

**IDAHO DEPARTMENT OF FISH AND GAME**

**Cal Groen, Director**

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**Progress Report**



**MOOSE**

Study I, Job 6

July 1, 2007 to June 30, 2008

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**PROGRESS REPORT  
SURVEYS AND INVENTORY**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Moose Surveys and Inventories</u>
<b>PROJECT:</b>	<u>W-170-R-32</u>		
<b>SUBPROJECT:</b>	<u>1-7</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>5</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2007 to June 30, 2008</u>		

**STATEWIDE**

Moose populations in Idaho have greatly expanded their range and numbers in Idaho over the past few decades, moving westward into Washington and northeastern Oregon and southward into Utah. Although data on moose population size are difficult to obtain, it appears that moose populations in central Idaho Wilderness areas are declining as wolf populations expand. During the report period, several projects were conducted to assess population trends and age structure.

- a. A sightability survey was begun in GMU 1 to determine moose population status. The survey was started in early December and approximately 10 hours of helicopter survey were accomplished before unfavorable weather conditions forced the postponement and eventual cancellation of the survey.
- b. Known non-hunting moose mortalities were documented statewide. In the Panhandle Region, rail-way operators reported high rates of moose/train collisions in portions of the region impacted by extreme winter conditions and snow depth.
- c. Moose were counted incidental to elk sightability surveys statewide. Significantly, four hundred fifty-six (456) moose were counted incidental to elk and mule deer surveys (Unit 60A (328), Unit 62 (38), Unit 64 (38), Unit 50 (47), and Unit 69 (5)).

A total of 683 antlered moose were reported as harvested by 914 tag holders in fall 2007. The mean antler spread of harvested moose was 37 inches, based on animals measured during the mandatory check conducted statewide at regional offices, taxidermists, and contracted check points. Additional incisor teeth were collected in 2007 and submitted for age determination. Based on 871 reports received (no reports were received from 43 tag holders), harvest success on antlered moose averaged over 78% statewide.

In addition, 164 antlerless moose were harvested by the 232 tag holders in fall 2007. The hunter success rate of antlerless moose based on 201 reports received was nearly 82%.

Data on moose age and antler spread at harvest were analyzed to assist in the monitoring and evaluation of current and creation of new hunting seasons.

Moose continue to be one of Idaho's most desirable trophy species. Hunters are allowed to draw a permit to harvest only 1 antlered and 1 antlerless moose in their lifetime (except for those permits left over after the initial drawing, which do not apply to the lifetime limit). A total of

5,010 first-choice applications were received for the 914 permits for antlered moose in April 2008 for the fall 2008 hunting season, yielding overall drawing success of 18%. Among the 125 separate hunts identified, some were under-subscribed, resulting in 25 unfilled permits on the initial drawing. A total of 185 people applied for the 25 left-over permits, for 14% chance of obtaining a permit.

The majority of applicants for antlered moose permits were received from resident Idahoans (4,494, or 90% of the total); only 516 non-residents applied despite non-residents being able to draw up to 10% of the total number of permits offered. Of the 711 applicants for antlerless moose permits, 706 (99%) were received from residents. Only 1 antlerless permit was unfilled in the first drawing.

Although no transplants of moose were scheduled, 41 moose were relocated from near human habitation during winter to occupied moose habitat in the Upper Snake Region.

Necropsies were performed on 3 moose by veterinary staff, and another was tested for brucellosis during the report period.

**PROGRESS REPORT  
SURVEYS AND INVENTORY**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Moose Surveys and Inventories</u>
<b>PROJECT:</b>	<u>W-170-R-32</u>		
<b>SUBPROJECT:</b>	<u>1</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>6</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2007 to June 30, 2008</u>		

**PANHANDLE REGION**

**Units 1, 2, 3, 4, 4A, 5, 6, 7, 9**

**Controlled Hunt Areas 1-1, 1-2, 1-3, 1-4, 2, 3, 4, 4A, 5, 6, 7, 9**

**Abstract**

In 2007, an additional 67 moose permits were offered in the Panhandle Region bringing the total permits available to 352. Overall drawing odds for moose permits in the region were one in 6.9 applicants for the 2007 hunts. In 2007, 6 of 251 bulls harvested exceeded 50 inches in antler spread (2.3%). The average antler spread for harvested bull moose ( $n = 254$ ) was 37.1 inches. Success rates averaged 84% from 1997-2006 and was 80% in 2007. There were an estimated 158 non-controlled hunt moose mortalities reported during 2007.

**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 (Citizens Against Poaching) 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**

Open areas and extensive riparian areas that typify moose habitat elsewhere are not widespread in Panhandle Region. Moose in this region also often utilize closed-canopy timber stands with

interspersed shrub fields and creek bottoms. Presently, moose populations are steadily expanding in most areas of the Panhandle.

Historically, moose have been managed in Idaho for rapid population increases and long hunts with high success rates and a good opportunity to harvest a large-antlered bull. This conservative approach, coupled with a high demand for moose hunting, has led to poor odds for drawing a moose permit. In response, short 7-day hunts were initiated during fall 2005 to:

- a) provide hunters a choice for better drawing odds at the expense of season length and
- b) provide data on how success rates change with a short season.

Further modifications to the moose hunting season structure were initiated for the 2007 and 2008 seasons. The 86-day hunts in Units 1 and 2 were eliminated and replaced with a series of 14-day hunts (Table 4). In all other units, the 86-day hunts were offered in conjunction with a single 14-day hunt. These changes improved the overall drawing odds considerably with a slight decrease in hunter success rates (Table 1).

Hunters appear to like the new season structure with the exception of the elimination of the 86-day hunts in Units 1 and 2.

### **Population Surveys**

A helicopter survey for moose population estimation was initiated in Hunt Area 1-3 early in December but abandoned after only a few hours of flight time due to poor snow cover.

### **Harvest**

Moose hunting was authorized in all Panhandle units for the first time in 2007 (Table 2). In 2007, 5 antlered permits each were issued in Unit 4A and Unit 5. Three hundred and fifty-two moose permits were issued for the 2007 hunting season: 50 permits for antlered moose with an 86-day season (30 Aug-23 Nov), 262 permits for antlered moose with 6 different 14-day seasons (1-14 Sep; 15-28 Sep; 1-14 Oct; 15-28 Oct; 1-14 Nov; and 15-28 Nov), and 40 permits for antlerless moose with a 40-day season (15 Oct-23 Nov).

Two hundred eighty-three permit holders completed the mandatory report stating they were successful in harvesting a moose in 2007 for an overall success rate of 80% (Table 1). Within the same hunt area, permit holders for the 14-day hunts had a slightly higher success rate and a slightly lower mean antler spread than permit holders for the 86-day hunts (Table 3).

The opportunity to harvest a large bull moose is relatively good in Panhandle Region. Since 1985, 97 bulls have been checked with antler spreads of 50 inches or greater; of these, 37 have been during the past 3 years. In 2007, the percentage of bulls over 50 inches dropped from the previous year (2.3% in 2007 vs. 3.7% in 2006).

## **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 entirely under a permit system is moose, making drawing odds poor for moose.

In an attempt to address the complaint of hunters that it was too difficult to draw a moose permit, the Department conducted a trial 7-day hunt for 2005 and 2006 to provide an avenue for improving drawing odds. It was believed that relatively few hunters would opt for the shorter season, thus greatly improving drawing odds for those hunters who were interested in choosing better drawing odds at the expense of a shorter hunting season. It was also believed that success rates would diminish slightly with the shorter season, allowing the moose herd to support additional permits to be issued, which would further improve drawing odds.

Another modification of the shorter hunts was offered in 2007. A series of 6 14-day hunts were offered in Units 1 and 2 with the first hunt starting on 30 August and the last hunt starting on 15 November. This was another attempt to provide hunter opportunity and improve drawing odds. Drawing odds were significantly better for these 14-day hunts as compared to the traditional 86-day hunts (Table 5).

During the past 5 years, the number of moose applicants in the Panhandle Region has risen 43%, from 1,703 to 2,443, while moose permits have risen 60%. During 2007, there were 6.9 applicants per permit (Table 1). Antlered moose hunts with short seasons had much better drawing odds than longer seasons (Table 5). With the exception of 2007, the number of applicants has steadily increased over the past 5 years, indicating increased interest or awareness of the better drawing odds of the shorter hunts.

## **Other Mortalities**

Documented non-hunt moose mortalities have, at times, been a serious concern in the Panhandle Region (Table 6). In 1995, the number of illegal moose kills was nearly equal (76%) to the number of moose taken through permitted harvest. In 1996, heavy winter conditions and deep snows led to high levels of road/train kills across the region. While it appears that enforcement and educational efforts have led to fewer illegal kills in recent years, the harsh winter conditions during February and March of 2008 again led to high vehicle/train moose kills. It was reported that at least 75 moose of various age and sex were killed as a result of train collisions between Sandpoint and the Canadian border.

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 10 bull moose on ceded lands starting in 2002. Final tribal harvest is unknown at this time, but is estimated to be 10 animals based on prior success rates. Tribal harvest remains a negligible impact to moose herd dynamics in the Panhandle.

## **Management Implications**

An attempt was made beginning in 2001 to become less conservative in many of our moose hunts, particularly in Hunt Areas 1-1, 1-3, and 2. The overall drawing odds have improved to the point that an applicant now has a one in 6.9 chance of drawing a moose permit in the Panhandle Region. Success rates have remained high, mean antler spread has remained stable, and the number of days hunted by successful permit-holders has remained relatively unchanged. These observations are consistent with anecdotal information from hunters indicating the moose population in these areas has not decreased in size and large-antlered bulls are still available. It appears that the recent increase in permits did not result in a major influence on the moose population in these hunt areas.

The lack of moose population surveys is a serious handicap to moose management in Idaho. Consequently, permit levels continue to be set conservatively, based on anecdotal information and the perception of what is socially acceptable to the public. Although recent changes in the Panhandle Region have improved the situation, this conservative approach has produced poor drawing odds, the major complaint regarding moose management in Idaho.

Drawing odds were much better for the 14-day hunts than the 86-day hunts, providing an avenue for hunters willing to trade season length for improved odds. Hunters with the shorter hunts reported high satisfaction with the hunts during animal check-ins. It was hypothesized that the success rates for the shorter hunts would be lower than the longer hunts, allowing more hunters afield. The difference, however, was relatively minor. The success rates during the different time periods of these short hunts will be used to evaluate the practicality of continuing to offer these hunts and the possibility of adjusting permit levels based on success rates.

Table 1. Moose harvest and drawing odds, Panhandle Region, 1981-present.

Year	Permits	Harvest			Hunter 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
2004	236	188	14	202	86	2,088	1:8.8
2005	285	226	26	253	88	2,536	1:8.9
2006	285	215	22	237	83	2,878	1:10.1
2007	352	251	32	283	80	2,443	1:6.9

Table 2. Moose harvest and drawing odds by Game Management Unit, Panhandle Region, 1997-present.

Unit	Year	Permits	Harvest		Hunter success (%)	Days/hunter	First-choice applicants	Drawing odds
			M	F				
1	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
	2004	171	131	10	82	7.2	1,185	1:6.9
	2005	170	145	18	96	8.9	1,220	1:7.2
	2006	170	139	15	90	8.1	1,316	1:7.7
	2007	218	147	17	75	8.7	1,053	1:4.8
2	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
	2004	25	17	4	84	5.5	287	1:11.5
	2005	35	25	8	94	6.0	309	1:12.4
	2006	35	25	7	91	6.5	385	1:15.4
2007	44	25	15	91	6.9	334	1:7.6	
3 & 4	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
	2004	5	5	0	100	6.8	66	1:13.2
	2005	10	11 <sup>a</sup>	0	100	4.9	83	1:8.3
	2006	10	10	0	100	3.9	114	1:11.4
2007	20	19	0	95	7.2	122	1:6.1	
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
	2004	10	8	0	80	9.9	175	1:17.5
	2005	15	15	0	100	4.0	229	1:15.3
	2006	15	13	0	87	8.1	247	1:16.5
	2007	20	20	0	100	8.2	333	1:16.7

Table 2. Continued

Unit	Year	Permits	Harvest		Hunter success (%)	Days/hunter	First-choice applicants	Drawing odds	
			M	F					
4A	2007	5	2	0	40	3.0	20	1:4.0	
5	2007	5	5	0	100	7.3	163	1:32.6	
6	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	
	2004	10	8	0	80	9.9	233	1:23.3	
	2005	15	14	0	93	6.4	275	1:18.3	
	2006	15	13	0	87	6.9	334	1:22.3	
	2007	20	20	0	100	7.2	292	1:14.6	
	7	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	
2004		10	8	0	80	4.1	86	1:8.6	
2005		10	8	0	80	4.7	112	1:11.2	
2006		10	7	0	70	12.0	97	1:9.7	
9	2007	10	9	0	90	6.9	70	1:7.0	
	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	
	2004	5	5	0	100	8.0	56	1:11.2	
	2005	10	9	0	90	5.8	54	1:5.4	
	2006	10	8	0	80	4.4	69	1:6.9	
	2007	10	9	0	90	6.9	56	1:5.6	

<sup>a</sup> Includes one Supertag harvest.

Table 3. Comparison of moose harvest and mean antler spread with 86-day and 14-day seasons by Hunt Area, Panhandle Region, 2007.

Season length	Hunt number	Hunt area	Permits issued	Number harvest	Success rate (%)	Mean antler spread
86 days	3031	3	10	9	90	33.9
	3033	4	10	10	100	41.1
	3037	6	10	10	100	42.1
	3039	7	5	3	60	37.5
	3043	9	5	5	100	36.2
	86-day hunts combined			40	37	93
14 days	3032	3	10	10	100	39.8
	3034	4	10	10	100	35.5
	3038	6	10	10	100	39.3
	3040	7	5	5	100	36.2
	3044	9	5	5	100	37.8
	7-day hunts combined			40	40	100

Table 4. Comparison of moose harvest and mean antler spread between two week hunt intervals in Units 1 & 2, Panhandle Region, 2007.

Season dates	Permits issued	Number harvested	Success rate (%)	Mean antler spread
September 1-14	37	27	64.9	35.7
September 15-28	37	29	78.4	37.1
October 1-14	37	29	78.4	36.6
October 15-28	37	31	83.8	36.8
November 1-14	37	27	73.0	34.9
November 14-28	37	28	75.7	37.0

Table 5. Differences between hunt types and season lengths for moose, Panhandle Region, 2005-present.

Year	Hunt type	Season length (days)	Permits	First choice drawn	First choice applicants	Applicants per permit
2005	Antlered	86	200	200	2,200	11.0
	Antlered	7	55	46	82	1.5
	Antlerless	40	30	30	254	8.5
2006	Antlered	86	200	200	2,408	12.0
	Antlered	7	55	55	254	4.6
	Antlerless	40	30	30	216	7.2
2007	Antlered	86	50	50	924	18.5
	Antlered	14	262	261	1,251	4.8
	Antlerless	40	40	40	268	6.7
2008	Antlered	86	50	50	913	18.3
	Antlered	14	262	259	1,192	4.6
	Antlerless	40	40	40	247	6.2

Table 6. Known moose mortalities, excluding controlled hunts, Panhandle Region, 1992-present.

Year	Mortality agent						Total
	Native American 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 <sup>a</sup>	15	20	0	0	0	45
2003	10 <sup>a</sup>	20	1	0	0	1	32
2004	10 <sup>a</sup>	12	2	1	0	0	25
2005	10 <sup>a</sup>	10	7	0	0	2	59 <sup>b</sup>
2006	10 <sup>a</sup>	4	7	0	0	2	52 <sup>c</sup>
2007	10 <sup>a</sup>	5	42	22	76 <sup>d</sup>	3	158

<sup>a</sup> Estimate. The Coeur d'Alene Indian Tribe issued 10 bull moose permits on ceded lands during 2002-2007. Final tribal harvest not available for 2002-present.

<sup>b</sup> Consists of 30 estimated moose mortalities for which BGMRs were not completed.

<sup>c</sup> Consists of 29 estimated moose mortalities for which BGMRs were not completed.

<sup>d</sup> Estimate. Reports from rail-road personnel for which BGMRs were not completed.

**PROGRESS REPORT  
SURVEYS AND INVENTORY**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Moose Surveys and Inventories</u>
<b>PROJECT:</b>	<u>W-170-R-32</u>		
<b>SUBPROJECT:</b>	<u>2</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>6</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2007 to June 30, 2008</u>		

**CLEARWATER REGION**

**Units 8, 8A, 10, 10A, 12, 14, 15, 16, 16A, 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**

**Abstract**

Based upon mandatory harvest report data, Clearwater Region hunters harvested 130 antlered moose in 40 antlered-only controlled hunts and an additional 7 antlerless moose in 2 controlled hunts for antlerless moose in 2007. A total of 250 (242 antlered, 8 antlerless) permits were available across the region for a total harvest success rate of 55%. Antlered and antlerless success rates were 54% and 88%, respectively. Drawing odds ranged from 1:1.0 (Hunt Areas 12-4, 17-2, 17-4, 17-5, 20-1, 20-2, and 20-4) to 1:16.1 (Hunt Area 8A). The mean antler spread for the 130 antlered moose harvested in the region in 2007 was 37.0 inches with a range of 21 to 54 inches. Cumulative drawing odds for antlered-only hunts in the region were 1:3.6 in 2007.

**Management Direction**

Moose populations will be allowed to increase in units where habitat conditions will support expansion. Legal harvest will continue to be focused on antlered bulls. Antlerless moose hunting opportunity will be continued in those areas where population control measures are considered desirable. 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 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.

Historically, moose were hunted through controlled hunts on a bulls-only basis; however, in 1999, 2 antlerless moose hunts (Hunt 8-2 with 4 permits and Hunt 8A-2 also with 4 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 hunts (Appendix A). 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 2 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. Effects of the recent expansion of wolves on moose populations within the region are 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.

A sightability survey of moose in Unit 15 was attempted in 2000. Results were unsatisfactory because of overly-large confidence intervals. These results were due to the extreme correction factors applied to animals detected under heavy canopy coverage classes. During model development, only 4 moose were encountered in cover greater than 70%.

### **Harvest Characteristics**

Harvest levels, hunter success, and hunter days expended for 2007 were determined from mandatory harvest reports (Tables 1 and 2). Hunt areas in Units 12, 15, and 17 were combined and/or renamed in 2001 and 1 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 in 2001 and an additional 20 permits in 2005. The 250 moose permits that were available in 2007 resulted in a reported harvest of 130 antlered moose and 7 antlerless moose. Mortality reports from some permittees were unaccounted for and were not used in calculating hunter success. The 2007 cumulative success rate (55%) was slightly lower than the average (60%) for the past 5-year period (2002-2006). Success rates for antlered

and antlerless moose were 54% and 88%, respectively. Drawing odds ranged from 1:1.0 (Hunt Areas 12-4, 17-2, 17-4, 17-5, 20-1, 20-2, and 20-4) to 1:16.1 (Hunt Area 8A).

Reported moose mortalities due to methods other than legal harvest during controlled hunts have varied considerably by year (Table 3). It is likely that the level of mortality is considerably higher than reported.

The mean antler spread for the 130 antlered moose harvested in the region in 2007 was 37.0 inches with a range of 21 to 54 inches. Cumulative drawing odds for 2007 antlered-only hunts in the region were 1:3.6.

### **Climatic Conditions**

The Clearwater Region experienced above normal snow pack for the water year of 2007-2008 according to Natural Resources Conservation Service Idaho Basin Outlook Report. The Clearwater River Basin was 143% of the 30-year average of snow water (Oct - Jun), with the total precipitation percent of average at 108%. Snow depth was well above average for the basin with early snowfall at higher elevations. A cool spring slowed snowmelt and runoff. Meanwhile, the Salmon River Basin averaged 120% of snow water with a total precipitation percent of average at 105%. Snowfall was heavy throughout the winter in the region, coupled with a cool spring with below average precipitation in the form of rain, which resulted in the snow being slow to melt.

### **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 by 22 in Clearwater Region in 2001 and by an additional 20 permits in 2005.

All areas need more intensive work to determine population levels, trends, and habitat selection and use. Some moose populations appear to be increasing and seem to respond favorably to extensive habitat alteration by silvicultural 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 Native American harvest. Additionally, the effects of the recent expansion of wolves across the region on moose populations is yet undetermined.

Table 1. Moose harvest and drawing odds, Clearwater Region, 1990-present.

Year	Permits	Harvest			Hunter 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	151	8	159	59	813	1:3.0
2003	270	156	6	162	60	798	1:3.0
2004	270	150	7	157	58	891	1:3.3
2005	250	152	8	160	64	964	1:3.9
2006	250	144	7	151	60	943	1:3.8
2007	250	130	7	137	55	938	1:3.8

Table 2. Moose harvest and drawing odds by Game Management Unit, Clearwater Region, 1998-present.

Hunt area	Year	Permits	Harvest		Hunter success (%)	Days/hunter <sup>a</sup>	First-choice applicants	Drawing odds
			M	F				
8	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
	2004	10	6	4	100	4.2	54	1:5.4
	2005	12	8	4	100	12.0	66	1:5.5
	2006	12	7	4	92	8.3	73	1:6.1
	2006	12	7	4	92	8.3	73	1:6.1
	2007	12	7	4	92	6.5	98	1:8.2
8A	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	3	90	11.3	113	1:11.3
	2004	10	6	4	100	6.8	105	1:10.5
	2005	12	8	4	100	8.2	138	1:11.5
	2006	12	7	3	83	10.4	142	1:11.8
	2006	12	7	3	83	10.4	142	1:11.8
	2007	12	8	3	92	7.7	169	1:14.1
10	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	0	71	6.4	82	1:2.9
	2004	28	21	0	75	3.9	105	1:3.8
	2005	32	21	0	66	7.8	100	1:3.1
	2006	32	20	0	63	9.2	112	1:3.5
	2006	32	20	0	63	9.2	112	1:3.5
	2007	32	25	0	78	5.7	113	1:3.5
10A	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	8.9	140	1:4.4
	2004	32	25	0	78	9.4	145	1:4.5
	2005	34	32	0	94	7.6	148	1:4.4
	2006	34	26	0	76	7.6	172	1:5.1
	2006	34	26	0	76	7.6	172	1:5.1
	2007	34	31	0	91	11.8	191	1:5.6

Table 2. Continued.

Hunt area	Year	Permits	Harvest		Hunter success (%)	Days/hunter <sup>a</sup>	First-choice applicants	Drawing odds
			M	F				
12	1998 <sup>b</sup>	64	27	0	42	5.6	172	1:2.7
	1999 <sup>b</sup>	61	29	0	48	6.0	191	1:3.1
	2000 <sup>b</sup>	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	27	0	58	6.7	75	1:1.7
	2004	45	22	0	49	5.6	87	1:1.9
	2005	43	20	0	47	6.9	73	1:1.7
	2006	43	23	0	53	8.5	70	1:1.6
2007	43	18	0	42	9.0	73	1:1.7	
14	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
	2002	13	11	0	85	5.3	120	1:9.2
	2003	13	11	0	85	4.6	121	1:9.3
	2004	13	11	0	85	8.2	114	1:8.8
	2005	13	11	0	85	10.0	114	1:8.8
	2006	13	10	0	77	10.4	92	1:7.1
2007	13	8	0	62	6.5	71	1:5.5	
15	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
	2004	60	37	0	62	7.1	186	1:3.1
	2005	45	30	0	67	8.4	155	1:3.4
	2006	45	25	0	55	12.4	143	1:3.2
2007	45	20	0	44	11.1	117	1:2.6	
16	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
	2004	17	10	0	59	4.8	47	1:2.8
	2005	12	8	0	67	6.3	55	1:4.6
	2006	12	6	0	50	5.7	37	1:3.1
2007	12	9	0	75	8.2	38	1:3.2	
16A	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	4.0	8	1:1.1
	2004	7	5	0	71	16.8	12	1:1.7

Table 2. Continued.

Hunt area	Year	Permits	Harvest		Hunter success (%)	Days/hunter <sup>a</sup>	First-choice applicants	Drawing odds
			M	F				
17	2005	7	5	0	71	8.0	13	1:1.9
	2006	7	4	0	57	10.7	9	1:1.3
	2007	7	1	0	14	30.0	18	1:2.6
	1998	35	4	0	11	4.3	26	1:1.0
	1999	35	11	0	31	4.5	55	1:1.6
	2000 <sup>b</sup>	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
	2004	22	7	0	32	10.3	16	1:1.0
19	2005	18	5	0	28	3.8	22	1:1.2
	2006	18	6	0	33	6.5	13	1:1.0
	2007	18	0	0	0	ND	18	1:1.1
	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
	2002	12	4	0	33	5.0	6	1:1.0
	2003	12	6	0	50	10.7	14	1:1.2
	2004	12	3	0	25	12.5	40	1:3.3
20	2005	12	1	0	8	5.0	18	1:1.5
	2006	12	8	0	66	4.9	19	1:1.6
	2007	12	0	0	0	ND	19	1:1.6
	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	2	0	14	7.0	10	1:1.0
	2004	14	2	0	14	16.5	9	1:1.0
	2005	10	3	0	30	17.5	8	1:1.0
	2006	10	2	0	20	12.0	12	1:1.2
	2007	10	3	0	30	4.0	11	1:1.1

<sup>a</sup> Data from successful hunters only.

<sup>b</sup> Some permits not sold.

Table 3. Known moose mortalities, excluding controlled hunts, Clearwater Region, 1979-present.

Year	Mortality agent					Total
	Native American harvest	Illegal kill	Road kill	Natural	Other	
1979	4	9	4	0	0	17
1980	4	19	3	0	0	26
1981	1	13	4	0	0	18
1982	11	21	0	0	0	32
1983	13	25	5	0	0	43
1984	10	19	4	0	0	33
1985	6	15	4	0	0	25
1986	18	14	7	0	0	39
1987	2	13	11	0	0	26
1988	0	0	0	0	0	0
1989	4	17	7	0	0	28
1990	13	11	1	0	0	25
1991	15	21	3	0	0	39
1992	10	33	5	6	4	58
1993	7	31	5	0	2	45
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
2004	0	7	2	2	1	12
2005	2	7	6	2	0	17
2006	0	2	0	2	1	5
2007	1	2	1	0	1	5

**PROGRESS REPORT  
SURVEYS AND INVENTORY**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Moose Surveys and Inventories</u>
<b>PROJECT:</b>	<u>W-170-R-32</u>		
<b>SUBPROJECT:</b>	<u>3</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>6</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2007 to June 30, 2008</u>		

**SOUTHWEST REGION**

**Units 19A, 20A, 25, 26**

**Controlled Hunt Areas 19A, 20A-1, 20A-2, 25, 26**

**Abstract**

Two moose were harvested in Hunt Area 19A and no moose were harvested in Hunt Areas 20A and 25 in 2007. The average greatest antler spread for antlered moose ( $n = 2$ ) was 46.75 inches. No population trend or herd composition surveys were conducted in Units 19A, 20A, 25, or 26 during the reporting period. The Unit 26 hunt was eliminated after the 2006 harvest season.

**Management Direction**

Management will be consistent with the statewide management direction delineated in the 1991-1995 Moose Management Plan.

**Background**

Moose observations had been increasing in Units 19A, 20A, 25, and 26. As a result, a 2-permit hunt was initiated in Unit 20A in 1983. Further increases in moose sightings led to subdivision of the unit in 1995 into 3 hunt areas, 20A-1, 20A-2, and 20A-3, consisting of 2, 3, and 2 permits, respectively. This increase in moose observations also led to the establishment of a 2-permit hunt in Unit 26 in 1997. Consequently, 2 new hunts, Hunt Areas 19A and 25, were created in 1999 consisting of 2 permits each. Since then, moose sightings and activity appear to have declined. As a result, the 3 hunt areas in Unit 20A were combined into 2 new hunt areas with 2 permits in each area for the 2005-2006 regulation cycle. These hunt areas were combined into one hunt area (20A) for the 2007-2008 regulation cycle.

**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 (Appendix A). Harvest data are generated through a mandatory hunter report requirement. Two antlered moose were harvested by the 2 permit holders in Hunt Area 19A in 2007 (Table 1). No moose were harvested in Hunt Areas 20A and 25 in 2007. Overall success rate was 33% for permit holders in these 3 hunt areas combined (Table 2). Average antler spread of moose harvested was 46.75 inches in Unit 19A in 2007.

## **Management Implications**

Because reliable population data are not available and difficult to generate, permit levels have been conservative. The frequency and location of reports indicated pioneering populations existed in game management units adjacent to or near Units 20A and 26 (e.g., 19A, 24, 25). Two moose hunts with 2 permits each were implemented in Units 19A (Hunt Area 19A) and 25 (Hunt Area 25) in 1999. Several years of poor or no hunter success in Unit 26 may indicate moose numbers have declined. The most vulnerable moose may have been harvested, making hunting more difficult. There may also be effects of predation on animals in these areas. This hunt was eliminated from the 2007-2008 regulation cycle. All areas need intensive data collection to determine population levels, trends, and habitat selection.

Table 1. Moose harvest and drawing odds by hunt area, Southwest Region, 1997-present.

Hunt area	Year	Permits	Harvest		Hunter success (%)	Days/hunter	First-choice applicants	Drawing odds
			M	F				
19A <sup>a</sup>	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
	2004	2	1	0	50		32	1:16
	2005	2	2	0	100		17	1:8.5
	2006	2	1	0	50		15	1:7.5
	2007	2	2	0	100		17	1:8.5
20A	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 <sup>b</sup>	7	2	0	29	15.0	19	1:2.7
	2001 <sup>c</sup>	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
	2004	7	1	0	14		7	1:1.0
	2005	4	0	0	0		19	1:4.8
25 <sup>a</sup>	2006	4	3	0	75		10	1:2.5
	2007	2	0	0	0		10	1:5.0
	1999	2	2	0	100	8.5	38	1:19.0
	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
	2004	2	1	0	50		31	1:15.5
	2005	2	1	0	50		14	1:7.0
2006	2	2	0	100		15	1:7.5	
2007	2	0	0	0		14	1:7.5	

<sup>a</sup> Hunt established in 1999.

<sup>b</sup> Three permit holders opted for a rain-check tag in 2001.

<sup>c</sup> Includes 3 rain-check tag recipients from the 2000 hunting season.

Table 2. Moose harvest and drawing odds, Southwest Region, 1983-present.

Year	Permits	Harvest			Hunter success (%)	First-choice applicants	Drawing odds
		M	F	Total			
1983	2	1	0	1	50	28	1:14.0
1984	4	3	0	3	75	49	1:12.3
1985	2	2	0	2	100	29	1:14.5
1986	2	2	0	2	100	14	1:7.0
1987	2	1	0	1	50	9	1:4.5
1988	2	2	0	2	100	14	1:7.0
1989	2	1	0	1	50	9	1:4.5
1990	2	2	0	2	100	21	1:10.5
1991	2	2	0	2	100	22	1:11.0
1992	2	1	0	1	50	18	1:9.0
1993	2	1	0	1	50	18	1:9.0
1994	2	1	0	1	50	41	1:20.5
1995	7	7	0	7	100	38	1:18.4
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 <sup>a</sup>	13	4	0	4	31	50	1:3.8
2001 <sup>b</sup>	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
2004	13	3	0	3	23	78	1:6.0
2005	10	3	0	3	30	58	1:5.8
2006	10	6	0	6	60	41	1:4.1
2007	6	2	0	2	33	41	1:6.8

<sup>a</sup> Three permit holders opted for a rain-check tag in 2001.

<sup>b</sup> Includes 3 rain-check tag recipients from the 2000 hunting season.

**PROGRESS REPORT  
SURVEYS AND INVENTORY**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Moose Surveys and Inventories</u>
<b>PROJECT:</b>	<u>W-170-R-32</u>		
<b>SUBPROJECT:</b>	<u>4</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>6</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2007 to June 30, 2008</u>		

**MAGIC VALLEY REGION**

**Units 43, 44, 48, 49, 56**

**Controlled Hunt Areas 44, 48, 56**

**Abstract**

Legal harvest was authorized in Magic Valley Region for the first time in 1999 in Unit 56. Beginning fall 2001, antlered harvest was authorized in Units 44, 48, and 49. A total of 15 permits were issued in 2007 for the 3 hunt areas, and 9 hunters were successful (60%).

**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 Magic Valley Region, but there were no viable, resident populations. In recent years, moose numbers in the region have increased as a result of good reproduction, natural ingress, and transplants. 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 Boise River in Unit 43, Willow Creek in Unit 44, Big Wood River in Unit 48, and in the Trail Creek drainage on the border of Units 48-49. Initially, the increase in moose numbers in Unit 48 was primarily the result of movement of moose from Unit 50, but natural reproduction is likely the key contributor to recent increases in the moose population. Thirty-one moose were released in Units 43 and 44 between 1986 and 2000; these transplants probably initiated the increase in the moose population in these units. Populations in the Sublett area (Unit 56) appear to be stable and observations are

common. Although there is currently no legal moose harvest in Units 54, 55, and 57, observations of moose in these units have been increasing in recent years.

### **Harvest Characteristics**

Hunting season length for antlered moose in the 3 hunt areas in Magic Valley Region was 86 days in 2007 (Appendix A). Four antlered permits were offered in Hunt Area 44. The boundary of Hunt Area 44 was changed prior to the 2005 hunting season to include portions of Units 44 and 48. Three bulls were harvested in Unit 48 (Table 1). A hunt with 2 antlered permits was offered in Hunt Area 48, which includes all of Unit 49 and part of Unit 48. No bulls were harvested in Hunt Area 48 during the reporting period. Five antlered permits were again offered in Hunt Area 56 (includes Units 56, 73, and 73A). Five bulls were harvested, with 2 taken in Unit 56 and 3 taken in Unit 73 (Table 1).

Antlerless hunts were offered in Hunt Areas 44 and 48. These hunts offered two permits each and a season length of 40 days. One cow moose was harvested in Unit 48 (Hunt Area 44) during the 2007 hunting season. No other moose mortalities were reported in the region during the reporting period.

Other sources of moose mortality are illegal, Native American harvest, natural, road-kills, and other. For the 2007-2008 reporting period, no non-harvest mortalities were reported. Reporting of non-hunting mortalities is believed to be much lower than the actual number.

### **Capture and Translocation**

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

### **Management Implications**

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

The Big Wood River moose population (Units 48 and 49) has continued to expand over the past several years. The population likely has potential for additional growth; however, social conflicts may increase as the population continues to grow in this suburban environment. Currently, human-moose conflicts in the Big Wood River Valley are minimal, and public support remains strong for moose population expansion in this area.

Table 1. Moose harvest and drawing odds by hunt area, Magic Valley Region, 1999-present.

Hunt area	Year	Permits	Harvest		Hunter success (%)	Days/hunter	First-choice applicants	Drawing odds
			M	F				
44 <sup>a</sup>	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
	2004	4	4	0	100	7.7	20	1:5.0
	2005	6	2	0	33	6.5	13	1:2.2
	2006	6	1	2	50	6.5	21	1:3.5
	2007	6	3	1	67	3.5	10	1:1.7
48 <sup>b</sup>	2005	4	2	2	100	6.3	8	1:2.0
	2006	4	1	2	75	4.5	9	1:2.3
	2007	4	0	0	0		6	1:1.5
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
	2004	5	5	0	100	5.6	44	1:8.8
	2005	5	5	0	100	12.3	46	1:9.2
	2006	5	5	0	100	4.5	42	1:8.4
2007	5	5	0	100	7.8	73	1:14.5	

<sup>a</sup> Hunt established in 2001; includes portions of Units 44 and 48.

<sup>b</sup> Hunt established in 2005; includes all of Unit 49 and a portion of Unit 48.

**PROGRESS REPORT  
SURVEYS AND INVENTORY**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Moose Surveys and Inventories</u>
<b>PROJECT:</b>	<u>W-170-R-32</u>		
<b>SUBPROJECT:</b>	<u>5</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>I</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>6</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2007 to June 30, 2008</u>		

**SOUTHEAST REGION**

**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**

**Abstract**

The number of moose permits available were significantly reduced in 2005; 95 antlered-only and 65 antlerless-only permits were offered in 2006. This was a 39% reduction from 2004 antlered permit levels and a 7% reduction from 2004 antlerless permit levels. Mandatory harvest reports identified a total of 80 antlered (84% hunter success) and 39 antlerless (60% hunter success) moose harvested. The average outside antler spread was 35.4 inches for 75 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.

**Management Direction**

Management direction for moose in 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 Southeast Region to justify harvest. The first hunt for moose in the region was held in 1959 when 5 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 1975-1990. 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 Southeast Region during the reporting period. Moose aerial surveys were conducted in 2 units in 2002. During January 2002, search units were flown in Hunt Areas 66A and 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 ( $\pm 31$ ) total moose including 105 ( $\pm 15$ ) cows, 75 ( $\pm 18$ ) bulls, and 39 ( $\pm 9$ ) calves were generated using the Hiller-Soloy 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 10 search units were flown for sightability. One hundred three moose were counted in these 10 search units consisting of 41 cows, 48 bulls, and 14 calves (Table 1). Estimates of 174 ( $\pm 40$ ) total moose including 71 ( $\pm 20$ ) cows, 78 ( $\pm 20$ ) bulls, and 25 ( $\pm 8$ ) calves were generated using the Hiller-Soloy 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**

Permit levels (Tables 2 and 3) for 2007 were the same as 2006. One hundred sixty permits (95 antlered and 65 antlerless) were issued. Minimum reported harvest was available through a mandatory mortality report of successful hunters. Reported harvest totaled 119; 80 antlered and

39 antlerless moose (Tables 2 and 3). Average antler spread for Southeast Region was 35.4 inches.

Minimum overall hunter success rate for the region was 74%; 60% for antlerless-only permits and 84% for antlered-only permits.

Other sources of moose mortality are illegal, Native American harvest, natural, road-kills, and other. For the 2007-2008 reporting period, 7 non-harvest mortalities were reported (Table 4). Reporting of non-hunting mortalities is believed to be much lower than the actual number.

### **Climatic Conditions**

Winter 2006-2007 snow depths were below the 30-year average, with snow levels at 60-80% of average in most drainages. Average temperature during 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.

Moose translocations and hazing activities are expanding to include the entire year rather than spring and early summer. During the year, an average of 5-30 moose wander into the city of Pocatello and surrounding communities. These are nearly always yearlings or 2-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, USA.

Table 1. Total observed moose by sex/age class and model estimates of moose from aerial surveys, Southeast Region, 1991-2002.

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. Moose harvest and drawing odds, Southeast Region, 1984-present.

Year	Permits	Harvest			Hunter success (%)	First-choice applicants	Drawing odds
		M	F	Total			
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
2004	225	129	31	160	71	737	1:3.1
2005	160	75	41	116	73	736	1:4.6
2006	160	81	40	121	76	647	1:4.0
2007	160	80	39	119	74	715	1:4.5

Table 3. Moose harvest and drawing odds by hunt area, Southeast Region, 1998-present.

Hunt area	Year	Permits	Harvest		Hunter success (%)	Days/hunter	First-choice applicants	Drawing odds
			M	F				
66A	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
	2004	45	30	7	82	6.5	197	1:4.8
	2005	25	15	8	92	4.1	188	1:7.5
	2006	25	14	9	92	4.5	176	1:7.0
70	2007	25	10	6	64	7.2	170	1:6.8
	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
	2004	5	5	0	100	5.8	34	1:3.0
	2005	5	4	0	80	10.0	47	1:9.4
	2006	5	5	0	100	3.6	68	1:13.6
71	2007	5	5	0	100	10.5	75	1:15.0
	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 <sup>a</sup>	20	7	3	50		25	1:1.3
	2003 <sup>a</sup>	20	9	6	75	7.5	23	1:1.2
	2004	20	8	3	55	4.1	34	1:1.2
	2005	20	6	3	45	8.0	34	1:1.2
	2006	20	8	6	70	8.2	36	1:1.8
72	2007	20	8	7	75	2.5	45	1:2.3
	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
	2004	5	5	0	100	6.8	27	1:6.8
	2005	5	5	0	100	5.6	27	1:6.8
	2006	5	5	0	100	15.6	33	1:6.6
74	2007	5	4	0	80	11.8	34	1:6.6
	1998	5	3	0	60	12.0	25	1:5.0
	1999	5	2	0	40	4.3	19	1:3.8
	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
	2004	5	3	0	60	13.7	17	1:4.8

Table 3. Continued.

Hunt area	Year	Permits	Harvest		Hunter success (%)	Days/hunter	First-choice applicants	Drawing odds
			M	F				
75	2005	5	5	0	100	6.0	22	1:4.4
	2006	5	4	0	80	10.5	21	1:5.3
	2007	5	5	0	100	10.4	23	1:4.6
	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 <sup>a</sup>	15	9	3	80	6.8	31	1:2.1
	2004	15	9	3	80	8.1	36	1:2.1
76	2005	10	3	3	60	10.0	30	1:3.0
	2006	10	4	4	80	5.4	42	1:4.2
	2007	10	5	3	80	3.6	26	1:2.6
	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 <sup>a</sup>	105	57	21	74		329	1:3.1
	2003	110	51	30	74	6.2	323	1:2.9
	2004	110	51	18	63	6.9	321	1:2.9
77	2005	70	28	20	69	4.8	335	1:4.8
	2006	70	28	14	60	6.3	211	1:3.0
	2007	70	32	15	78	6.7	290	1:4.1
	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
	2004	10	9	0	90	5.4	20	1:2.3
78	2005	10	5	3	80	11.4	23	1:2.3
	2006	10	5	5	100	6.1	34	1:3.4
	2007	10	5	3	80	6.7	28	1:2.8
	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
	2004	10	9	0	90	8.2	51	1:1.3
	2005	10	4	4	80	20.3	30	1:3.0
	2006	10	5	2	70	4.4	26	1:2.6
	2007	10	5	4	90	5.5	24	1:2.4

<sup>a</sup> Applicants and drawing odds for antlered hunts only.

Table 4. Known moose mortalities, excluding controlled hunts, Southeast Region, 1993-present.

Year	Mortality agent						Total
	Native American harvest	Illegal kill	Road kill	Natural	Train kill	Other	
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
2004	0	0	2	1	0	0	3
2005	0	1	2	0	0	0	3
2006	0	0	1	3	0	0	4
2007	0	1	1	5	0	0	7

**PROGRESS REPORT  
SURVEYS AND INVENTORY**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Moose Surveys and Inventories</u>
<b>PROJECT:</b>	<u>W-170-R-32</u>		
<b>SUBPROJECT:</b>	<u>6</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>I</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>6</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2007 to June 30, 2008</u>		

**UPPER SNAKE REGION**

**Abstract**

Hunting season lengths for antlered and antlerless moose remained at 86 days (30 Aug-23 Nov) and 40 days (15 Oct-23 Nov), respectively, in 2007. Permits remained the same for 2007 but numbers were reduced significantly from 2004 to 2005. Twenty-one controlled hunts with 235 permits were offered for antlered moose and 20 controlled hunts with 115 permits were offered for antlerless moose in the Upper Snake Region in 2007 (Table 1). This is a 30% reduction from 2004 antlered permit levels and a 14% reduction from 2004 antlerless permit levels. A total of 203 antlered (86% hunter success) and 76 antlerless (66% success) moose were harvested in 2007 as determined by mandatory harvest reports. The mean antler spread for all antlered hunts combined was 36.5 inches ( $n = 193$ ). Overall drawing odds for antlered hunts were 1:5.3 and ranged from 1:1.8 (Hunt Areas 51 and 63) to 1:17.6 (Hunt Area 50). Overall drawing odds for antlerless hunts were 1:2.3 and ranged from 1:1.0 (Hunt Area 62) to 1:4.8 (Hunt Area 69-2). Drawing odds for antlerless hunts nearly guaranteed a tag for first-choice applicants in many hunts. These odds represent a significant decrease in the chance of drawing a tag due to the cuts in permit numbers in recent years.

Other sources of moose mortality are illegal, Native American harvest, natural, road-kill, train-kill and other. For the 2007-2008 reporting period, 13 non-harvest mortalities were reported for the Upper Snake Region (Table 2) including 1 illegal, 9 winter kills, 1 road-kill, and 2 other.

No population surveys were conducted specifically for moose during this reporting period due to fiscal constraints. However, 47 moose were counted incidental to the Unit 50 elk survey and a total of 409 were counted incidental to winter mule deer surveys (328 in Unit 60A, 38 in Unit 62, 38 in Unit 64, and 5 in Unit 69).

Sportsmen and field personnel expressed concerns that trophy bull moose have become scarce in the Upper Snake Region. These concerns were examined and addressed for the 2005-2006 trophy species season-setting process. Harvest data showed some decrease in mean antler spread depending on hunt area. Data also showed a decrease in the proportion of larger bulls harvested. This information, in conjunction with lower harvest success with consistent hunter effort,

prompted the region to recommend reducing bull permits in several hunt areas. It appears that when we were consistently raising permit levels to track increasing populations, we may have passed the threshold on bull harvest for consistently producing large antlered bulls. For the 2005-2006 hunting seasons, the region reduced bull permits from 336 to 235 (30% reduction) and reduced cow permits from 133 to 115 (14% reduction). Many hunt areas showed an increase in mean antler spread from 2006 to 2007. The effects of the new reduced permit levels should continue to be monitored in the future.

## **Climatic Conditions**

Spring and summer weather conditions during 2007 were warm and very dry, resulting in little green vegetation. Winter 2007-2008 precipitation was high and temperatures were highly variable with some very cold temperatures. Spring 2008 was quite moist, with significant snow pack at higher elevations throughout the spring 2008 reporting period and good green-up throughout the rest of the region.

## **Depredation, Capture, and Translocation**

Moose nuisance complaints in and around houses and towns are common in the Upper Snake Region and are often dealt with through hazing, public education, or relocation of the animal. Winter 2007-2008 was above average for moose complaints due to extended winter weather conditions throughout the region. Many moose complaints can be handled through hazing or discussions with the affected party. During 2007-2008, several minor moose complaints were fielded by local officers and dealt with by either a phone call or visit. However, some moose have to be moved from human habitation due to conflicts and human safety concerns. During 2007-2008, 42 moose were sedated and relocated from near human habitation to suitable, occupied moose habitat in the Upper Snake Region.

### **Units 50, 51, 58, 63, 63A**

### **Controlled Hunt Areas 50, 51, 63, 63A**

## **Background**

In early 1980, 6 moose were released near 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. During winter 2001-2002, several nuisance moose were also translocated to Unit 50.

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 and 2004, an antlered-only hunt was authorized in Unit 58 for the same reason but was subsequently closed in 2005.

A significant population of moose exists in Unit 63A. Moose utilize 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 2 separate hunts (Hunt Areas 63 and 63A) in 2003.

### **Population Surveys**

No population surveys were conducted during this reporting period. Forty-seven moose were counted incidentally to an elk sightability survey in Unit 50. However, not all moose habitat is flown during elk surveys, so these incidental numbers are not a reliable estimate of the number of moose in an area; they are considered only a minimum number.

### **Harvest Characteristics**

A total of 25 antlered-only permits were issued in these units in 2007, resulting in the harvest of 20 animals (80% success) based on mandatory harvest reports (Table 3). In addition, 15 moose were harvested on 20 antlerless-only permits (75% success). In 2007, mean antler spreads were 37.9 ( $n = 4$ , range 31.0-45.3) in Hunt Area 50; 33.6 ( $n = 4$ , range 20.0-40.0) in Hunt Area 51; 31.4 ( $n = 3$ , range 23.5-40.3) in Hunt Area 63; and 33.5 ( $n = 8$ , range 23.0-42.0) in Hunt Area 63A. All of these Hunt Areas had an increase in mean antler spread over the 2006 harvest.

### **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.

### **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 nuisance and depredation problems in some years and permit increases were implemented beginning in 1993. Populations currently appear to be stable and mean antler spread appears to have been improved with the permit level changes.

## 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. Fifteen antlered-only and 5 antlerless-only permits were offered in 2007. Prior to 1993, 2 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 4 and 8 with over 90% hunter success reported. Hunt Area 59A was closed in 1978 after only 1 moose was harvested in the preceding 4 years. In 1983, this hunt was reopened and 2 permits were issued annually through 1988 with 100% hunter success. Four permits were issued each season from 1989-1992 with 100% hunter success.

#### Population Surveys

A moose trend count was flown in Units 59 and 59A on 17-18 December 1994 using a Bell Model G47 Soloy helicopter. Counting conditions were good, with 8 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 7 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, 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, 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 (10 bulls, 19 cows, 13 calves, 48 unclassified). The 2004-2005 survey resulted in a total count of 74 moose (6 bulls, 13 cows, 6 calves, 49 unclassified). There were no incidental counts of moose during 2007.

#### Harvest Characteristics

Fifteen permits for antlered moose were offered in 2007, and 13 animals were harvested for an 87% hunter success rate (Table 3). In addition, 5 antlerless permits were issued and 4 animals were harvested (80% success). Mean antler spread was 33.2 inches ( $n = 13$ ) and ranged from 27.0-38.0 inches. This is a slight decline in mean antler spread from the 2006 harvest.

Known illegal kill (Table 2) 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.

## **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.

## **Management Implications**

General observations indicate the moose population in these units is somewhat stable. Permit levels increased steadily in the past 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 Native American harvest. As a result, all moose hunts in Fremont County were closed in 1977. After a boundary change to include only Clark County, Hunt 361-1 was the only hunt open from 1977 to 1982.

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, 8 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 Henrys Fork of the Snake River. Many residences and farms are in the area. The moose population within this corridor has been increasing. We received many depredation and nuisance complaints of moose in agriculture fields and near towns and residences, 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 steadily increased through 2004 as the populations continued to grow. Like other portions of the region, permit levels were significantly reduced during 2005-2007 in an attempt to increase the number of larger bulls in the population.

Fourteen hunts with a total of 80 antlered-only and 40 antlerless-only permits were offered in 2007 in these hunt areas.

## **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 including 180 cows, 109 bulls, and 77 calves (Table 4). 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 (Table 5). 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 2 years of drought, and significant winter losses probably occurred.

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 (2 bulls, 21 cows, 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 2007, a total of 328 moose were counted incidental to deer trend surveys in Unit 60A. The majority of these animals were unclassified. Other recent totals for Unit 60A include 239, 185, 387, 473, 585, 340, 219, 272, 360, 187, and 312 in 2004, 2003, 2002, 2000, 1998, 1997, 1996, 1995, 1994, 1993, and 1991, respectively. Thirty-eight moose were also counted during 2007 deer trend surveys in Unit 62.

### **Harvest Characteristics**

Eighty antlered-only moose permits were issued in 2007, resulting in the harvest of 73 animals (91% success) based on mandatory harvest reports (Table 3). In addition, 32 moose were harvested on 40 antlerless-only permits (80% success). Mean antler spreads were 36.2 ( $n = 14$ , range 21.0-45.0) in Hunt Area 60; 31.6 ( $n = 5$ , range 21.0-39.0) in Hunt Area 60A; 37.3 ( $n = 13$ , range 22.3-47.0) in Hunt Area 61-1; 34.5 ( $n = 7$ , range 22.8-41.0) in Hunt Area 61-2; 32.6 ( $n = 14$ , range 13.0-46.0) in Hunt Area 61-3; 36.8 ( $n = 9$ , range 32.5-42.0) in Hunt Area 62; and 38.6 ( $n = 9$ , range 34.0-43.0) in Hunt Area 62A. Most of these Hunt Areas had an increase in mean antler spread over the 2006 harvest.

### **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 had been increased accordingly through 2004. Populations currently appear to be stable and mean antler spread appears to have been improved in many Hunt Areas with the permit level changes.

## **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 has been open to moose hunting since 1974. In 1983, this area (old Hunt Area 364) was split along unit boundaries into 3 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. An antlerless-only hunt with 5 permits was created in 2005 in Unit 65.

Hunting opportunity has increased in these units from 1 hunt with 2 permits during the early 1980s to 7 hunts with 78 permits (58 antlered and 20 antlerless permits) in 2004. Permits were subsequently reduced in 2005 to 65 (45 antlered and 20 antlerless) and have remained at this level since.

#### **Population Surveys**

Historically, moose populations appeared to be increasing in these units prior to the winter of 1988-1989. Forage was impacted by 2 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 winter 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 and a total of 110 moose were observed. In 2007, a total of 38 moose were counted in Unit 64 incidental to mule deer trend surveys.

#### **Harvest Characteristics**

Hunters harvested 40 antlered moose on 45 permits (89% hunter success rate) and 15 antlerless moose on 20 permits (75% success) in 2007 (Table 3). Mean antler spreads were 37.4 ( $n = 14$ , range 28.0-45.5) in Hunt Area 64; 43.8 ( $n = 9$ , range 37.0-53.0) in Hunt Area 65; 39.1 ( $n = 9$ , range 32.3-46.5) in Hunt Area 67-1; and 38.7 ( $n = 4$ , range 36.5-40.3) in Hunt Area 67-2. Mean antler spread of bulls harvested during 2007 was higher in all Hunt Areas than it was in 2006.

## **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.

## **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 moose distribution. A 1989 aerial survey found approximately half the number of moose counted in 1985. A shift in moose distribution resulting from 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. Bull permits were reduced, starting in 2005, in an attempt to increase the number of larger bulls in the population. Mean antler spread of bulls harvested during 2007 was higher in all Hunt Areas than it was in 2006.

## **Units 66, 69**

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

## **Background**

Ten hunts with a total of 70 antlered-only permits and 30 antlerless permits were offered in Units 66 and 69 from 2005-2007, compared to 104 antlered-only and 35 antlerless permits offered in 2004. This was a 33% reduction in antlered and a 14% reduction in antlerless permit levels. The moose population in these units increased at a fairly rapid rate during the late 1970s when populations elsewhere in Upper Snake Region were decreasing or remaining static. Moose populations have apparently continued to increase, particularly in the west half of Unit 69.

Hunts 66 and 69 were split in 1981 to create 4 hunts (66-1, 66-2, 69-1, and 69-2). This resulted in a 50% increase in permit levels from 1980 (16 to 24). A new hunt (69-3) was created in 1984 from adjacent portions of Hunts 66-1 and 69-2.

Hunt 69-1 was changed from antlered-only to either-sex in 1986 to address landowner concerns over grain field depredations. 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 (69-4) was initiated. This hunt had 10 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 3 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 (not all subunits containing moose were surveyed).

A total of 304 moose (most unclassified) were counted incidentally in Units 66 and 69 in 2007. Other recent totals include 384 (2005), 317 (2000), 228 (1999), 293 (1997), 200 (1995), 98 (1994), and 147 (1992), respectively.

### **Harvest Characteristics**

Ten hunts with a total of 100 permits were offered in these 2 units in 2007 (Table 3). A total of 56 antlered moose were harvested on 70 permits (80% success). An additional 20 antlerless moose were harvested on 30 permits (67% success). Mean antler spreads were 33.1 ( $n = 9$ , range 24.0-39.3) in Hunt Area 66-1; 35.6 ( $n = 13$ , range 24.0-42.0) in Hunt Area 66-2; 40.9 ( $n = 11$ , range 37.0-48.0) in Hunt Area 69-1; 39.2 ( $n = 11$ , range 32.0-50.0) in Hunt Area 69-2; and 37.4 ( $n = 10$ , range 27.0-45.5) in Hunt Area 69-3. Mean antler spread of bulls harvested during 2007 was higher in most of these Hunt Areas than it was in 2006.

### **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 Tex Creek WMA.

### **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. Bull permits were reduced, starting in 2005, in an attempt to increase the number of larger bulls in the population. Mean antler spread of bulls harvested during 2007 was higher in most of these hunt areas than it was in 2006. The effects of the new reduced permit levels should continue to be monitored in the future.

Table 1. Moose harvest and drawing odds, Upper Snake Region, 1982-present.

Year	Permits	Harvest			Hunter success (%)	First-choice applicants	Drawing odds
		M	F	Total			
1982	42	35	0	35	83	2,434	1:1.7
1983	88	86	0	86	98	3,357	1:2.6
1984	98	96	0	96	98	3,049	1:3.2
1985	120	118	0	118	98	3,403	1:3.5
1986	145	143	1	144	99	2,071	1:7.0
1987	148	144	2	146	99	1,970	1:7.5
1988	140	134	2	136	97	1,597	1:8.8
1989	145	129	6	135	93	1,248	1:11.6
1990	148	143	2	145	98	1,204	1:12.3
1991	128	111	14	125	98	1,554	1:8.2
1992	128	109	16	125	98	1,162	1:11.0
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
2004	469	287	95	382	81	1,387	1:2.9
2005	350	191	90	281	80	1,471	1:4.2
2006	350	183	92	275	79	1,311	1:3.7
2007	350	203	76	280	80	1,505	1:4.3

Table 2. Known moose mortalities, excluding controlled hunts, Upper Snake Region, 1982-present.

Year	Mortality agent						Total
	Native American 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
2004	0	6	22	0	0	7	25
2005	0	1	27	5	0	6	39
2006	0	2	23	1	0	5	31
2007	0	1	1	9	0	2	13

Table 3. Moose harvest and drawing odds by analysis area, Upper Snake Region, 1997-present.

Analysis area	Year	Permits	Harvest		Hunter success (%)	Days/hunter	First-choice applicants	Drawing odds
			M	F				
50, 51,	1997	26	13	9	85	4.8	116	1:4.5
58, 63	1998	26	9	8	65	5.6	96	1:3.7
63A	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
	2004	53	25	19	83	5.0	135	1:2.5
	2005	45	21	19	89	4.8	158	1:3.5
	2006	45	16	17	73	4.8	190	1:4.2
	2007	45	20	15	78	4.0	170	1:3.8
59, 59A	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
	2004	25	19	5	96	3.1	102	1:4.8
	2005	20	12	3	75	4.5	131	1:6.6
	2006	20	14	5	95	2.3	85	1:4.3
	2007	20	13	4	85	4.4	109	1:5.4
60, 60A	1997	101	81	6	86	3.8	773	1:7.7
61, 62,	1998	101	83	3	85	4.8	692	1:6.9
62A	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
	2004	174	103	33	78	5.2	516	1:2.9
	2005	120	63	29	77	5.4	532	1:4.4
	2006	120	66	30	80	5.2	448	1:3.7
	2007	120	73	22	79	5.4	531	1:4.4
64, 65,	1997	56	35	7	75	4.5	228	1:4.1
67	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
	2004	78	47	14	78	6.2	230	1:2.9
	2005	65	36	14	77	5.5	205	1:3.2

Table 3. Continued.

Analysis area	Year	Permits	Harvest		Hunter success (%)	Days/hunter	First-choice applicants	Drawing odds
			M	F				
66, 69	2006	65	31	17	74	5.7	198	1:3.0
	2007	65	40	15	85	6.8	236	1:3.6
	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
	2004	139	92	26	85	5.3	404	1:2.9
	2005	100	59	25	84	6.6	445	1:4.5
	2006	100	56	23	79	5.8	390	1:3.9
	2007	100	56	20	76	5.7	459	1:4.6

Table 4. Aerial survey of moose, Hunt Area 62, Upper Snake Region, 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 5. Aerial survey of moose, Hunt Areas 60, 60A, 61, 62, Upper Snake Region.

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 <sup>a</sup>	100:100:100	85	65:100:41	50
Junipers and Hook of Sands <sup>a</sup>	118:100:44	103	33:100:67	18
Chokecherry Ridge and Second Sands <sup>a</sup>	69:100:45	63	72:100:36	48
Total		888		444

<sup>a</sup> Moose counted in conjunction with helicopter deer survey, 18 December 1988.

**PROGRESS REPORT  
SURVEYS AND INVENTORY**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Moose Surveys and Inventories</u>
<b>PROJECT:</b>	<u>W-170-R-32</u>		
<b>SUBPROJECT:</b>	<u>7</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>I</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>6</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2007 to June 30, 2008</u>		

**SALMON REGION**

**Units 21, 21A, 27, 29, 30, 30A, 36A, 37A**

**Controlled Hunt Areas 21, 27, 29, 36A**

**Abstract**

Four controlled hunts with 16 total permits for antlered moose occurred in Salmon Region during 2007. Thirteen of 16 hunters harvested moose (81% hunter success). Average antler spread was 38.6 inches; the 5-year running average was 35.0 inches. Interest in moose permits was typical of recent years; 111 applicants selected Salmon Region hunts as first choices (drawing odds = 1:6.9).

**Climatic Conditions**

Rainfall during summer months in 2007 was below average, with warm, dry weather during late spring. Vegetative growth appeared average early in the season, but was poor during summer. Winter conditions were generally moderate, with normal to above normal temperatures and precipitation. In general, animals entered winter in average to below average body condition, then encountered an average winter, which should have produced moderate over-winter survival for adults. Snow-pack (as measured at higher elevations) was approximately 115% of average by late winter. Onset of spring weather and associated plant phenology was later than normal in 2008. Water-year precipitation to date has been approximately 100% of average at higher elevations (Snotel sites), but only 55% of normal at low elevations (Salmon weather station). Early and late spring conditions were cool and wet.

**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 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 decades, primarily in the North Fork Salmon River drainage. As a result, Hunt Area 21 (Units 21 and 21A) was initiated in 1990 with 3 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. Two new hunt areas were opened in 2005 with 1 permit each: 27 and 36A.

### **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 Salmon Region. Incidental observations of moose are recorded during aerial surveys for other ungulates. During 2007-2008 surveys, observers counted 43 moose.

### **Harvest Characteristics**

Harvest and hunter information was compiled from Big Game Mortality Reports, which hunters must complete within 10 days of harvest; antlers of males must be presented to an IDFG representative. Permit levels (Table 1) and season structure (Appendix A) were unchanged for established hunts in 2007. Two permits were added in 2 new hunt areas in 2005 (Table 2); 1 permit each in areas 27 (all of Unit 27) and 36A (all of Unit 36A). Sixteen antlered-moose permits were allocated between 4 controlled hunts in Salmon Region for 2007. Thirteen of 16 hunters harvested moose (81% success). Overall hunter success was near the long-term average of 85%. Of 216 hunters since 1990, 183 (85%) have taken a moose (Table 1). Antler spread of moose harvested during the 2007 season ranged from 28 to 46.5 inches (mean = 38.6 in.). Since 1995, average spread ranged from 33.4 to 38.6 inches.

One moose death was attributed to non-hunting mortality during the reporting period (Table 3). Non-hunting mortality ranged from 0 to 8 moose per year since 1982.

### **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 Salmon Region during the reporting period (Table 4). 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. Moose harvest and drawing odds, Salmon Region, 1990-present.

Year	Permits	Harvest			Hunter 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 <sup>a</sup>	14	11	0	11	79	80	1:5.7
2001 <sup>a,b</sup>	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
2004	14	11	0	11	79	93	1:6.6
2005 <sup>c</sup>	16	9	0	9	53	124	1:7.8
2006	16	13	0	13	81	119	1:7.4
2007	16	13	0	13	81	111	1:6.9

<sup>a</sup> One permit was deferred from 2000 until 2001 season because of wildfires.

<sup>b</sup> Two hunters mistakenly harvested bulls in Hunt Area 29.

<sup>c</sup> One hunter mistakenly harvested a bull in Hunt Area 29.

Table 2. Moose harvest and drawing odds by hunt area, Salmon Region, 1997-present.

Hunt area	Year	Permits	Harvest		Hunter success (%)	Days/hunter	First-choice applicants	Drawing odds
			M	F				
21	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 <sup>a</sup>	4	2	0	67	4.0	10	1:2.5
	2001 <sup>a</sup>	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
	2004	4	3	0	75	7.0	9	1:2.3
	2005	4	1	0	25	16.0	11	1:2.8
	2006	4	2	0	50	12.5	9	1:2.3
	2007	4	2	0	50	6.0	4	1:1.0
27	2005	1	0	0	0		2	1:2.0
	2006	1	0	0	0		1	1:1.0
	2007	1	1	0	100	10.0	4	1:4.0
29	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 <sup>b</sup>	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
	2004	10	8	0	80	7.0	84	1:8.4
	2005 <sup>c</sup>	10	8	0	73	4.0	108	1:10.8
2006	10	10	0	100	6.4	91	1:9.1	
2007	10	9	0	90	5.1	87	1:8.7	
30	1997	3	3	0	100	3.0	27	1:9.0
	1998 <sup>d</sup>	3	3	0	100	8.3	30	1:10.0
36A	2005	1	0	0	0		3	1:3.0
	2006	1	1	0	100	3.0	18	1:18.0
	2007	1	1	0	100	10.0	16	1:16.0

<sup>a</sup> One permit was deferred from 2000 until 2001 season because of wildfires.

<sup>b</sup> Two hunters mistakenly harvested bulls in Hunt Area 29.

<sup>c</sup> One hunter mistakenly harvested a bull in Hunt Area 29.

<sup>d</sup> Hunt Area 30 combined with Hunt Area 29 after 1998.

Table 3. Known moose mortalities, excluding controlled hunts, Salmon Region, 1982-present.

Year	Mortality agent					Total
	Native American 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
2004	0	0	3	2	1	6
2005	0	1	0	1	1	3
2006	0	0	1	1	1	3
2007	0	0	0	1	0	1

Table 4. Moose translocation, Salmon Region, February 1993.

Capture site	Release site	Adults		Calves		Total
		M	F	M	F	
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**  
**2007 SEASON**  
**MOOSE RULES**

# Moose, Bighorn Sheep and Mountain Goat

## Controlled Hunt Seasons 2007 and 2008



*Photos courtesy of Rick Martin, Came Hugo, and Billie Lee.*



- **Controlled Hunt application period: April 1 - April 30.**
- **Persons applying for controlled hunts MUST submit tag and application fees. See pages 7 - 8.**
- **New information is highlighted.**

Major changes highlighted in yellow.

You may refer to this link for laws pertaining to this rule book:

Administrative Procedures Act:

<http://adm.idaho.gov/adminrules/rules/idapa13/13index.htm>



## RULES

2007 and 2008

**NEW  
FORMAT!  
SPECIES  
MAPS  
INCLUDE  
BOUNDARIES  
FOR EACH  
CONTROLLED  
HUNT!**



## 2007 & 2008 MOOSE HUNTING SEASONS

**MOOSE**

- 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.

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.

### MANDATORY CHECK AND REPORT REQUIREMENTS

Antlers must be presented at IDFG regional offices or official check point or to a conservation officer within 10 days of the date of the kill. The IDFG headquarters office is not equipped to check in moose. In the Boise area, these animals can be checked at the IDFG Regional Office in Nampa (3101 S. Powerline Rd, 208-465-8465) between the hours of 8 a.m. and 5 p.m. or by appointment at the Garden City facility, 109 W. 44th St., 208-327-7099. Successful hunters must complete a big game mortality report, available at IDFG regional offices, from conservation officers, taxidermists and meat processors within 10 days of the date of the kill. All hunters who have harvested either an antlered or antlerless moose must complete this report.

**NOTE:** Moose tags unfilled after the first drawing are available to any Idaho hunter during a second drawing. (See page 8). Hunters who have previously harvested a bull and/or a cow moose and not eligible for the first drawing **MAY APPLY** for and receive one of these tags in the second drawing or as a left-over permit if tags are still available.

<b>2007 - 2008 ANTLERED MOOSE CONTROLLED HUNTS - 914</b>							
Hunt No.	Controlled Hunt Area.	Permits	Season Dates	Hunt No.	Controlled Hunt Area.	Permits	Season Dates
3001	1-1	14	Sep 1-Sep 14	3024	1-4	8	Nov 15-Nov 28
3002	1-1	14	Sep 15-Sep 28	3025	2	4	Sep 1-Sep 14
3003	1-1	14	Oct 1-Oct 14	3026	2	4	Sep 15-Sep 28
3004	1-1	14	Oct 15-Oct 28	3027	2	4	Oct 1-Oct 14
3005	1-1	14	Nov 1-Nov 14	3028	2	4	Oct 15-Oct 28
3006	1-1	14	Nov 15-Nov 28	3029	2	4	Nov 1-Nov 14
3007	1-2	6	Sep 1-Sep 14	3030	2	4	Nov 15-Nov 28
3008	1-2	6	Sep 15-Sep 28	3031	3	10	Aug 30-Nov 23
3009	1-2	6	Oct 1-Oct 14	3032	3	10	Oct 1-Oct 14
3010	1-2	6	Oct 15-Oct 28	3033	4	10	Aug 30-Nov 23
3011	1-2	6	Nov 1-Nov 14	3034	4	10	Oct 1-Oct 14
3012	1-2	6	Nov 15-Nov 28	3035	4A	5	Aug 30-Nov 23
3013	1-3	5	Sep 1-Sep 14	3036	5	5	Aug 30-Nov 23
3014	1-3	5	Sep 15-Sep 28	3037	6	10	Aug 30-Nov 23
3015	1-3	5	Oct 1-Oct 14	3038	6	10	Oct 1-Oct 14
3016	1-3	5	Oct 15-Oct 28	3039	7	5	Aug 30-Nov 23
3017	1-3	5	Nov 1-Nov 14	3040	7	5	Oct 1-Oct 14
3018	1-3	5	Nov 15-Nov 28	3041	8	8	Aug 30-Nov 23
3019	1-4	8	Sep 1-Sep 14	3042	8A	8	Aug 30-Nov 23
3020	1-4	8	Sep 15-Sep 28	3043	9	5	Aug 30-Nov 23
3021	1-4	8	Oct 1-Oct 14	3044	9	5	Oct 1-Oct 14
3022	1-4	8	Oct 15-Oct 28	3045	10-1 <sup>a</sup>	6	Aug 30-Nov 23
3023	1-4	8	Nov 1-Nov 14	3046	10-2	5	Aug 30-Nov 23

<sup>a</sup> Contact Clearwater National Forest for motorized travel restrictions on Lolo Motorway.

**MOOSE**

Hunt No.	Controlled Hunt Area.	Permits	Season Dates
3047	10-3	10	Aug 30-Nov 23
3048	10-4	4	Aug 30-Nov 23
3049	10-5 <sup>a</sup>	4	Aug 30-Nov 23
3050	10-6	3	Aug 30-Nov 23
3051	10A-1	10	Aug 30-Nov 23
3052	10A-2	8	Aug 30-Nov 23
3053	10A-3	3	Aug 30-Nov 23
3054	10A-4	8	Aug 30-Nov 23
3055	10A-5	5	Aug 30-Nov 23
3056	12-1 <sup>a</sup>	3	Aug 30-Nov 23
3057	12-2 <sup>a</sup>	13	Aug 30-Nov 23
3058	12-3	7	Aug 30-Nov 23
3059	12-4	7	Aug 30-Nov 23
3060	12-5	7	Aug 30-Nov 23
3061	12-6 <sup>a</sup>	6	Aug 30-Nov 23
3062	14-1	7	Aug 30-Nov 23
3063	14-2	6	Aug 30-Nov 23
3064	15-1	15	Aug 30-Nov 23
3065	15-2	10	Aug 30-Nov 23
3066	15-3	5	Aug 30-Nov 23
3067	15-4	15	Aug 30-Nov 23
3068	16-1	5	Aug 30-Nov 23
3069	16-2	7	Aug 30-Nov 23
3070	16A-1	5	Aug 30-Nov 23
3071	16A-2	2	Aug 30-Nov 23
3072	17-1	5	Aug 30-Nov 23
3073	17-2	3	Aug 30-Nov 23
3074	17-3	2	Aug 30-Nov 23
3075	17-4	3	Aug 30-Nov 23
3076	17-5	5	Aug 30-Nov 23
3077	19-1	4	Aug 30-Nov 23
3078	19-2	8	Aug 30-Nov 23
3079	19A	2	Aug 30-Nov 23
3080	20-1	3	Aug 30-Nov 23
3081	20-2	2	Aug 30-Nov 23
3082	20-3	2	Aug 30-Nov 23
3083	20-4	3	Aug 30-Nov 23
3084	20A	2	Aug 30-Nov 23
3085	21 <sup>*</sup>	4	Aug 30-Nov 23

Hunt No.	Controlled Hunt Area.	Permits	Season Dates
3086	25	2	Aug 30-Nov 23
3087	27	1	Aug 30-Nov 23
3088	29 <sup>*</sup>	10	Aug 30-Nov 23
3089	36A	1	Aug 30-Nov 23
3090	44 <sup>*</sup>	4	Aug 30-Nov 23
3091	48 <sup>*</sup>	2	Aug 30-Nov 23
3092	50	5	Aug 30-Nov 23
3093	51	5	Aug 30-Nov 23
3094	56 <sup>*</sup>	5	Aug 30-Nov 23
3095	59 <sup>*</sup>	15	Aug 30-Nov 23
3096	60 <sup>b</sup>	15	Aug 30-Nov 23
3097	60A <sup>c, d</sup>	5	Aug 30-Nov 23
3098	61-1	15	Aug 30-Nov 23
3099	61-2	10	Aug 30-Nov 23
3100	61-3	15	Aug 30-Nov 23
3101	62	10	Aug 30-Nov 23
3102	62A	10	Aug 30-Nov 23
3103	63 <sup>e</sup>	5	Aug 30-Nov 23
3104	63A <sup>c, d</sup>	10	Aug 30-Nov 23
3105	64	15	Aug 30-Nov 23
3106	65	10	Aug 30-Nov 23
3107	66-1	15	Aug 30-Nov 23
3108	66-2	15	Aug 30-Nov 23
3109	66A	15	Aug 30-Nov 23
3110	67-1	10	Aug 30-Nov 23
3111	67-2	10	Aug 30-Nov 23
3112	69-1	15	Aug 30-Nov 23
3113	69-2	15	Aug 30-Nov 23
3114	69-3 <sup>*</sup>	10	Aug 30-Nov 23
3115	70	5	Aug 30-Nov 23
3116	71-1	5	Aug 30-Nov 23
3117	71-2	5	Aug 30-Nov 23
3118	72	5	Aug 30-Nov 23
3119	74	5	Aug 30-Nov 23
3120	75	5	Aug 30-Nov 23
3121	76-1	15	Aug 30-Nov 23
3122	76-2	10	Aug 30-Nov 23
3123	76-3	15	Aug 30-Nov 23
3124	77	5	Aug 30-Nov 23
3125	78	5	Aug 30-Nov 23

<sup>a</sup> See controlled hunt area descriptions. This hunt includes other units or parts of other units.  
<sup>b</sup> Contact Clearwater National Forest for motorized travel restrictions on Lolo Motorway.  
<sup>c</sup> Short-range weapons only on Chester Wetlands WMA.  
<sup>d</sup> Short-range weapons only. Limited access.  
<sup>e</sup> Motorboat advised for game retrieval.  
<sup>\*</sup> Short-range weapons only on Mud Lake WMA.



## 2007 - 2008 ANTLERLESS MOOSE CONTROLLED HUNTS - 232 PERMITS

Hunt No.	Controlled Hunt Area.	Permits	Season Dates	Hunt No.	Controlled Hunt Area.	Permits	Season Dates
3126	1-1	20	Oct 15-Nov 23	3144	65	5	Oct 15-Nov 23
3127	2	20	Oct 15-Nov 23	3145	66-1	5	Oct 15-Nov 23
3128	8	4	Oct 15-Nov 23	3146	66-2	5	Oct 15-Nov 23
3129	8A	4	Oct 15-Nov 23	3147	66A	10	Oct 15-Nov 23
3130	44	2	Oct 15-Nov 23	3148	67-1	5	Oct 15-Nov 23
3131	48	2	Oct 15-Nov 23	3149	67-2	5	Oct 15-Nov 23
3132	50	5	Oct 15-Nov 23	3150	69-1	10	Oct 15-Nov 23
3133	59*	5	Oct 15-Nov 23	3151	69-2	5	Oct 15-Nov 23
3134	60 <sup>b</sup>	5	Oct 15-Nov 23	3152	69-3	5	Oct 15-Nov 23
3135	60A <sup>cd</sup>	10	Oct 15-Nov 23	3153	71-1	5	Oct 15-Nov 23
3136	61-1	5	Oct 15-Nov 23	3154	71-2	5	Oct 15-Nov 23
3137	61-2	5	Oct 15-Nov 23	3155	75	5	Oct 15-Nov 23
3138	61-3	5	Oct 15-Nov 23	3156	76-1	10	Oct 15-Nov 23
3139	62	5	Oct 15-Nov 23	3157	76-2	10	Oct 15-Nov 23
3140	62A	5	Oct 15-Nov 23	3158	76-3	10	Oct 15-Nov 23
3141	63 <sup>e</sup>	5	Oct 15-Nov 23	3159	77	5	Oct 15-Nov 23
3142	63A <sup>c, d</sup>	10	Oct 15-Nov 23	3160	78	5	Oct 15-Nov 23
3143	64	5	Oct 15-Nov 23				

**MOOSE**

- \* See controlled hunt area descriptions. This hunt includes other units or parts of other units.
- <sup>a</sup> Contact Clearwater National Forest for motorized travel restrictions on Lolo Motorway.
- <sup>b</sup> Short-range weapons only on Chester Wetlands WMA.
- <sup>c</sup> Short-range weapons only. Limited access.
- <sup>d</sup> Motorboat advised for game retrieval.
- <sup>e</sup> Short-range weapons only on Mud Lake WMA.

### 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 Unit 4.

**Hunt Area 4A** — All of Unit 4A.

**Hunt Area 5** — All of Unit 5.

**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** — All of Unit 20A.

**Hunt Area 21**—All of Units 21 and 21A.

**Hunt Area 25**—All of Unit 25.

**Hunt Area 27** — All of Unit 27.

**Hunt Area 29** —All of Units 29, 30, 30A, 37A, and 58.

**Hunt Area 36A** — All of Unit 36A.

**Hunt Area 44** — That portion of Unit 44 east of the Fairfield-Couch Summit-Five Points Road, and that portion of Unit 48 west of State Highway 75.

**Hunt Area 48** — All of Unit 49 and that portion of Unit 48 east of State Highway 75.

**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 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 Highway 31 and north of Highway 26.

**Hunt Area 67-2**—That portion of Unit 67 south and east of Highway 31 and that portion of Unit 67 south of Highway 26.

**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 Georgetwon-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.

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

Submitted by:

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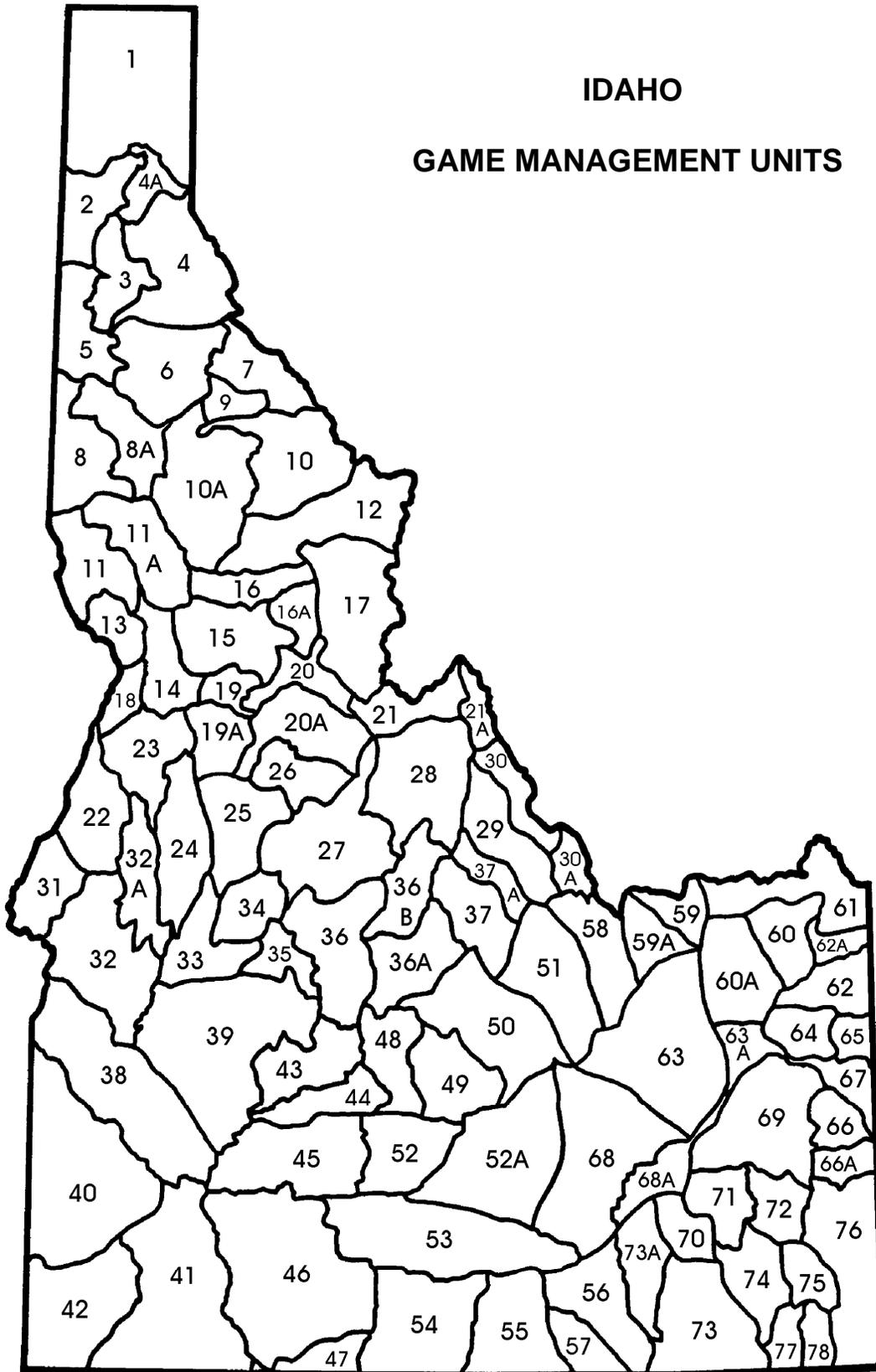
Approved by: IDAHO DEPARTMENT OF FISH AND GAME

*Dale E. Towseill*  
Dale E. Towseill  
Wildlife Program Coordinator  
Federal Aid Coordinator

*Jeff Gould*  
Jeff Gould, Chief  
Bureau of Wildlife

# IDAHO

## GAME MANAGEMENT UNITS



## FEDERAL AID IN WILDLIFE RESTORATION

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

