires.

^b Two hunters mistakenly harvested bulls in Hunt Area 29.

Table 2. Summary of moose harvest and drawing odds by Hunt Area in the Salmon Region, 1994-present.

Hunt area	Year	No. of permits	Harvest		% Success	Days/hunter ^a	First-choice applicants	Drawing odds
			M	F				
21	1994	3	2	0	67	7.0	10	1:3.3
	1995	4	3	0	75	18.0	30	1:7.5
	1996	4	4	0	100	8.5	22	1:5.5
	1997	4	4	0	100	4.8	17	1:4.2
	1998	4	4	0	100	4.5	18	1:4.5
	1999	4	4	0	100	17.3	21	1:5.3
	2000 ^b	4	2	0	67	4.0	10	1:2.5
	2001 ^b	5	4	0	80	16.3	15	1:3.8
	2002	4	2	0	50	10.5	15	1:3.8
	2003	4	3	0	75	9.0	10	1:2.5
29	1994	3	3	0	100	2.0	30	1:10.0
	1995	5	4	0	80	4.5	62	1:12.4
	1996	5	5	0	100	7.4	41	1:8.2
	1997	5	5	0	100	6.6	45	1:9.0
	1998	5	4	0	80	2.7	44	1:8.8
	1999	10	9	0	90	3.7	103	1:10.3
	2000	10	9	0	90	4.9	70	1:7.0
	2001 ^c	10	12	0	100	6.7	87	1:8.7
	2002	10	10	0	100	7.9	61	1:6.1
	2003	10	8	0	80	6.3	96	1:9.6
30	1994	3	3	0	100	6.0	14	1:4.7
	1995	3	3	0	100	2.0	31	1:10.3
	1996	3	2	0	67	4.0	19	1:6.3
	1997	3	3	0	100	3.0	27	1:9.0
	1998 ^d	3	3	0	100	8.3	30	1:10.0

^a Prior to 1996, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

^b One permit was deferred from 2000 until 2001 season because of wildfires.

^c Two hunters mistakenly harvested bulls in Hunt Area 29.

^d Hunt Area 30 combined with Hunt Area 29 after 1998.

Table 3. 2003 season structure for controlled moose hunts in the Salmon Region.

Season			Open for	Hunt area	Number of permits
Dates	Length				
30 Aug-23 Nov	86 days	Antlered		21	4
				29	10

Table 4. Summary of all known moose mortalities in the Salmon Region, excluding controlled hunts, 1982-present.

Year	Mortality agent					Total
	Indian harvest	Illegal kill	Road kill	Natural	Other	
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	1	0	0	1
1987	0	0	0	1	0	1
1988	0	1	0	0	0	1
1989	0	0	0	0	0	0
1990	2	0	1	1	0	4
1991	6	0	0	0	0	6
1992	6	1	1	0	0	8
1993	0	1	0	1	0	2
1994	0	1	1	1	0	3
1995	0	0	0	2	0	2
1996	0	0	0	0	2	2
1997	0	1	1	1	0	3
1998	0	1	0	0	2	3
1999	0	0	1	0	1	2
2000	0	0	2	0	0	2
2001	0	2	2	0	0	4
2002	0	2	1	1	1	5
2003	0	0	3	1	0	4

Table 5. Summary of moose translocation in the Salmon Region, 1993-present.

Date	Capture site	Release site	Adults		Calves		Total
			M	F	M	F	
2/93	Units 60, 60A, 62 in various locations	Unit 36: Valley Cr.	1	2	0	0	3
		Unit 36: Decker Flat	0	2	1	0	3
		Unit 36: Gold Cr.	0	2	0	0	2

APPENDIX A
IDAHO
2003 SEASON
MOOSE RULES



2003 & 2004 MOOSE HUNTING SEASONS

- Only moose with at least one antler longer than six inches may be taken in any season open for antlered moose only.
- Only moose without antlers or with antlers less than six inches long may be taken in any season which is open for antlerless moose only.

MANDATORY CHECK AND REPORT REQUIREMENTS

Antlers must be presented at IDFG regional offices or to a conservation officer within 10 days of the date of the kill. *The IDFG headquarters office is not equipped to check in "mandatory check" species. In the Boise area, these animals can be checked at IDFG's volunteer office at 109 W. 44th St. in Garden City, between 10 a.m. and 3 p.m. weekdays.*

Successful hunters must complete a big game mortality report, available at IDFG regional offices or from conservation officers, within 10 days of the date of the kill.

A hunter may authorize another person to comply with the above report requirements if that person complies with those requirements and possesses the necessary information to accurately complete the form.

Unsuccessful permittees must present or mail their unused tags to an IDFG office within 10 days after the close of the season for which the tag was valid. Cancelled tags will be returned to the hunter upon request. Failure to report may result in future ineligibility in moose drawings.

2003 & 2004 ANTLERED MOOSE CONTROLLED HUNTS - 1,004 PERMITS

Hunt No.	Season Dates	Controlled Hunt Area	Permits	Notes
3001	Aug 30 - Nov 23	1-1	60	
3002	Aug 30 - Nov 23	1-2	30	
3003	Aug 30 - Nov 23	1-3	25	
3004	Aug 30 - Nov 23	1-4	40	
3005	Aug 30 - Nov 23	2	20	
3006	Aug 30 - Nov 23	3	5	
3007	Aug 30 - Nov 23	4*	10	
3008	Aug 30 - Nov 23	6	10	
3009	Aug 30 - Nov 23	7	10	
3010	Aug 30 - Nov 23	8	6	
3011	Aug 30 - Nov 23	8A	6	
3012	Aug 30 - Nov 23	9	5	
3013	Aug 30 - Nov 23	10-1	6	Contact Clearwater National Forest for motorized travel restrictions on Lolo Motorway.
3014	Aug 30 - Nov 23	10-2	3	
3015	Aug 30 - Nov 23	10-3	8	

* See controlled hunt area descriptions. This hunt includes other units or parts of other units.

2003 & 2004 ANTLERED MOOSE CONTROLLED HUNTS

Hunt No.	Season Dates	Controlled Hunt Area	Permits	Notes
3016	Aug 30 - Nov 23	10-4	4	
3017	Aug 30 - Nov 23	10-5	4	Contact Clearwater National Forest for motorized travel restrictions on Lolo Motorway.
3018	Aug 30 - Nov 23	10-6	3	
3019	Aug 30 - Nov 23	10A-1	9	
3020	Aug 30 - Nov 23	10A-2	8	
3021	Aug 30 - Nov 23	10A-3	3	
3022	Aug 30 - Nov 23	10A-4	7	
3023	Aug 30 - Nov 23	10A-5	5	
3024	Aug 30 - Nov 23	12-1	3	Contact Clearwater National Forest for motorized travel restrictions on Lolo Motorway.
3025	Aug 30 - Nov 23	12-2	13	Contact Clearwater National Forest for motorized travel restrictions on Lolo Motorway.
3026	Aug 30 - Nov 23	12-3	7	
3027	Aug 30 - Nov 23	12-4	7	
3028	Aug 30 - Nov 23	12-5	9	
3029	Aug 30 - Nov 23	12-6	6	Contact Clearwater National Forest for motorized travel restrictions on Lolo Motorway.
3030	Aug 30 - Nov 23	14-1	7	
3031	Aug 30 - Nov 23	14-2	6	
3032	Aug 30 - Nov 23	15-1	20	
3033	Aug 30 - Nov 23	15-2	15	
3034	Aug 30 - Nov 23	15-3	5	
3035	Aug 30 - Nov 23	15-4	20	
3036	Aug 30 - Nov 23	16-1	7	
3037	Aug 30 - Nov 23	16-2	10	
3038	Aug 30 - Nov 23	16A-1	5	
3039	Aug 30 - Nov 23	16A-2	2	
3040	Aug 30 - Nov 23	17-1	7	
3041	Aug 30 - Nov 23	17-2	3	
3042	Aug 30 - Nov 23	17-3	2	
3043	Aug 30 - Nov 23	17-4	5	
3044	Aug 30 - Nov 23	17-5	5	
3045	Aug 30 - Nov 23	19-1	4	
3046	Aug 30 - Nov 23	19-2	8	

2003 & 2004 ANTLERED MOOSE CONTROLLED HUNTS

Hunt No.	Season Dates	Controlled Hunt Area	Permits	Notes
3047	Aug 30 - Nov 23	19A	2	
3048	Aug 30 - Nov 23	20-1	5	
3049	Aug 30 - Nov 23	20-2	4	
3050	Aug 30 - Nov 23	20-3	2	
3051	Aug 30 - Nov 23	20-4	3	
3052	Aug 30 - Nov 23	20A-1	2	Limited Access
3053	Aug 30 - Nov 23	20A-2	3	Limited Access.
3054	Aug 30 - Nov 23	20A-3	2	Limited Access
3055	Aug 30 - Nov 23	21*	4	
3056	Aug 30 - Nov 23	25	2	
3057	Aug 30 - Nov 23	26	2	Limited Access
3058	Aug 30 - Nov 23	29*	10	
3059	Aug 30 - Nov 23	44*	4	
3060	Aug 30 - Nov 23	50	6	
3061	Aug 30 - Nov 23	51	2	
3062	Aug 30 - Nov 23	56*	5	
3063	Aug 30 - Nov 23	58	2	
3064	Aug 30 - Nov 23	59*	20	
3065	Aug 30 - Nov 23	60	26	
3066	Aug 30 - Nov 23	60A	8	Short range weapons only.# Limited access. Motorboat advised for game retrieval.
3067	Aug 30 - Nov 23	61-1	20	
3068	Aug 30 - Nov 23	61-2	15	
3069	Aug 30 - Nov 23	61-3	22	
3070	Aug 30 - Nov 23	62	20	
3071	Aug 30 - Nov 23	62A	18	
3072	Aug 30 - Nov 23	63	5	Short range weapons only in Mud Lake WMA. Limited access.
3073	Aug 30 - Nov 23	63A	10	Short range weapons only# Limited access.
3074	Aug 30 - Nov 23	64	18	
3075	Aug 30 - Nov 23	65	10	
3076	Aug 30 - Nov 23	66-1	20	
3077	Aug 30 - Nov 23	66-2	22	

** See page 11.*

** See controlled hunt area descriptions. This hunt includes other units or parts of other units.*

2003 & 2004 ANTLERED MOOSE CONTROLLED HUNTS

Hunt No.	Season Dates	Controlled Hunt Area	Permits	Notes
3078	Aug 30 - Nov 23	66A	30	
3079	Aug 30 - Nov 23	67-1	15	
3080	Aug 30 - Nov 23	67-2	15	
3081	Aug 30 - Nov 23	69-1	25	
3082	Aug 30 - Nov 23	69-2	25	
3083	Aug 30 - Nov 23	69-3*	12	Limited Access
3084	Aug 30 - Nov 23	70	5	
3085	Aug 30 - Nov 23	71-1	5	
3086	Aug 30 - Nov 23	71-2	5	
3087	Aug 30 - Nov 23	72	5	
3088	Aug 30 - Nov 23	74	5	
3089	Aug 30 - Nov 23	75	10	
3090	Aug 30 - Nov 23	76-1	25	
3091	Aug 30 - Nov 23	76-2	20	
3092	Aug 30 - Nov 23	76-3	25	
3093	Aug 30 - Nov 23	77	10	
3094	Aug 30 - Nov 23	78	10	

2003 & 2004 ANTLERLESS MOOSE CONTROLLED HUNTS - 231 PERMITS

Hunt No.	Season Dates	Controlled Hunt Area	Permits	Notes
3095	Oct 15 - Nov 23	1-1	15	
3096	Oct 15 - Nov 23	2	5	
3097	Oct 15 - Nov 23	8	4	
3098	Oct 15 - Nov 23	8A	4	
3099	Oct 15 - Nov 23	50	5	
3100	Oct 15 - Nov 23	59*	5	
3101	Oct 15 - Nov 23	60	5	
3102	Oct 15 - Nov 23	60A	15	Short range weapons only.* Limited Access. Motorboat advised for game retrieval.
3103	Oct 15 - Nov 23	61-1	5	
3104	Oct 15 - Nov 23	61-2	5	
3105	Oct 15 - Nov 23	61-3	5	

* See page 11.

* See controlled hunt area descriptions. This hunt includes other units or parts of other units.

2003 & 2004 ANTLERLESS MOOSE CONTROLLED HUNTS - 230 PERMITS

Hunt No.	Season Dates	Controlled Hunt Area	Permits	Notes
3106	Oct 15 - Nov 23	62	5	
3107	Oct 15 - Nov 23	62A	5	
3108	Oct 15 - Nov 23	63	8	Short range weapons only on Mud Lake WMA
3109	Oct 15 - Nov 23	63A	15	Short range weapons only, [#] Limited Access.
3110	Oct 15 - Nov 23	64	10	
3111	Oct 15 - Nov 23	66-1	5	
3112	Oct 15 - Nov 23	66-2	5	
3113	Oct 15 - Nov 23	66A	15	
3114	Oct 15 - Nov 23	67-1	5	
3115	Oct 15 - Nov 23	67-2	5	
3116	Oct 15 - Nov 23	69-1	10	
3117	Oct 15 - Nov 23	69-2	10	
3118	Oct 15 - Nov 23	69-3	5	
3119	Oct 15 - Nov 23	71-1	5	
3120	Oct 15 - Nov 23	71-2	5	
3121	Oct 15 - Nov 23	75	5	
3122	Oct 15 - Nov 23	76-1	20	
3123	Oct 15 - Nov 23	76-2	10	
3124	Oct 15 - Nov 23	76-3	10	

[#] See page 11.

HUNT AREA DESCRIPTIONS

Hunt Area 1-1—That portion of Unit 1 within the Priest River drainage, and those portions of the Pend Oreille and Salmo River drainages downstream from the Priest River drainage.

Hunt Area 1-2—That portion of Unit 1 within the following boundaries: beginning on U.S. Highway 95 bridge across the Pend Oreille River at Sandpoint, then northward along Highway 95 to the Kootenai River at Bonner's Ferry, then northwesterly along the Kootenai River to the U.S. border, then west along the U.S. border to the Priest River-Kootenai River divide, then south along the Priest River-Pack River divide to Flat Top Mountain, then south along the divide separating the Priest River drainage and the Pend Oreille drainage to Priest River, then east along the Pend Oreille River to the point of beginning. EXCEPT MYRTLE CREEK GAME PRESERVE – CLOSED.

Hunt Area 1-3—That portion of Unit 1 north and east of the Kootenai River.

Hunt Area 1-4—That portion of Unit 1 south of the Kootenai River and east of U.S. Highway 95. EXCEPT THE DAVID THOMPSON GAME PRESERVE – CLOSED.

Hunt Area 2—All of Unit 2.

Hunt Area 3—All of Unit 3.

Hunt Area 4—All of Units 4 and 4A.

Hunt Area 6—All of Unit 6.

Hunt Area 7—All of Unit 7.

Hunt Area 8— All of Unit 8.

Hunt Area 8A —All of Unit 8A.

Hunt Area 9—All of Unit 9.

Hunt Area 10-1—That portion of Unit 10 within the Cayuse Creek drainage.

Hunt Area 10-2—That portion of Unit 10 on the north side of the Kelly Creek drainage upstream from, but excluding, the Moose Creek drainage, and that portion on the south side of the Kelly Creek drainage upstream from, but excluding, the Cayuse Creek drainage.

Hunt Area 10-3—That portion of Unit 10 on the north side of the Kelly Creek drainage upstream from its mouth to and including the Moose Creek drainage, and the North Fork of the Clearwater River drainage upstream from the mouth of Kelly Creek.

Hunt Area 10-4—That portion of Unit 10 within the Fourth of July Creek drainage, that portion on the south side of the North Fork of the Clearwater River from the mouth of Fourth of July Creek upstream to the mouth of Kelly Creek, and the south side of the Kelly Creek drainage from its mouth upstream to, but excluding, the Cayuse Creek drainage.

Hunt Area 10-5—That portion of Unit 10 within the Weitas Creek drainage (a tributary of the upper North Fork of the Clearwater River), and the drainages on the southwest side of the North Fork of the Clearwater River from the Weitas Creek drainage to, but excluding, the Fourth of July Creek drainage.

Hunt Area 10-6 — That portion of Unit 10 on the north side of the North Fork of the Clearwater River drainage downstream from the mouth of Kelly Creek.

Hunt Area 10A-1—That portion of Unit 10A within the following boundary: Beginning at the junction of the Unit 10A boundary with Forest Service Road 250 along the North Fork of the Clearwater River, then southwest along Forest Service Road 250 to Forest Service Road 669, then west and south along Forest Service Road 669 to Highway 11 at Pierce, then south on Highway 11 to Forest Service Road 100, then south on Forest Service Road 100 to the Clearwater National Forest boundary, then south along the Clearwater National Forest boundary to the Unit 10A boundary, then north along the Unit 10A boundary to the point of beginning.

Hunt Area 10A-2—That portion of Unit 10A within the following boundary: Beginning at the junction of Unit 10A boundary with Forest Service Road 247, then south on Forest Service Road 247 to Forest Service Road 251, then south on Forest Service Road 251 to Forest Service Road 246, then southwest on Forest Service Road 246 to State Highway 11 at Headquarters, then south on Highway 11 to Forest Service Road 669 at Pierce, then northeast on Forest Service Road 669 to Forest Service Road 250, then northeast on Forest Service Road 250 to the Unit 10A boundary, then north and east along the Unit 10A boundary to the point of beginning.

Hunt Area 10A-3—That portion of Unit 10A within the following boundary: Beginning at the Grandad Bridge on the Unit 10A boundary, then south and east along the Silver Creek-Casey Creek Road to Forest Service Road 247, then south on Forest Service Road 247 to Forest Service Road 246 at Headquarters, then northeast on Forest Service Road 246 to Forest Service Road 251, then north on Forest

Service Road 251 to Forest Service Road 247, then north on Forest Service Road 247 to the Unit 10A boundary at the North Fork of the Clearwater River, then west on the Unit 10A boundary to the point of beginning.

Hunt Area 10A-4—That portion of Unit 10A north of Forest Service Road 1705 from Elk River to Grandad Bridge and north and west of Dworshak Reservoir and the Little North Fork of the Clearwater River.

Hunt Area 10A-5—That portion of Unit 10A south of Forest Service Road 1705 from Elk River to Grandad Bridge and north and west of Dworshak Reservoir.

Hunt Area 12-1—That portion of Unit 12 north of the Lochsa River from and including the Lost Creek drainage upstream to, but excluding the Crooked Fork drainage.

Hunt Area 12-2—That portion of Unit 12 within the Crooked Fork drainage and north of White Sand Creek upstream to and including the Storm Creek drainage.

Hunt Area 12-3—That portion of Unit 12 south of the Lochsa River from and including the Old Man Creek drainage upstream to and including the Mocus Creek drainage.

Hunt Area 12-4—That portion of Unit 12 south of the Lochsa River from, but excluding, the Mocus Creek drainage, upstream to and including the Cliff Creek drainage.

Hunt Area 12-5—That portion of Unit 12 within the Walton Creek drainage, that portion on the south side of White Sand Creek upstream to the mouth of Storm Creek, and all of White Sand Creek drainage upstream from, but excluding, the Storm Creek drainage.

Hunt Area 12-6—That portion of Unit 12 north of the Middle Fork of the Clearwater River from the Smith Creek Road (Forest Service Road 101) upstream to the mouth of the Lochsa River, that portion on the north side of the Lochsa River upstream to, but excluding, the Lost Creek drainage, and that portion on the south side of the Lochsa River from its mouth upstream to, but excluding, the Old Man Creek drainage.

Hunt Area 14-1—That portion of Unit 14 north of the following boundary: Beginning on the Unit 14 west boundary on the Slate Creek Road (Forest Service Road 354), then east on the Slate Creek Road to Forest Service Road 221, then north on Forest Service Road 221 to the Unit 14 east boundary.

Hunt Area 14-2—That portion of Unit 14 south of the following boundary: Beginning on the Unit 14 west boundary on the Slate Creek Road (Forest Service Road 354), then east on the Slate Creek Road to Forest Service Road 221, then north on Forest Service Road 221 to the Unit 14 east boundary.

Hunt Area 15-1—That portion of Unit 15 north of the South Fork of the Clearwater River from and including the American River drainage downstream to and including the Newsome Creek drainage.

Hunt Area 15-2—That portion of Unit 15 south of the South Fork of the Clearwater River downstream from and including the Crooked River drainage upstream to and including the Red River drainage.

Hunt Area 15-3—That portion of Unit 15 on the south and west sides of the South Fork of the Clearwater River downstream from, but excluding, the Crooked River drainage.

Hunt Area 15-4— That portion of Unit 15 north and east of the South Fork of the Clearwater River from and including the Sally Ann Creek drainage upstream to and including the Leggett Creek drainage.

Hunt Area 16-1 — That portion of Unit 16 north and west of the Hamby Creek Road (Forest Service Road 651), and that portion south and west of the Selway River from its mouth upstream to the Hamby Creek Road.

Hunt Area 16-2 — That portion of Unit 16 south and east of Hamby Creek Road (Forest Service Road 651), and that portion north and east of the Selway River from its mouth upstream to Fog Mountain Road (Forest Service Road 319).

Hunt Area 16A-1 — That portion of Unit 16A north and west of the following boundary: Beginning at Anderson Butte, then east along the Drive Ridge Trail (Forest Service Trail 809) to the Meadow Creek Trail (Forest Service Trail 726), then east along the Meadow Creek Trail to the Disgrace Butte-Vermilion Peak Trail (Forest Service Trail 609), then northeast along the Disgrace Butte-Vermilion Peak Trail to the Buck Lake Creek-Drake Creek Trail (Forest Service Trail 628), then northeast along the Buck Lake Creek-Drake Creek Trail to the Unit 16A boundary at Drake Saddle.

Hunt Area 16A-2—That portion of Unit 16A south and east of the following boundary: Beginning at Anderson Butte, then east along the Drive Ridge Trail (Forest Service Trail 809) to the Meadow Creek Trail (Forest Service Trail 726), then east along the Meadow Creek Trail to the Disgrace Butte-Vermilion Peak Trail (Forest Service Trail 609), then northeast along the Disgrace Butte-Vermilion Peak Trail to the Buck Lake Creek-Drake Creek Trail (Forest Service Trail 628), then northeast along the Buck Lake Creek-Drake Creek Trail to the Unit 16A boundary at Drake Saddle.

Hunt Area 17-1—That portion of Unit 17 north of the Selway River from Fog Mountain Road (Forest Service Road 319) upstream to and including the west side of the Moose Creek drainage, the North Fork Moose Creek drainage, and the north side of the East Fork Moose Creek drainage upstream to, but excluding, Cedar Creek.

Hunt Area 17-2—That portion of Unit 17 east of the Selway River from the mouth of Moose Creek upstream to and including the Bear Creek drainage, and that portion on the east side of the Moose Creek and East Fork Moose Creek drainage from the mouth of Moose Creek upstream to and including the Cedar Creek drainage.

Hunt Area 17-3—That portion of Unit 17 south and west of the Selway River from and including the Mink Creek drainage upstream to and including the Goat Creek drainage.

Hunt Area 17-4—That portion of Unit 17 west of the Selway River from, but excluding the Goat Creek drainage, upstream to Forest Service Road 468.

Hunt Area 17-5—That portion of Unit 17 east of the Selway River upstream from, but excluding the Bear Creek drainage to Forest Service Road 468; all of the Selway River drainage south of Forest Service Road 468.

Hunt Area 19-1—That portion of Unit 19 outside the Gospel Hump Wilderness boundary.

Hunt Area 19-2—That portion of Unit 19 within the Gospel Hump Wilderness boundary.

Hunt Area 19A—All of Unit 19A.

Hunt Area 20-1—That portion of Unit 20 within South Fork of Red River, the Big Mallard Creek and Little Mallard Creek drainages and the Salmon River drainage from the Big Mallard drainage to but EXCLUDING the Bargamin Creek drainage.

Hunt Area 20-2—That portion of Unit 20 within the Bargamin Creek drainage, and that portion on the north side of the Salmon River to, but excluding, the Sabe Creek drainage.

Hunt Area 20-3—That portion of Unit 20 within the Sabe Creek drainage.

Hunt Area 20-4—That portion of Unit 20 from the Mackay Bar Road (Forest Service Road 222) upstream to and including the Elkhorn Creek drainage.

Hunt Area 20A-1—That portion of Unit 20A east of the following Forest Service trails: Beginning at the Salmon River on Forest Service Trail 039, then south on Trail 039 to Forest Service Trail 038, then south on Trail 038 to Forest Service Trail 002, then south on Trail 002 to the south boundary of Unit 20A.

Hunt Area 20A-2—That portion of Unit 20A within the following boundary: Beginning at the Salmon River on Forest Service Trail 033, then south on Trail 033 to Forest Service Trail 007, then southwest on Trail 007 to the south boundary of Unit 20A, then east on the Unit 20A boundary to Forest Service Trail 002, then northeast on Trail 002 to Forest Service Trail 038, then northeast on Trail 038 to Forest Service Trail 039, then northeast on Trail 039 to the Salmon River, then northwest on the unit boundary to Forest Service Trail 033, the point of beginning.

Hunt Area 20A-3—That portion of Unit 20A north and west of the following Forest Service trails: Beginning at the Salmon River on Forest Service Trail 033, then southwest on Trail 033 to Forest Service Trail 007, then southwest on Trail 007 to the south boundary of Unit 20A.

Hunt Area 21—All of Units 21 and 21A.

Hunt Area 25—All of Unit 25.

Hunt Area 26—That portion of Unit 26 on the north side of Big Creek downstream from, but excluding, the Smith Creek Drainage, and the south side of Big Creek downstream from, and including, the Little Marble Creek drainage.

Hunt Area 29—All of Units 29, 30, 30A and 37A.

Hunt Area 44 — That portion of Unit 44 east of the Fairfield-Couch Summit-Five Points Road, and all of Units 48 and 49.

Hunt Area 50—All of Unit 50.

Hunt Area 51—All of Unit 51.

Hunt Area 56—All of Units 56, 73, and 73A.

Hunt Area 58 — All of Unit 58.

Hunt Area 59—All of Units 59 and 59A.

Hunt Area 60—All of Unit 60.

Hunt Area 60A —That portion of Unit 60A south and east of the North Fork (Henrys Fork) of the Snake River, and that portion within one (1) mile north and west of the North Fork of the Snake River.

Hunt Area 61-1—That portion of Unit 61 west of East Dry Creek.

Hunt Area 61-2—That portion of Unit 61 east of East Dry Creek and west of U.S. Highway 191-20 and south and west of State Highway 87.

Hunt Area 61-3—That portion of Unit 61 north of State Highway 87 and that portion east of U.S. Highway 191-20 EXCEPT that portion enclosed by the Big Springs Loop Road and U.S. Highway 191-20.

Hunt Area 62—All of Unit 62.

Hunt Area 62A—All of Unit 62A.

Hunt Area 63 — All of Unit 63.

Hunt Area 63A —All of Unit 63A.

Hunt Area 64 —All of Unit 64.

Hunt Area 65—All of Unit 65.

Hunt Area 66-1—That portion of Unit 66 north of main Bear Creek EXCEPT the Pritchard and Garden Creek drainages.

Hunt Area 66-2—That portion of Unit 66 south of main Bear Creek.

Hunt Area 66A —All of Unit 66A.

Hunt Area 67-1—That portion of Unit 67 north and west of State Highway 31.

Hunt Area 67-2—That portion of Unit 67 south and east of State Highway 31.

Hunt Area 69-1—That portion of Unit 69 west of the Grays Lake-Long Valley-Bone-Iona Road.

Hunt Area 69-2—That portion of Unit 69 east of the Grays Lake-Long Valley-Bone-Iona Road EXCEPT the Antelope and Granite Creek drainages.

Hunt Area 69-3—That portion of Unit 69 within the Antelope and Granite Creek drainages, and that portion of Unit 66 within the Pritchard and Garden Creek drainages.

Hunt Area 70—All of Unit 70.

Hunt Area 71-1—That portion of Unit 71 located in Bannock and Bingham counties.

Hunt Area 71-2 —That portion of Unit 71 located in Caribou County.

Hunt Area 72—All of Unit 72.

Hunt Area 74—All of Unit 74.

Hunt Area 75 —All of Unit 75.

Hunt Area 76-1 —That portion of Unit 76 within the following boundary: Beginning at Soda Springs on State Highway 34, then northeast to the Lanes Creek Road at Wayan, then south along the Lanes Creek-Diamond Creek Road to Timber Creek Road, then northeast along Timber Creek-Smoky Canyon-Stump Creek Road to the Idaho-Wyoming state line, then south along the state line to the Crow Creek Road, then southwest along Crow Creek-Wells Canyon-Georgetown Canyon Road to U.S. 30, then north along U.S. Highway 30 to Soda Springs, the point of beginning.

Hunt Area 76-2 — That portion of Unit 76 south of the Georgetown-Wells Canyon-Crow Creek Road.

Hunt Area 76-3 —That portion of Unit 76 north and east of the following boundary: Beginning at the Idaho-Wyoming state line, then west along the Stump Creek-Smoky Canyon-Timber Creek Road to the Diamond Creek Road, then north along the Diamond Creek-Lanes Creek Road to State Highway 34 at Wayan.

Hunt Area 77—All of Unit 77.

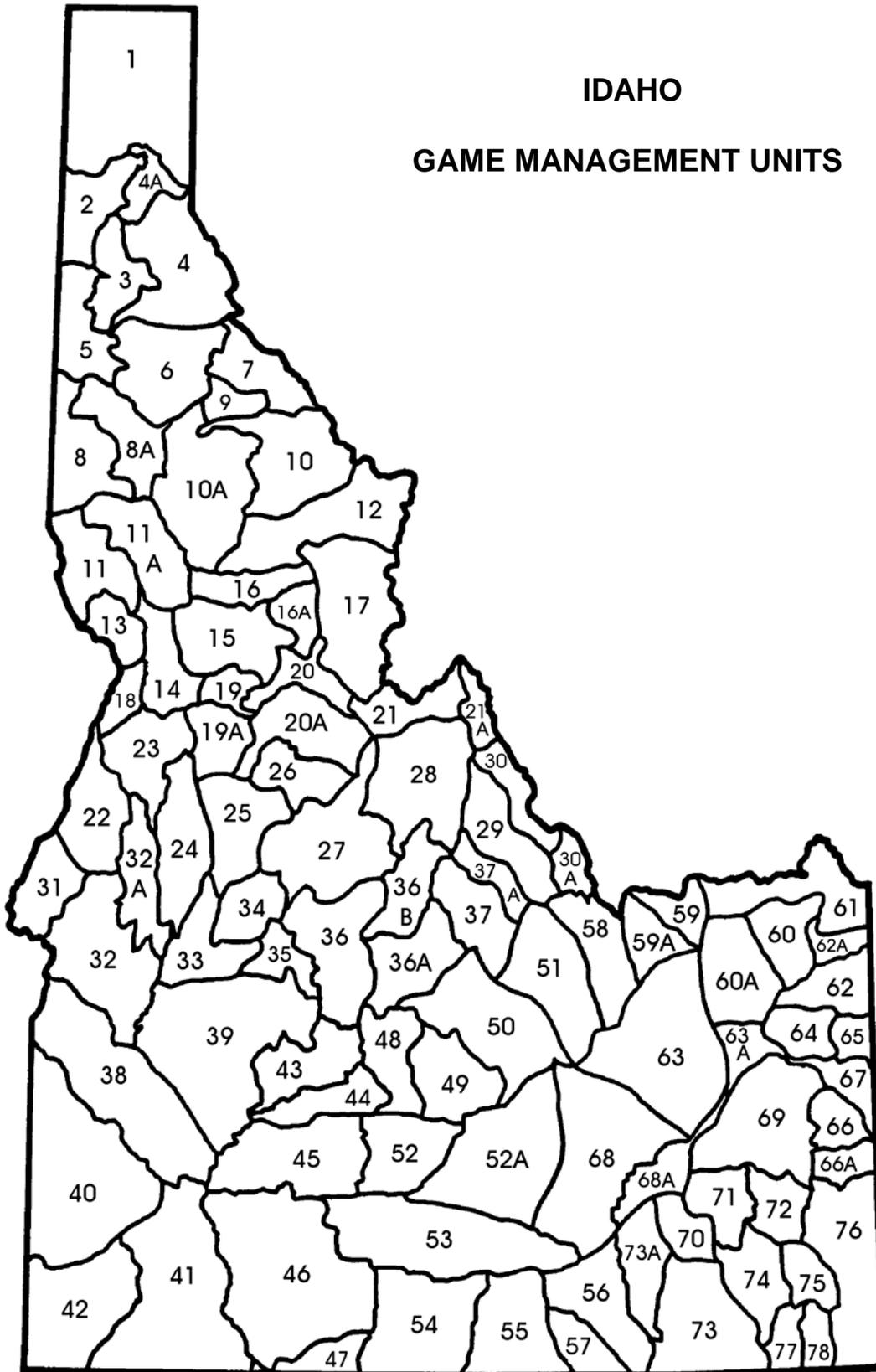
Hunt Area 78—All of Unit 78.



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IDAHO

GAME MANAGEMENT UNITS



FEDERAL AID IN WILDLIFE RESTORATION

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

