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July 1, 2001 to June 30, 2002

MOOSE

JOB PROGRESS REPORT

STUDY I, JOB 6

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PROGRESS REPORT
SURVEYS AND INVENTORY

STATE:	Idaho	**JOB TITLE:**	Moose Surveys and Inventories
PROJECT:	W-170-R-26		
SUBPROJECT:	1-7	**STUDY NAME:**	Big Game Population Status, Trends, Utilization, and Associated Habitat Studies
STUDY:	I		
JOB:	6		

PERIOD COVERED: July 1, 2001 to June 30, 2002

MOOSE – STATEWIDE

Abstract

In 2001, the Idaho Department of Fish and Game identified 108 controlled hunts for moose in Idaho. A total of 1,003 permits were available for antlered moose in 92 controlled hunts, and an additional 147 permits for antlerless moose in an additional 16 controlled hunts. Because of wildfires in 2000, 6 additional permits for bull moose were valid for use in 2001. The 1,009 hunters holding permits for bull moose harvested 800 animals, for a success rate of 79%, as compared with a harvest success rate of 78% on antlered moose in 2000 and 76% on antlered moose in 1999. A total of 118 antlerless moose were harvested by permittees in 2001, for a success rate of 80% as compared with a harvest rate of 71% in 2000 and 82% in 1999. The total harvest of 918 moose in Idaho in 2001 yielded an overall harvest rate of 79%, as compared with an overall harvest rate of 77% in 2000, 76% in 1999, 74% in 1998, and 77% in 1997.

Permits for antlered moose were highly sought in Idaho. Non-resident hunters were allowed to compete with residents for moose permits in Idaho in 2001 for the first time. In 2001, there were 4,765 first-choice applications from Idaho residents, and 265 first-choice applications received from non-residents, for 1,003 permits for antlered moose. The application success rate for antlered moose was 20% (5 applicants per permit). The number of applicants was down sharply from 1999, when there were 6,915 first-choice applicants for 888 permits, providing an applicant success rate of 7.8%. Of the 1,003 permits for antlered moose, 989 (99%) were awarded to first-choice applicants, 7 to second-choice applicants, and 7 permits for antlered moose were unfilled and sold over-the-counter after the controlled hunt drawing.

Applications for antlerless moose permits were received from 109 resident hunters and 1 non-resident in 2001. Of the 110 total applicants, 91 were awarded their first-choice of hunt area, and 28 received their second-choice; 28 permits were unfilled in the drawing and sold over-the-counter later. The lone non-resident applicant received a permit for antlerless moose.

Fees for a resident moose tag, permit and application (required at time of application) in 2001 were $164.50. Fees for non-resident moose tag, permit and application were $1,514.50. This entire amount, less a $6.50 application fee, was returned to unsuccessful applicants after the drawing.

PROGRESS REPORT
SURVEYS AND INVENTORY

STATE:	Idaho	**JOB TITLE:**	Moose Surveys and Inventories
PROJECT:	W-170-R-26		
SUBPROJECT:	1	**STUDY NAME:**	Big Game Population Status, Trends, Utilization, and Associated Habitat Studies
STUDY:	I		
JOB:	6		

PERIOD COVERED: July 1, 2001 to June 30, 2002

MOOSE - PANHANDLE REGION

Abstract

During 2001, permit numbers were increased 79%, improving drawing odds to 1 in 8 compared to 1 in 14 the year prior. Success rates changed little, and 8 of 120 bulls harvested exceeded 50 inches in antler spread. A first-time offering of 5 antlerless permits in Unit 2 drew 13 applicants, who harvested 5 cow moose. There were 33 unregulated moose mortalities during 2001.

UNITS 1, 2, 3, 4, 6, 7 AND 9

Management Direction

Develop an index to moose population trends that does not rely solely on aerial surveys. Place enforcement emphasis on known problem areas of illegal moose kills. Publicize moose poaching arrests and the statewide reward system (CAP) in the media. Develop a program for warning deer and elk hunters that moose are in an area to reduce accidental kills of moose. 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. Continue collecting information on moose distribution and mortality from Department and other agency personnel and the hunting public.

Background

For many years it was believed that the Panhandle Region provided little suitable moose habitat and that populations would remain relatively low. Open areas and extensive riparian areas that typify moose habitat are not widespread in the region. Rather, moose often utilize closed canopy timber with interspersed shrub fields and creek bottoms. Presently these populations are steadily expanding where timber harvesting and fire have created early-seral shrub fields.

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

Population Surveys

No surveys were conducted for moose during the study period.

Harvest

In the Panhandle Region, moose hunting is now authorized in Units 1, 2, 3, 4, 6, 7, and 9 with an 86-day season for bull moose and a 40-day season for antlerless moose (Table 1). Eleven controlled hunts were authorized in the Panhandle Region in 2001 with a total of 220 permits. One hundred seventy-six permit holders completed the mandatory report stating that they were successful in bagging a bull for a success rate of 82% (Table 2). All units have shown an increase in permits over the past 10 years, with Unit 1 having the largest number of permits (Table 3).

Controlled Hunt Odds

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

Interest in moose hunting in the Panhandle Region has been high since moose hunting began. The increase in moose permits offered has been greater than the increase in applicants, resulting in an improvement in the odds of drawing a permit. In 2001, the combined odds of drawing a moose permit were 1 to 8.

Other Mortalities

Enforcement records of moose illegal mortalities were added to the existing database of moose mortalities for prior years. During the past seven years, 30 to 62 moose mortalities have been detected each year, in addition to controlled hunt harvest (Table 4). The bulk of these were illegal kills with roadkills contributing significantly. During 2001, thirty-three moose mortalities were documented in the Panhandle Region in addition to controlled hunts. The Coeur d'Alene Indian Tribe regulates moose harvest on ceded lands under agreement with the State of Idaho. In coordination with state goals, the tribe planned to increase tribal harvest to ten bull moose on ceded lands during 2001. 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

Recent aerial surveys allowed permit numbers to be increased from 123 to 220 for the 2001 and 2002 seasons. The number of applicants remained approximately the same, so drawing odds improved substantially, with one in eight applicants drawing a permit. Success rates remained good at 82%, and the effort required to harvest a moose was nearly identical as during the previous year. Eight of the 120 bulls checked were measured at 50 inches or greater maximum antler spread, indicating good availability of large bulls in the population. The largest, a 60 inch bull taken in Unit 1, was still in velvet when harvested in early September, and is the fourth widest spread recorded for an Idaho moose.

This year's data reflects the first year of a more aggressive moose management program. During 2001, hunt areas were combined into larger hunts, and permit levels were increased substantially, including a conservative cow moose hunt in Unit 2. This system allowed much higher hunter participation (+79% compared to 2000) with an associated improvement in drawing odds (one permit per 14 applicants in 2000 vs. one permit per 8 applicants in 2001). Our expectation is that mean bull age and bull moose density, will decrease somewhat during the next few years as easily accessed areas are hunted more intensively than in the past.

Table 1. 2001 Season Structure for Controlled Moose Hunts in the Panhandle Region.

Hunt Area	Season Dates	Season Length	Permits	Open For
1-1	30 August-23 November	86 days	60	Antlered
1-2	30 August-23 November	86 days	30	Antlered
1-3	30 August-23 November	86 days	25	Antlered
1-4	30 August-23 November	86 days	40	Antlered
2	30 August-23 November	86 days	20	Antlered
2	15 October-23 November	40 days	5	Antlerless
3	30 August-23 November	86 days	5	Antlered
4	30 August-23 November	86 days	10	Antlered
6	30 August-23 November	86 days	10	Antlered
7	30 August-23 November	86 days	10	Antlered
9	30 August-23 November	86 days	5	Antlered

Table 2. Summary of Moose Harvest and Drawing Odds in the Panhandle Region, 1992-2001.

Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
1992	51	44	0	86	9.3	1,071	1:21.0
1993	83	69	0	83	9.3	1,361	1:16.4
1994	83	63	0	76	8.5	1,430	1:17.2
1995	100	84	0	84	10.3	1,529	1:15.3
1996	100	74	0	74	7.4	1,516	1:15.2
1997	103	85	0	83	9.7	1,837	1:17.8
1998	103	91	0	88	8.6	1,623	1:16.8
1999	123	100	0	81	10.8	2,001	1:16.3
2000	123	106	0	86	8.6	1,765	1:14.3
2001	220	176	5	82	8.9	1,799	1:8.2

[a] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

Table 3. Summary of Moose Harvest and Drawing Odds by Hunt Area 1992-2001.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
1	1992	37	34	0	92	7.5	835	1:22.6
	1993	59	51	0	86	11.8	990	1:16.8
	1994	59	45	0	76	8.1	1,026	1:17.4
	1995	74	63	0	85	11.3	1,106	1:14.9
	1996	74	56	0	76	7.9	1,081	1:14.6
	1997	74	64	0	86	10.2	1,109	1:15.0
	1998	74	67	0	91	8.4	1,050	1:14.2
	1999	88	68	0	77	12.1	1,324	1:15.0
	2000	88	75	0	85	8.6	812	1:9.2
	2001	155	120	0	77	8.6	828	1:5.3
2	1992	2	2	0	100	2.0	73	1:36.5
	1993	4	4	0	100	7.0	125	1:31.3
	1994	4	3	0	75	2.3	120	1:30.0
	1995	5	5	0	100	4.8	116	1:23.2
	1996	5	5	0	100	5.0	129	1:25.8
	1997	10	9	0	90	9.0	230	1:23.0
	1998	10	10	0	100	14.0	225	1:22.5
	1999	10	10	0	100	9.6	298	1:29.8
	2000	10	10	0	100	6.4	162	1:16.2
	2001	25[b]	20	5	100	8.2	211	1:8.4
3 & 4	1992	2	2	0	100	22.5	73	1:36.5
	1993	4	3	0	75	4.5	57	1:14.3
	1994	4	4	0	100	7.3	60	1:15.0
	1995	4	3	0	75	9.3	57	1:14.3
	1996	4	4	0	100	10.0	86	1:21.5
	1997	4	2	0	50	2.7	104	1:26.0
	1998	4	3	0	75	9.1	87	1:21.8
3	1999	5	4	0	80	4.3	29	1:5.8
	2000	5	4	0	80	11.3	27	1:5.4
	2001	5	5	0	100	7.2	35	1:7.0
4	1999	5	4	0	80	8.0	110	1:22.0
	2000	5	5	0	80	9.5	68	1:13.6
	2001	10	9	0	90	12.0	108	1:10.8
6	1992	2	2	0	100	18.0	40	1:20.0
	1993	4	3	0	75	3.0	92	1:23.0
	1994	4	4	0	100	2.5	101	1:25.3
	1995	5	5	0	100	10.3	156	1:31.2
	1996	5	5	0	100	7.8	124	1:24.8
	1997	5	4	0	80	7.0	175	1:35.0
	1998	5	5	0	100	12.0	181	1:36.2
	1999	5	5	0	100	11.8	154	1:30.8
	2000	5	4	0	80	8.3	121	1:24.2
	2001	10	7	0	70	11.0	132	1:13.2

Table 3. Continued.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
7	1992	4	1	0	25	13.8	47	1:11.8
	1993	8	5	0	63	8.4	56	1:7.0
	1994	8	4	0	50	14.5	87	1:10.9
	1995	8	4	0	50	11.9	68	1:8.5
	1996	8	2	0	25	2.5	46	1:5.8
	1997	5	4	0	80	9.0	60	1:12.0
	1998	5	1	0	20	17.7	48	1:9.6
	1999	5	4	0	80	6.5	56	1:11.2
	2000	5	3	0	60	8.8	34	1:6.8
	2001	10	10	0	100	11.8	108	1:10.8
9	1992	2	1	0	50	8.0	32	1:16.0
	1993	4	3	0	75	4.5	41	1:10.3
	1994	4	3	0	75	7.8	40	1:10.0
	1995	4	4	0	100	6.7	26	1:6.5
	1996	4	2	0	50	5.0	50	1:12.5
	1997	5	2	0	40	9.5	44	1:8.8
	1998	5	5	0	100	10.6	32	1:6.4
	1999	5	5	0	100	7.4	30	1:6.0
	2000	5	5	0	100	9.2	41	1:8.2
	2001	5	5	0	100	8.0	61	1:12.2

[a] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

[b] Includes 5 antlerless permits (5 killed) with 13 applicants.

Table 4. Summary of all known moose mortalities in the Panhandle Region, excluding controlled hunts, since 1994.

	Mortality Agent						
Year	Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
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	10[a]	22	8	0	0	3	43

[a] Estimate. The Coeur d'Alene Indian Tribe was planning to issue 10 bull moose permits on ceded lands during 2001. Final 2001 tribal harvest not available.

PROGRESS REPORT
SURVEYS AND INVENTORY

STATE:	Idaho	**JOB TITLE:**	Moose Surveys and Inventories
PROJECT:	W-170-R-26		
SUBPROJECT:	2	**STUDY NAME:**	Big Game Population Status, Trends, Utilization, and Associated Habitat Studies
STUDY:	I		
JOB:	6		

PERIOD COVERED: July 1, 2001 to June 30, 2002

MOOSE – CLEARWATER REGION

Abstract

From the mandatory check, Clearwater Region hunters reported a 2001 harvest of 141 antlered moose from 40 controlled hunts and 7 antlerless moose from 2 controlled hunts. Two hundred seventy permits were available and hunters reported success rates averaging 51%. Antlered and antlerless success rates were 54% and 88%, respectively. Drawing odds ranged from 1:1.0 (Hunt Area 12-1) to 1:15 (Hunt Area 8A-1).

UNITS 8, 8A, 10, 10A, 12, 14, 15, 16, 17, 19, AND 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, AND 20-4

Management Direction

Moose populations will be allowed to increase in units where habitat conditions will support expansion. Legal harvest will continue primarily for antlered bulls only; antlerless moose hunting opportunity will be continued in areas where population control measures are considered necessary. Moose harvest will be increased where feasible, decreased where necessary, and hunt boundaries reexamined to create new hunts as desired. Known mortality will be documented and information on numbers and distribution will be obtained from big game mortality report forms from the mandatory check.

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

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

(Hunt 8-2, 4 permits, and Hunt 8A-2, 4 permits) were initiated to increase hunting opportunity, address high cow densities, and minimize the potential for moose-automobile collisions in these areas. Hunting season length for moose in the Clearwater Region were 86 days for bull moose and 40 days for antlerless moose (Table 1). Since 1986, persons applying for moose permits have been prohibited from applying for any other controlled hunt. 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 is selective toward 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 brushfields. 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.

Population Surveys

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

During aerial surveys for elk in Unit 17 in January 1995, 4 search units within the elk survey area and 7 additional search units outside of the area were flown for moose. These search units were located on the north side of the lower Selway River and were delineated to assess moose densities using the moose sightability model (Unsworth et al. 1994, Beta 3 version). Sixteen moose (5 cows, 9 bulls, 1 calf, and 1 unclassified) were observed in Hunt Area 17-3, for an estimate of 36 ±20 moose (8 cows, 18 bulls, 2 calves, 8 unclassified). Outside of the sightability survey area, 22 moose were observed (7 cows, 8 bulls, 3 calves, and 4 unclassified). Additionally, in Unit 16A, 19 moose (4 cows, 10 bulls, and 5 unclassified) were observed incidental to elk surveys.

During January 2000, a moose sightability survey was conducted across Hunt Areas 15-1, 15-2, 15-6, and 15-7 (north of State Highway 14 and west of the American River drainage) concurrent with elk surveys in Unit 15. The objectives of the survey were to 1) obtain an adult population estimate to evaluate future population changes, and 2) to obtain a sex composition/bull population estimate as a baseline to evaluate the future effect(s) of recent permit increases. Contiguous hunt areas were selected where permits were recently increased to 10 in each area, in a sufficiently small area that could be surveyed with available budget constraints (13 hours of flight time) and still be adequate to obtain estimates with low sampling variances. In search

units already selected for the elk survey, additional funds were expended to fly to higher elevations beyond those normally surveyed for elk. Furthermore, additional flight time was used to fly a large sample of the remaining subunits.

Twenty-six moose (7 cows, 9 bulls, 21 calves, 8 unclassified) were observed from a Hughes 500C helicopter during the survey. Sex classification was not always possible due to heavy vegetative cover and the lack of antlers on some moose. These data were initially analyzed with the moose sightability model (Unsworth et al. 1994, Beta 3 version). The results were an unexpected estimate of 614 ±481 moose at the 90% CI level that was extrapolated from the 26 observed moose (corrected to 31 with the sampling design).

Further examination of the moose model revealed that during its development, only 4 moose were in cover greater than 70%. As a result, each moose is corrected to a range of 1.04 to 7.83 moose when observed in the first 4 cover classes (0-71% cover), but corrected to 34.38 moose in cover class 5, and to 100.0 moose in cover class 6 (90-100% cover). This effect is amplified when visibility declines and the intercept is decreased when the Hughes 500 helicopter is used for the survey. Therefore, the 3 moose observed in greater than 70% cover during the Unit 15 survey contribute greatly to the total estimate. Considerations for avoiding this concern in future surveys might include conducting surveys at a time of year when they are found in less cover, or earlier in the winter (December) when antlers are consistently present to improve classification efforts.

Harvest

Harvest levels, hunter success, and hunter days expended for 2001 were determined from big game mortality reports (Table 2). Hunt areas in units 12, 15, and 17 were combined and or renamed in 2001 and one new hunt area was added in Unit 10 (10-6) in 2001. Permit numbers were adjusted in the region to respond to changes in hunter success rates and/or antler spread with a net loss of 22 permits. The 270 moose permits that were available in 2001 resulted in a reported harvest of 141 antlered moose and 7 antlerless moose. Mortality reports from some permittees were unaccounted for and were not used in calculating hunter success. Seven permits were not filled during the controlled hunt drawing process due to lack of interest (4 permits in Unit 12, 1 permit in Unit 17, and 2 permits in Unit 20). The 2001 cumulative success rate (55%) was lower than the average (62%) for the past 5-year period (1996-2000). Success rates for antlered and antlerless moose were 54% and 88%, respectively. Drawing odds in 2001 were variable, ranging from 1:0.0 (Hunt Area 12-1) to 1:15 (Hunt Area 8A-1).

Reported moose mortalities resulting from other than legal harvest during controlled hunts have varied considerably by unit (Table 3). Unit 15 continues to average the highest number of reported mortalities in the region outside of scheduled hunts, followed by Units 10A and 12. It is likely that the level of mortality is considerably higher than reported for the Clearwater Region, particularly with respect to the Indian harvest and illegal kills categories.

Climatic Conditions

The Clearwater Region experienced weather conditions in 2001-2002 that were considered normal. Snowpack in the Clearwater Basin was 117% of average (October through March) while the Salmon River Basin averaged 87% for the same time period. Snowfall was later than usual in the region with no accumulation at the lower elevations until after the first of December. This allowed big game populations to forage easily until mid-December. However, the presence of substantial snowpack that persisted later than normal into the spring likely had a negative effect on big game survival.

Management Implications

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

All areas need more intensive work to determine population levels, trends, and habitat selection and use. Some moose populations are increasing and seem to respond favorably to extensive habitat alteration by 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 Indian harvest.

LITERATURE CITED

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

Table 1. 2001 Season Structure for Controlled Moose Hunts in the Clearwater Region.

Hunt Area	Season Dates	Season Length	Permits	Open For
8	30 August-23 November	86 days	6	Antlered
8	15 October-23 November	40 days	4	Antlerless
8A	30 August-23 November	86 days	6	Antlered
8A	15 October-23 November	40 days	4	Antlerless
10-1	30 August-23 November	86 days	6	Antlered
10-2	30 August-23 November	86 days	3	Antlered
10-3	30 August-23 November	86 days	8	Antlered
10-4	30 August-23 November	86 days	4	Antlered
10-5	30 August-23 November	86 days	4	Antlered
10-6	30 August-23 November	86 days	3	Antlered
10A-1	30 August-23 November	86 days	9	Antlered
10A-2	30 August-23 November	86 days	8	Antlered
10A-3	30 August-23 November	86 days	3	Antlered
10A-4	30 August-23 November	86 days	7	Antlered
10A-5	30 August-23 November	86 days	5	Antlered
12-1	30 August-23 November	86 days	3	Antlered
12-2	30 August-23 November	86 days	13	Antlered
12-3	30 August-23 November	86 days	7	Antlered
12-4	30 August-23 November	86 days	7	Antlered
12-5	30 August-23 November	86 days	9	Antlered
12-6	30 August-23 November	86 days	6	Antlered
14-1	30 August-23 November	86 days	7	Antlered
14-2	30 August-23 November	86 days	6	Antlered
15-1	30 August-23 November	86 days	20	Antlered
15-2	30 August-23 November	86 days	15	Antlered
15-3	30 August-23 November	86 days	5	Antlered
15-4	30 August-23 November	86 days	20	Antlered
16-1	30 August-23 November	86 days	7	Antlered
16-2	30 August-23 November	86 days	10	Antlered
16A-1	30 August-23 November	86 days	5	Antlered
16A-2	30 August-23 November	86 days	2	Antlered
17-1	30 August-23 November	86 days	7	Antlered
17-2	30 August-23 November	86 days	3	Antlered
17-3	30 August-23 November	86 days	2	Antlered
17-4	30 August-23 November	86 days	5	Antlered
17-5	30 August-23 November	86 days	5	Antlered
19-1	30 August-23 November	86 days	4	Antlered
19-2	30 August-23 November	86 days	8	Antlered
20-1	30 August-23 November	86 days	5	Antlered
20-2	30 August-23 November	86 days	4	Antlered
20-3	30 August-23 November	86 days	2	Antlered
20-4	30 August-23 November	86 days	3	Antlered

Table 2. Summary of Moose Harvest and Drawing Odds by Hunt Area, 1992-2001.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
8	1992	2	2	0	100	1.0	44	1:22.0
	1993	2	2	0	100	6.5	16	1:8.0
	1994	2	2	0	100	7.0	16	1:8.0
	1995	4	3	0	75	12.8	55	1:13.8
	1996	4	3	0	75	15.3	41	1:10.3
	1997	4	3	0	75	7.0	41	1:10.3
	1998	4	4	0	100	17.6	44	1:11.0
	1999	10	6	4	100	8.7	61	1:6.1
	2000	10	5	3	80	5.1	34	1:3.4
	2001	10	5	3	80	7.1	35	1:3.5
8A	1993	2	2	0	100	12.5	46	1:23.0
	1994	2	2	0	100	20.0	42	1:21.0
	1995	4	4	0	100	15.5	58	1:14.5
	1996	4	3	0	75	7.8	65	1:16.3
	1997	4	2	0	50	9.5	84	1:21.0
	1998	4	4	0	100	5.5	93	1:23.3
	1999	10	6	4	100	5.2	154	1:5.4
	2000	10	6	4	100	3.5	76	1:7.6
	2001	10	5	4	90	4.1	104	1:10.4
10	1992	17	15	0	88	7.6	156	1:9.2
	1993	19	17	0	89	8.8	159	1:8.4
	1994	19	11	0	58	7.9	119	1:6.3
	1995	23	14	0	61	7.6	114	1:5.0
	1996	23	16	0	70	7.3	124	1:5.4
	1997	23	16	0	70	8.4	134	1:5.8
	1998	23	14	0	61	6.7	151	1:6.6
	1999	23	16	0	70	11.1	149	1:6.5
	2000	23	13	0	57	4.0	112	1:4.9
	2001	28	17	0	61	6.4	91	1:3.3
10A	1992	8	8	0	100	4.9	44	1:5.5
	1993	9	8	0	89	5.9	82	1:9.1
	1994	9	7	0	78	10.5	58	1:6.4
	1995	23	21	0	91	8.3	184	1:8.0
	1996	23	19	0	83	9.9	155	1:6.7
	1997	23	20	0	87	13.2	201	1:8.7
	1998	23	14	0	61	9.8	151	1:6.6
	1999	34	21	0	62	8.7	194	1:5.7
	2000	34	29	0	85	11.9	134	1:3.9
	2001	32	28	0	88	6.8	116	1:3.6

Table 2. Continued.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
12	1992	46	28	0	61	7.9	249	1:5.4
	1993	52	40	0	77	6.6	287	1:5.5
	1994[b]	52	26	0	50	7.1	266	1:5.1
	1995	64	37	0	58	5.9	258	1:4.0
	1996	64	33	0	52	5.2	201	1:3.1
	1997[c]	64	29	0	45	5.0	258	1:4.0
	1998[b]	64	27	0	42	5.6	172	1:2.7
	1999[b]	61	29	0	48	6.0	191	1:3.1
	2000[b]	61	31	0	51	6.3	119	1:2.0
	2001	45	16	0	36	3.0	70	1:1.6
14	1992	3	3	0	100	12.7	70	1:23.3
	1993	6	6	0	100	8.7	49	1:8.2
	1994	6	5	0	83	3.8	76	1:12.7
	1995	10	10	0	100	6.6	111	1:11.1
	1996	10	10	0	100	5.7	113	1:11.3
	1997	10	9	0	90	3.9	161	1:16.1
	1998	10	8	0	80	6.0	124	1:12.4
	1999	10	9	0	90	7.9	157	1:15.7
	2000	10	9	0	90	4.5	100	1:10.0
	2001	13	11	0	85	3.5	124	1:9.5
15	1992	35	32	0	91	6.1	363	1:10.4
	1993	41	37	0	90	9.0	376	1:9.2
	1994	41	39	0	95	7.9	329	1:8.0
	1995	51	44	0	86	7.8	408	1:8.0
	1996	51	43	0	84	7.1	337	1:6.6
	1997	51	37	0	73	6.8	346	1:6.8
	1998	51	44	0	86	8.7	287	1:5.6
	1999	60	50	0	83	7.5	386	1:6.4
	2000	60	44	0	73	8.2	212	1:3.5
	2001	60	34	0	57	8.9	256	1:4.3
16	1992	8	7	0	88	6.0	66	1:8.3
	1993	10	9	0	90	6.4	71	1:7.1
	1994	10	10	0	100	6.6	103	1:10.3
	1995	14	12	0	86	3.8	90	1:6.4
	1996	14	9	0	64	5.4	65	1:4.6
	1997	14	10	0	71	10.2	94	1:6.7
	1998	14	11	0	79	6.3	79	1:5.6
	1999	14	14	0	100	6.5	89	1:6.4
	2000	14	13	0	93	6.2	78	1:5.6
	2001	17	10	0	59	6.3	65	1:3.8

Table 2. Continued.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
16A	1992	4	4	0	100	5.3	42	1:10.5
	1993	5	4	0	80	5.8	20	1:4.0
	1994	5	3	0	60	15.7	43	1:8.6
	1995[d]	7	6	0	86	6.9	38	1:5.4
	1996	7	2	0	29	2.0	41	1:5.9
	1997	7	5	0	71	5.0	33	1:4.7
	1998	7	5	0	71	8.2	43	1:6.1
	1999	7	5	0	71	7.8	21	1:3.0
	2000	7	3	0	43	8.7	21	1:3.0
	2001	7	6	0	86	4.3	13	1:1.9
17	1992	31	16	0	52	9.6	87	1:2.8
	1993	31	17	0	55	8.7	64	1:2.1
	1994	31	13	0	42	8.7	61	1:2.0
	1995	35	13	0	37	7.9	66	1:1.9
	1996	35	8	0	23	3.3	45	1:1.3
	1997	35	11	0	31	5.4	37	1:1.1
	1998	35	4	0	11	4.3	26	1:0.7
	1999	35	11	0	31	4.5	55	1:1.6
	2000[b]	35	12	0	34	5.8	23	1:0.7
	2001	22	2	0	9	4.5	25	1:1.1
19	1992	12	9	0	75	6.8	51	1:4.3
	1993	12	10	0	83	6.8	52	1:4.3
	1994	12	8	0	67	6.8	34	1:2.8
	1995	14	8	0	57	5.5	71	1:5.1
	1996	14	9	0	64	4.3	44	1:3.1
	1997	14	9	0	64	6.9	156	1:11.1
	1998	14	10	0	71	3.4	37	1:2.6
	1999	14	7	0	50	3.7	42	1:3.0
	2000	14	7	0	50	5.6	29	1:2.1
	2001	12	2	0	17	14.0	15	1:1.3
20	1992	10	8	0	80	7.6	49	1:4.9
	1993	12	7	0	58	11.6	38	1:3.2
	1994	12	7	0	58	8.9	44	1:3.7
	1995	14	5	0	36	8.6	48	1:3.4
	1996	14	7	0	50	3.6	57	1:4.1
	1997	14	6	0	43	4.0	34	1:2.4
	1998	14	8	0	57	12.1	43	1:3.1
	1999	14	6	0	43	3.8	41	1:2.9
	2000	14	5	0	36	11.4	23	1:1.6
	2001	14	5	0	36	8.4	17	1:1.2

[a] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

[b] Some permits not sold.

[c] One permittee returned tag prior to season start.

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

Table 3. Summary of All Known Moose Mortalities by Unit, 1992-present.

Unit/ Year	Mortality Agent: Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
8							
1992	0	0	1	0	0	0	1
1993	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0
1995	0	0	1	0	0	0	1
1996	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0
8A							
1992	0	2	1	0	0	0	3
1993	0	1	1	0	0	0	2
1994	1	0	0	0	0	0	1
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0
1999	0	1	0	0	0	0	1
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0
10							
1992	4	1	2	0	0	0	7
1993	0	1	0	0	0	0	1
1994	0	0	0	0	0	0	0
1995	1	0	0	0	0	0	1
1996	0	1	0	0	0	1	2
1997	0	1	0	0	0	0	1
1998	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0
2000	0	0	0	1	0	0	1
2001	0	0	0	0	0	0	0
10A							
1992	3	4	0	1	0	1	9
1993	2	3	1	0	0	0	6
1994	0	1	0	0	0	0	1
1995	2	0	0	0	0	0	2
1996	0	1	1	0	0	0	2
1997	0	2	0	0	0	0	2
1998	0	0	0	0	0	0	0
1999	0	0	0	0	0	4	4
2000	0	2	0	0	0	0	2
2001	0	1	0	0	0	0	1

Table 3. Continued.

Unit/ Year	Mortality Agent: Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
12							
1992	2	4	2	0	0	1	9
1993	1	1	2	0	0	0	4
1994	0	0	1	0	0	0	1
1995	0	1	3	0	0	1	5
1996	2	0	2	0	0	3	7
1997	0	1	1	0	0	2	4
1998	0	0	0	0	0	0	0
1999	2	0	0	0	0	2	4
2000	0	0	0	1	0	0	1
2001	0	0	1	0	0	0	1
14							
1992	0	7	0	0	0	0	7
1993	0	3	0	0	0	0	3
1994	0	2	0	0	0	0	2
1995	0	1	1	1	0	0	3
1996	0	1	0	0	0	0	1
1997	0	0	0	0	0	0	0
1998	2	0	0	0	0	1	3
1999	2	0	0	0	0	0	2
2000	0	3	0	0	0	0	3
2001	1	0	0	0	0	0	1
15							
1992	3	5	0	3	0	2	13
1993	2	8	0	0	0	2	12
1994	0	7	1	1	0	2	11
1995	3	1	2	3	0	1	10
1996	2	2	0	3	0	1	8
1997	1	12	1	2	0	0	16
1998	3	2	3	0	0	2	10
1999	1	0	0	0	0	2	3
2000	5	3	0	3	0	0	11
2001	0	6	1	0	0	1	8
16							
1992	2	7	0	0	0	0	9
1993	1	7	1	0	0	0	9
1994	1	0	0	0	0	0	1
1995	0	1	0	0	0	0	1
1996	0	2	1	0	0	0	3
1997	0	1	0	0	0	0	1
1998	1	0	0	0	0	1	2
1999	1	0	0	0	0	0	1
2000	0	0	0	0	0	0	0
2001	0	2	1	0	0	0	3

Table 3. Continued.

Unit/ Year	Mortality Agent: Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
16A							
1992	0	0	0	0	0	0	0
1993	1	5	0	0	0	0	6
1994	0	1	0	0	0	0	1
1995	0	0	0	0	0	0	0
1996	0	2	0	0	0	0	2
1997	0	0	0	0	0	1	1
1998	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0
17							
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994	0	0	0	0	0	3	3
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0
1998	0	0	0	0	0	1	1
1999	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0
19							
1992	0	0	0	0	0	0	0
1993	0	2	0	0	0	0	2
1994	0	1	0	0	0	0	1
1995	1	0	0	0	0	0	1
1996	0	0	0	0	0	0	0
1997	0	0	0	0	0	1	1
1998	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0
2000	0	1	0	0	0	0	1
2001	0	0	0	0	0	0	0
20							
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994	0	1	0	0	0	0	1
1995	3	0	0	0	0	0	3
1996	0	0	0	0	0	1	1
1997	0	1	0	0	0	1	2
1998	0	1	0	0	0	0	1
1999	0	0	0	0	0	0	0
2000	0	1	0	0	0	0	1
2001	0	0	0	0	0	0	0

PROGRESS REPORT
SURVEYS AND INVENTORY

STATE:	Idaho	**JOB TITLE:**	Moose Surveys and Inventories
PROJECT:	W-170-R-26		
SUBPROJECT:	3, McCall	**STUDY NAME:**	Big Game Population Status, Trends, Utilization, and Associated Habitat Studies
STUDY:	I		
JOB:	6		

PERIOD COVERED: July 1, 2001 to June 30, 2002

MOOSE - SOUTHWEST REGION (MCCALL)

Abstract

One moose was harvested in Hunt Area 19A in 2001. Three moose were harvested in Hunt Areas 20A-1, 20A-2, and 20A-3, combined, during the 2001 season. Ten permits were issued in these three areas combined in 2001, including 3 rain-check permits held over from the 2000 season. Hunter success for these three hunt areas combined was 30%. Both permit holders harvested a moose in Hunt Area 25. Two moose were harvested in Hunt Area 26 in 2001. No population trend or herd composition surveys were conducted in Units 19A, 20A, 25, or 26 during the reporting period.

UNITS 19A, 20A, 25, AND 26

CONTROLLED HUNT AREA 20A

Management Direction

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

Background

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

Population Surveys

No moose population surveys were conducted during the reporting period.

Harvest Characteristics

Moose hunting seasons last 86 days in Units 19A, 20A, 25, and 26 (Table 1). Harvest data are generated through a mandatory hunter report requirement. One permit holder harvested a moose in Hunt Area 19A (Table 2). No moose were harvested in Hunt Areas 20A-1 and 20A-2 in 2001. Three moose were harvested in Hunt Area 20A-3 in 2001. One permit holder in each of Hunt Areas 20A-1, 2, and 3 were rain-check recipients from the 2000 hunting season. Hunter success was 30% for all three hunt areas combined. Both permit holders harvested a moose in Hunt Area 25. Two moose were harvested in Hunt Area 26 in 2001.

Management Implications

Because reliable population data are not available and difficult to generate, permit levels have been conservative. The frequency and location of reports indicate pioneering populations exist in game management units adjacent to or near Units 20A and 26 (e.g., 19A, 24, 25). Two, 2-permit moose hunts were implemented in Units 19A (Hunt Area 19A) and 25 (Hunt Area 25) in 1999. All areas need intensive data collection to determine population levels, trends, and habitat selection.

Table 1. The 2001 Season Structure for Controlled Moose Hunts in the Southwest Region.

	Season			
Hunt Area	Dates	Length	Permits	Open For
19A	30 August-23 November	86 days	2	Antlered
20A-1	30 August-23 November	86 days	3[a]	Antlered
20A-2	30 August-23 November	86 days	4[a]	Antlered
20A-3	30 August-23 November	86 days	3[a]	Antlered
25	30 August-23 November	86 days	2	Antlered
26	30 August-23 November	86 days	2	Antlered

[a] Includes one rain-check tag recipient from the 2000 hunting season.

Table 2. Moose harvest and drawing odds by Hunt Area in Units 19A, 20A, 25, and 26, 1995-2001.

Unit	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
19A[b]	1999	2	2	0	100	18.5	39	1:19.5
	2000	2	1	0	50	-	17	1:8.5
	2001	2	1	0	50	-	18	1:9.0
20A	1995	7	7	0	100	3.7	38	1:5.4
	1996	7	4	0	57	2.8	38	1:5.4
	1997	7	5	0	71	5.2	26	1:3.7
	1998	7	3	0	43	3.0	19	1:2.7
	1999	7	4	0	57	2.8	14	1:2.0
	2000[c]	7	2	0	29	15.0	19	1:2.7
	2001[d]	10	3	0	30	4.7	10	1:1.0
25[b]	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
26[e]	1997	2	2	0	100	1.5	23	1:11.5
	1998	2	1	0	50	7.0	19	1:9.5
	1999	2	1	0	50	2.0	14	1:7.0
	2000	2	0	0	0	-	5	1:2.5
	2001	2	2	0	100	3.5	4	1:2.0

[a] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.
[b] Hunt established in 1999.
[c] Three permit holders opted for a rain-check tag in 2001.
[d] Includes three rain-check tag recipients from the 2000 hunting season.
[e] Hunt established in 1997.

PROGRESS REPORT
SURVEYS AND INVENTORY

STATE:	Idaho	**JOB TITLE:**	Moose Surveys and Inventories
PROJECT:	W-170-R-26		
SUBPROJECT:	4	**STUDY NAME:**	Big Game Population Status, Trends, Utilization, and Associated Habitat Studies
STUDY:	I		
JOB:	6		

PERIOD COVERED: July 1, 2001 to June 30, 2002

MOOSE –MAGIC VALLEY REGION

Abstract

The frequency of observations suggest moose have increased in the Big Wood River and Trail Creek areas of Units 48 and 49, and in all of Unit 56. Legal harvest was authorized in the Magic Valley Region for the first time in 1999 in Unit 56. Beginning in the fall of 2001, harvest was authorized in Units 44, 48, and 49. Seven permits were issued in the two hunt areas and all hunters were successful.

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

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 from throughout the Magic Valley Region, but there were no viable, resident populations. In recent years, moose numbers in the region have increased as a result of natural ingress and transplants, and viable populations, capable of sustaining limited harvest, occur in Units 44, 48, 49 and Unit 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 Willow Creek in Unit 44, the Big Wood River in Unit 48 and in the Trail Creek drainage on the Units 48-49 border. The increase in moose numbers is primarily the result of movement of moose from Unit 50. Moose released in Unit 44 probably contributed to an increase in moose population in this unit. During the 2001-2002 reporting period, observations suggested there were 90+ moose in the Willow Creek, Big

Wood, and Trail Creek areas. Populations in the Sublett area (Unit 56) appear to be stable and observations are common.

Harvest Characteristics

Hunting season length for antlered moose in both hunt areas in the Magic Valley Region were 86 days in 2001 (Table 1). Two permits were offered for the first time in Hunt Area 44 (includes part of Unit 44 and all of Units 48 and 49) in 2001. Both permit holders were successful in harvesting an adult bull moose and both were taken in Unit 48 (Table 2). Five antlered permits were again offered in Hunt Area 56 (includes Units 56, 73, and 73A). Four bulls were harvested with 1 taken in Unit 56 and 3 in Unit 73 (Table 2). A permit holder took one illegal cow moose in Unit 73.

Other sources of moose mortality in the Region during the reporting period were two illegal female kills, one injured male dispatched by a Department employee and three found dead from unknown causes.

Trapping And Transplanting

In 1981-1982, the Department identified that suitable, unoccupied moose habitat existed in Units 43 and 44 and requested that the Sawtooth National Forest conduct an environmental analysis for the establishment of a moose population on the Fairfield Ranger District. Upon completion of the analysis in 1983, arrangements were made to translocate "problem" moose from urban areas in the Upper Snake and Southeast Regions to Units 43 and 44. During the period from March 1986 through June 2000, 31 moose (6 adult or yearling bulls, 16 adult or yearling females, 7 male calves, and 2 female calves) were released.

No moose were released in the region during this reporting period. Two radio-collared moose, released in the Little Smoky drainage on the Unit 43-44 border in 1997, have moved a substantial distance from the release site. One of the moose has been reported several times near Idaho City in Unit 39 and the other has been located a numerous amount of times on Bennett Mountain in Unit 45.

Management Implications

Efforts to reintroduce moose in Units 43 have not been successful in establishing a moose population in this unit. Most of the released moose have been illegally killed or have moved from the area. However, numerous moose observations were made in Unit 43 during the 2001-2002 winter while Department employees were conducting elk feeding operations and sightability surveys.

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

Table 1. 2001 Season Structure for Controlled Moose Hunts in the Magic Valley Region.

Hunt Area	Season		Permits	Open For
	Dates	Length		
44	30 August-23 November	86 days	2	Antlered
56	30 August-23 November	86 days	5	Antlered

Table 2. Summary of Moose Harvest and Drawing Odds by Hunt Area, 2000-2001.

Unit	Year	Permits	Harvest		% Success	Days/ Hunter	First Choice Applicants	Drawing Odds
			M	F				
44[a]	2001	5	5	0	100	3.8	21	1:4.2
56	2000	5	5	0	100	3.8	21	1:4.2
	2001	5	4	1	100	19.2	31	1:6.2

[a] Hunt established in 2001.

PROGRESS REPORT
SURVEYS AND INVENTORY

STATE:	Idaho	**JOB TITLE:**	Moose Surveys and Inventories
PROJECT:	W-170-R-26		
SUBPROJECT:	5	**STUDY NAME:**	Big Game Population Status, Trends, Utilization, and Associated Habitat Studies
STUDY:	I		
JOB:	6		

PERIOD COVERED: July 1, 2001 to June 30, 2002

MOOSE - SOUTHEAST REGION

Abstract

The number of moose permits increased in 2001 with 150 antlered-only and 70 antlerless-only permits. Mandatory harvest reports identified a minimum of 113 antlered and 34 antlerless moose harvested. Data for controlled hunt number 3062 (Units 56, 73, and 73A) are reported under the Magic Valley Region-subproject 4.

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

CONTROLLED HUNT AREAS 66A-1, 66A-2, 70, 71-1, 71-2, 71-3, 72, 73, 73A, 74, 75-1, 75-2, 76-1, 76-2, 76-3, 76-4, 76-5, 76-6, 77, 78

Management Direction

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

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

Background

Prior to the 1950s, there were too few moose in the Southeast Region to justify harvest. The first hunt for moose in the region was held in 1959 when 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 good for any moose in several units from 1975 to 1990. An average of 80% of that harvest was antlered moose. In 1991, antlerless-only hunts were instituted in Units 66A and 76. Since 1991, permits have been issued for antlered or antlerless-only moose. Antlerless moose hunts start later than antlered hunts to provide more time for calf development alongside their cows.

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

Moose aerial surveys were conducted in 2 units in 2002. During January 2002, search units were flown in Hunt Area 66A and Hunt Area 76-3.

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

In Hunt Area 76-3, 13 search units were stratified as high or low likelihood of moose and 10 search units were flown for sightability. One hundred four moose were counted in these 10 search units consisting of 41 cows, 48 bulls, and 14 calves (Table 1). Estimates of 176 (±40) total moose including 71 (±20) cows, 78 (±20) bulls, and 25 (± 8) calves were generated using the Hiller-Siloy Wyoming-based model. Overall herd composition was estimated as 41% cows, 45% bulls and 14% calves. The population estimate of 176 in 2002 was very close to the 167 estimated in 1995. Average moose seen was 9.8 in low units, and 11.2 in high units. Search units may need to be re-stratified or have stratification by moose likelihood deleted in future surveys.

Harvest Characteristics

Hunting season lengths for antlered and antlerless moose remained at 86 days (30 August-23 November) and 40 days (15 October-23 November), respectively, in 2001 (Table 2). Two hundred twenty permits (150 antlered and 70 antlerless) were issued. A telephone survey to estimate total harvest was not conducted. Minimum reported harvest was available through a mandatory mortality report of successful hunters. Reported harvest totaled 174; 123 antlered and 51 antlerless moose (Table 3).

Minimum overall hunter success rate for the region was 79% (for the second year in a row), comprised of 73% for antlerless-only permits and 82% for antlered-only permits (Table 3). These are extremely high success rates for hunting cervids. Mean number of days afield for successful hunters, by hunt, ranged from 2.0-26.0 days for bull tag holders and only 1.5-4.4 days for antlerless only tag holders in 2001 (Table 3). Mean participation days are much lower for those with antlerless-only tags and selectivity in choosing a bull to fill an antlered only tag is probably a factor.

Other sources of moose mortality are illegal, Indian harvest, natural, road-kills, and other. For the 2000-2001 reporting period, 12 non-harvest mortalities were reported, including 5 road-kills (Table 4). Reporting of non-hunting mortalities is very low; perhaps less than half of the known non-hunting mortalities reach Department records. Reports continue to come in from outlying areas, and data compilation for the 2001-2002 reporting period is not yet complete.

Climatic Conditions

Winter 2001-2002 snow depths were slightly below the 30-year average, with snow levels at 70-100% of average in most drainages. Average temperatures during the winter was similar to the 30-year norm.

Habitat Conditions

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

Management Implications

Aerial surveys and the mandatory check of moose harvested provide the majority of information available for management. Use of sightability models such as Anderson (1994) and Unsworth et al. (1994) for estimating populations appear to be promising and their use should continue. Continued conservative permit levels might allow for passive population expansion and growth, particularly in those areas being newly colonized. With continued high harvest success rates, and sightability models showing no decrease in population levels, more harvest opportunity could be made available. Standardization of flight and aerial survey techniques is proving valuable and should be continued.

These high success rates in conjunction with high participation rates point to 2 observations: 1) tremendous selectivity is being used in harvesting specific animals-particularly bulls, and 2) the difficulty in drawing bull permits drives hunters to make sure they fill their permit. It seems the goals of a high-quality opportunity for mature bulls in the harvest are being met.

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

Table 1. Total observed moose by sex/age class, and model estimates of moose from aerial surveys in the Southeast Region, 1993-2002.

Hunt Area/	Observed		Estimate	
Year	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	104	117:100:34	176±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. 2001 Season Structure for Controlled Moose Hunts in the Southeast Region.

	Season			
Hunt Area	Dates	Length	Permits	Open For
66A	30 August-23 November	86 days	30	Antlered
66A	15 October-23 November	40 days	15	Antlerless
70	30 August-23 November	86 days	5	Antlered
71-1	30 August-23 November	86 days	5	Antlered
71-1	15 October-23 November	40 days	5	Antlerless
71-2	30 August-23 November	86 days	5	Antlered
71-2	15 October-23 November	40 days	5	Antlerless
72	30 August-23 November	86 days	5	Antlered
74	30 August-23 November	86 days	5	Antlered
75	30 August-23 November	86 days	10	Antlered
75	15 October-23 November	40 days	5	Antlerless
76-1	30 August-23 November	86 days	25	Antlered
76-1	15 October-23 November	40 days	20	Antlerless
76-2	30 August-23 November	86 days	20	Antlered
76-2	15 October-23 November	40 days	10	Antlerless
76-3	30 August-23 November	86 days	20	Antlered
76-3	15 October-23 November	40 days	10	Antlerless

Table 3. Summary of Moose Harvest and Drawing Odds by Hunt Area, 1992-2001.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
66A	1992	20	15	3	90	6.7	184	1:9.2
	1993	35	24	9	94	7.3	206	1:5.9
	1994	35	22	10	91	4.9	232	1:6.6
	1995	42	28	9	88	7.4	294	1:7.0
	1996	42	24	8	76	4.1	231	1:5.5
	1997	42	26	7	79	7.7	247	1:5.9
	1998	42	22	8	71	4.7	232	1:5.5
	1999	42	22	12	81	5.2	273	1:6.5
	2000	42	27	7	81	5.7	194	1:4.6
	2001	45	24	12	80	4.1	220	1:4.9
70	1993	5	3	0	60	7.5	19	1:3.8
	1994	5	5	0	100	5.5	8	1:1.6
	1995	5	4	0	80	11.6	36	1:7.2
	1996	5	3	0	60	6.0	10	1:2.0
	1997	5	4	0	80	21.0	29	1:5.8
	1998	5	5	0	100	6.0	16	1:3.2
	1999	5	4	0	80	11.3	30	1:6.0
	2000	5	4	0	80	20.0	21	1:4.2
	2001	5	4	0	80	11.8	15	1:3.0
71	1992	5	5	0	100	8.0	38	1:7.6
	1993	10	10	0	100	10.4	39	1:3.9
	1994	10	10	0	100	9.1	66	1:6.6
	1995	10	10	0	100	5.9	49	1:4.9
	1996	10	8	0	80	5.8	73	1:7.3
	1997	10	9	0	90	8.1	52	1:5.2
	1998	10	9	0	90	6.8	54	1:5.4
	1999	15	6	4	67	6.1	75	1:5.0
	2000	15	7	4	73	11.0	42	1:2.8
	2001	20	9	5	70	7.1	54	1:2.7
72	1992	5	5	0	100	14.4	22	1:4.4
	1993	5	5	0	100	2.3	29	1:5.8
	1994	5	5	0	100	4.7	21	1:4.2
	1995	5	5	0	100	5.2	32	1:6.4
	1996	5	3	0	60	6.0	27	1:5.3
	1997	5	5	0	100	3.0	28	1:5.6
	1998	5	4	0	80	5.8	34	1:6.8
	1999	5	5	0	100	6.8	47	1:9.4
	2000	5	5	0	100	5.4	26	1:5.2
	2001	5	5	0	100	1.8	39	1:7.8
74	1992	5	5	0	100	5.0	14	1:2.8
	1993	5	5	0	100	4.5	38	1:7.6
	1994	5	2	0	40	11.0	11	1:2.2
	1995	5	5	0	100	5.2	16	1:3.2
	1996	5	3	0	60	2.3	22	1:4.4
	1997	5	3	0	60	23.3	18	1:3.6
	1998	5	3	0	60	12.0	25	1:5.0
	1999	5	2	0	40	4.3	19	1:3.8

Table 3. Continued.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
	2000	5	4	0	80	13.7	12	1:2.4
	2001	5	4	0	80	34.7	16	1:3.2
75	1992	5	5	0	100	8.5	31	1:6.2
	1993	5	3	0	60	8.3	22	1:4.4
	1994	5	4	0	80	14.0	30	1:6.0
	1995	5	5	0	100	19.3	36	1:7.2
	1996	5	4	0	80	9.3	27	1:5.3
	1997	15	8	5	87	5.2	48	1:3.2
	1998	15	9	2	73	8.9	36	1:2.4
	1999	15	10	4	93	8.9	41	1:2.7
	2000	15	5	4	60	3.8	28	1:1.9
	2001	15	10	4	93	7.1	26	1:1.7
76	1992	85	53	16	81	5.9	457	1:5.4
	1993	85	54	20	87	9.0	344	1:4.0
	1994	85	56	19	88	7.0	380	1:4.5
	1995	94	46	23	73	10.3	420	1:4.5
	1996	94	50	26	81	4.4	447	1:4.8
	1997	84	48	19	80	5.3	375	1:4.5
	1998	84	40	18	69	6.4	345	1:4.1
	1999	84	42	29	85	7.0	480	1:5.7
	2000	84	45	19	76	5.6	249	1:3.0
	2001	105	51	27	74	4.8	326	1:3.1
77	1992	5	5	0	100	7.8	52	1:10.4
	1993	5	4	0	80	17.0	5	1:1.0
	1994	5	5	0	100	13.0	29	1:5.8
	1995	7	6	0	86	18.6	21	1:3.0
	1996	7	4	0	57	11.5	26	1:3.7
	1997	7	6	0	86	7.3	20	1:2.9
	1998	7	4	0	57	6.3	28	1:4.0
	1999	7	6	0	86	14.2	28	1:4.0
	2000	7	7	0	100	7.1	12	1:1.7
	2001	10	8	0	80	7.6	24	1:2.4
78	1992	5	5	0	100	25.5	39	1:7.8
	1993	5	5	0	100	9.0	26	1:5.2
	1994	5	5	0	100	15.6	32	1:6.4
	1995	7	6	0	86	15.0	28	1:4.0
	1996	7	6	0	86	13.8	58	1:8.3
	1997	7	6	0	86	21.7	32	1:4.6
	1998	7	7	0	100	11.0	34	1:4.9
	1999	7	7	0	100	10.4	33	1:4.7
	2000	7	7	0	100	13.9	16	1:2.3
	2001	10	9	0	90	10.9	27	1:2.7

[a] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

Table 4. Summary of reported nonhunting moose mortalities in the Southeast Region, 1995-2002.

	Mortality Agent						
Year	Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
1997	0	1	3	5	0	1	10
1998	0	1	4	3	0	0	8
1999	0	4	5	1	0	4	14
2000	0	4	5	1	0	2	12
2001[a]	1	1	6	0	0	3	11

[a] All reports not in yet; additional reports likely.

PROGRESS REPORT
SURVEYS AND INVENTORY

STATE:	Idaho	**JOB TITLE:**	Moose Surveys and Inventories
PROJECT:	W-170-R-26		
SUBPROJECT:	6	**STUDY NAME:**	Big Game Population Status, Trends, Utilization, and Associated Habitat Studies
STUDY:	I		
JOB:	6		

PERIOD COVERED: July 1, 2001 to June 30, 2002

MOOSE - UPPER SNAKE REGION

Abstract

Hunting season lengths for antlered and antlerless moose remained at 86 days (30 August-23 November) and 40 days (15 October-23 November), respectively, in 2001 (Table 1). Twenty controlled hunts with 353 permits were offered for antlered moose in the Upper Snake Region in 2001. These totals represent an increase of 33 permits over 2000 levels. A total of 305 antlered moose were harvested (86% hunter success) as determined by mandatory harvest reports. The mean antler spread for all antlered hunts combined was 36.43 inches (N=270, range 16.00-54.00 inches). Drawing odds for all antlered moose hunts combined were 4.2:1 and ranged from 2.0:1 (Hunt Area 67-2) to 8.8:1 (Hunt Area 50). An additional six hunts with 64 permits were offered for antlerless moose in 2001, resulting in the harvest of 52 animals (81% hunter success). Drawing odds were 1.0:1 for all antlerless hunts offered in the region.

No population surveys were conducted specifically for moose during this reporting period due to fiscal constraints. However, 387 moose were counted incidental to an elk sightability survey on the Sand Creek (Unit 60A) winter range.

A droughty summer, followed by a winter with near average snowfall, resulted in a large number of nuisance and depredation complaints during the 2001-2002 winter. Twenty-four depredation complaints were received during this reporting period. All involved moose were eating stored hay and were resolved with some combination of hazing, temporary fencing and/or translocation of offending animals. Most of these depredations were reported in Units 63 (8) and 63A (7). A total of 98 moose were darted and translocated, mostly due to nuisance complaints around residences or in and around towns. The bulk of these complaints originated in Units 60A (23), 63 (28), 63A (11), and 69 (20).

UNITS 59, 59A

CONTROLLED HUNT AREA 59

Description: Hunt Area 59 - All of Units 59 and 59A.

Background

Old Hunt Areas 59 and 59A were combined in 1993 to form the current Hunt Area 59. Twenty-two antlered-only permits were offered in 2001 (Table 2). Prior to 1993, two hunts with a total of 12 antlered-only permits were offered in these units. Old Hunt Area 59 had been open continuously since 1974 with permit levels fluctuating between four and eight with over 90% hunter success reported. Hunt Area 59A was closed in 1978 after one moose was harvested in the preceding four years. In 1983, this hunt was reopened and two permits were issued annually through 1988 with 100% hunter success. Four permits were issued each season from 1989-1992 with 100% hunter success. Permit levels have increased steadily since that time.

Population Surveys

A moose trend count was flown most recently in Units 59 and 59A on December 17 and 18, 1994. A Bell Model G47 Soloy helicopter was used to fly the survey. Counting conditions were good, with eight or more inches of relatively new snow cover present over the entire area. All probable moose habitat was surveyed. A total of 179 moose (129 in Unit 59 and 50 in Unit 59A) with a bull:cow:calf ratio of 44:100:54 was counted on the survey. Of the 40 bulls counted, 13 were classified as yearlings, 20 as adults, and 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 conducted in 1991-1992, 1993-1994, and 1999-2000, moose were counted on an incidental basis. In 1991-1992, 46 moose were counted in Unit 59 and 71 in Unit 59A. In 1993-1994, a total of 49 moose were observed in Unit 59 and 46 in Unit 59A (unclassified). The 1999-2000 survey resulted in a total count of 90 moose, including 10 bulls, 19 cows, 13 calves, and 48 unclassified.

Harvest Characteristics

Table 2 summarizes controlled hunt harvest data from 1992 to present. No telephone survey of moose permit holders has been conducted since 1995. Harvest estimates have been derived from mandatory harvest reports from 1996 to present and are not directly comparable with previous telephone survey estimates. Twenty-two permits for antlered moose were offered in 2001 and 19 animals were harvested for an 86% hunter success rate. Mean antler spread was 32.10 inches (N=16) and ranged from 25.00-40.00 inches.

Statewide drawing odds have improved substantially in most units due to regulation changes implemented in 1986. In 2001, drawing odds were 4.0:1 in Hunt Area 59.

All known nonhunting moose mortalities for Units 59 and 59A from 1992 through 2001 are summarized in Table 3. Known illegal kill was a serious problem in the early 1980s when it nearly equaled controlled harvest, but has been of little significance based on documented mortalities in recent years.

Climatic Conditions

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

Habitat Conditions

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

Depredations, Trapping, and Transplanting

No depredations, trapping, or translocation operations occurred during this reporting period. However, 31 moose (21 cows and 10 bulls) that were darted in other units as a result of nuisance and/or depredation complaints, were released along Medicine Lodge Creek. These animals came from Units 60A (8), 63 (12), 63A (5), and 69 (6).

Management Implications

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

UNITS 64, 65, AND 67

CONTROLLED HUNT AREAS 64, 65, 67-1, 67-2

Description: Hunt Area 64 - All of Unit 64.
Description: Hunt Area 65 - All of Unit 65.
Description: Hunt Area 67-1 - That portion of Unit 67 north and west of State Highway 31.
Description: Hunt Area 67-2 - That portion of Unit 67 south and east of State Highway 31.

Background

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

Hunting opportunity has increased in these units from one hunt with two permits during the early 1980s to five hunts with 74 permits (64 permits for antlered moose and 10 for antlerless) in 2001 (Table 4).

Population Surveys

Moose were counted in Units 64, 65, and 67 incidental to elk surveys during the 2000-2001 winter. A total of 120 moose were observed (31 in Unit 64, 42 in Unit 65, and 47 in Unit 67).

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

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

Harvest Characteristics

Hunters harvested 55 antlered moose on 64 permits (86% hunter success rate) and 9 antlerless moose on 10 permits (90% hunter success) in 2001 (Table 4). No telephone survey of moose permit holders has been conducted since 1995. Harvest estimates have been derived from mandatory harvest reports from 1996 to present, and are not directly comparable with previous telephone survey estimates. Telephone survey results for years prior to 1996 are shown in Table 4. Drawing odds ranged from 1.0:1 in Hunt Area 64 (antlerless only) to 3.4:1 in Hunt Area 64 (antlered-only) in 2001. Mean antler spreads were 40.18 (N=13, range 31.00-50.00), 31.53 (N=12, range 25.00-40.00), 36.97 (N=13, range 23.00-51.50) and 37.71 (N=11, range 18.50-49.50) for Hunt Areas 64, 65, 67-1, and 67-2, respectively. Table 5 summarizes all known nonhunting moose mortalities in Units 64, 65, and 67 from 1992 to 2001.

Climatic Conditions

Spring and summer weather conditions during 2001 were warmer and significantly drier than normal. Winter precipitation was at or slightly above normal and temperatures were below normal. Weather conditions for the spring of 2002 have been characterized by periods of both higher and lower than normal temperatures and near normal precipitation levels.

Habitat Conditions

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

Depredations, Trapping, and Transplanting

Three moose depredation complaints were received from Unit 65 during this reporting period. All involved moose were getting into stored hay and were resolved with hazing and/or temporary paneling. Three moose were darted and removed from Units 64 (2) and 67 (1) during March 2002 due to nuisance complaints. No moose were translocated into this group of units.

Management Implications

It is unknown if the fewer moose counted incidental to elk surveys during 2000-2001 winter, compared to 1998, is a reflection of population change or differences in distribution due to mild wintering conditions. A 1989 aerial survey found approximately half the number of moose censused in 1985. A shift in moose distribution resulting from the drought and severe winter conditions was partially responsible for the low count. Also mortality during the 1988-1989 winter was above normal. Permit levels were maintained for the 1989 and 1990 seasons, but were adjusted in 1991 in response to data analysis. Moose populations appear to have rebounded rapidly to levels at or above those present prior to the 1988-1989 die-off. Consequently, permit levels increased in 1993, 1995, 1997, and again in 1999. Additionally, an antlerless-only hunt was initiated in Unit 64 in 1993.

UNITS 66, 69

CONTROLLED HUNT AREAS 66-1, 66-2, 69-1, 69-2, 69-3

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

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

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

Description: 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.

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

Background

Five hunts, with a total of 90 antlered-only permits and 3 hunts with 25 antlerless permits, were offered in Units 66 and 69 in 2001 (Table 6). The moose population in these units increased at a fairly rapid rate during the late 1970s when populations elsewhere in the Upper Snake Region were decreasing or remaining static. Moose populations appeared to have continued to increase, particularly in the west half of Unit 69.

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

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

Population Surveys

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

A total of 60 moose (most unclassified) were counted in Unit 66 in 2000. Other recent totals include 35 in 1999, 62 in 1997, 32 in 1995, 98 in 1994, and 26 in 1992. In Unit 69, 257 moose were tallied in 2000. This total included 6 bulls, 39 cows, 38 calves, and 174 unclassified moose. Other recent totals include 121, 168, 231, and 193 in 1992, 1995, 1997, and 1999, respectively.

Harvest Characteristics

Table 6 summarizes controlled hunt harvest since 1992. No telephone survey of moose permit holders has been conducted since 1995. Harvest estimates have been derived from mandatory harvest reports from 1996 to present, and are not directly comparable with previous telephone survey estimates. Eight hunts with a total of 129 permits were offered in these two units in 2001. A total of 94 antlered moose were harvested on 104 permits (90% success). An additional 17 antlerless moose were harvested on the 25 permits (68% success) offered in Hunt Areas 69-1, 69-2 and 69-3. Drawing odds have improved significantly as a result of regulation changes implemented in 1986 and are shown in Table 6. Mean antler spreads were 36.52 (N=15, range 30.00-42.00), 35.94 (N=19, range 26.00-45.00), 37.85 (N=20, range 21.50-49.50), 37.10 (N=22,

range 29.00-50.00) and 36.28 (N=9, range 18.00-46.50) for Hunt Areas 66-1, 66-2, 69-1, 69-2, and 69-3, respectively.

A summary of all known nonhunting mortalities is presented in Table 7.

Climatic Conditions

Spring and summer weather conditions during 2001 were warmer and significantly drier than normal. Winter precipitation was near normal and temperatures were slightly below average. The spring of 2002 has been cooler than average with near normal precipitation.

Habitat Conditions

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

Depredations, Trapping, and Transplanting

Two moose depredation complaints were received from Unit 69 during this reporting period. Both involved moose eating stored hay and were resolved by hazing and/or temporary fencing. Twenty moose (18 cows and 2 bulls) were translocated in response to nuisance complaints in Unit 69, all from the outskirts of Idaho Falls. These animals were released in Units 50 (3), 51 (6), 59/59A (6), 63 (1), and back into Unit 69 (4).

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 1990's. Additionally an antlerless-only hunt has been offered since 1993.

UNITS 60, 60A, 61, 62, 62A

CONTROLLED HUNT AREAS 60, 60A, 61-1, 61-2, 61-3, 62, 62A

Description: Hunt Area 60 - All of Unit 60.

Description: Hunt Area 60A - That portion of Unit 60A south and east of the North Fork (Henry's Fork) Snake River and that portion within one mile north and west of the North Fork Snake River.

Description: Hunt Area 61-1 - That portion of Unit 61 west of East Dry Creek and the Yale-Kilgore Road.

Description: Hunt Area 61-2 - That portion of Unit 61 east of East Dry Creek and the Yale-Kilgore Road and west of U.S. Highway 191-20 and south and west of State Highway 87.

Description: Hunt Area 61-3 - That portion of Unit 61 north and east of State Highway 87 and north and east of U.S. Highway 191-20 EXCEPT that portion enclosed by the Big Springs Loop Road and U.S. Highway 191-20.
Description: Hunt Area 62 - All of Unit 62.
Description: Hunt Area 62A - All of Unit 62A.

Background

Eight hunts with a total of 130 antlered-only and 15 antlerless-only permits were offered in 2001 (Table 8).

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

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

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

Population Surveys

A population survey was conducted in Unit 62 and a portion of 62A during December 2000. The survey in 62A was not completed because of fiscal constraints. The final population estimate for Unit 62 was 366 moose (180 cows, 109 bulls, and 77 calves; Table 9). 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 through February 1990. Survey results indicated that moose populations had decreased substantially since the previous winter. Moose appeared to be in poor condition prior to the 1988-1989 winter following two years of drought, and significant winter losses probably occurred. Survey results are shown in Table 10.

A helicopter survey was conducted along the North Fork Snake River corridor between St. Anthony and the Highway 33 bridge in Hunt Area 60A in December 1991. Only the riparian

corridor was searched, so this should be considered a minimum count. A total of 37 moose were observed, including 2 bulls, 21 cows, and 14 calves.

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

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

Harvest Characteristics

Table 8 summarizes controlled hunt harvest and drawing odds for these units. No telephone surveys of moose permit holders have been conducted since 1995. Therefore, 1996-2001 harvest estimates have been derived from mandatory harvest reports and are not directly comparable with previous telephone survey estimates. One hundred thirty antlered-only moose permits were issued in 2001, resulting in the harvest of 119 animals (92% success) based on mandatory harvest reports. In addition, 13 moose were harvested on the 15 antlerless-only permits (87% success) in Hunt Area 60A. The mean antler spreads for these hunts combined was 36.58 (N=103). Mean antler spreads for individual hunts were 35.58 (N=21, range 21.80-47.50), 33.47 (N=6, range 23.00-44.50), 33.99 (N=16, range 16.00-49.50), 41.43 (N=10, range 22.00-54.00), 38.01 (N=16, range 29.30-49.00), 37.48 (N=18, range 25.50-48.50) and 36.17 (N=16, range 26.00-47.30) for Hunt Areas 60, 60A, 61-1, 61-2, 61-3, 62, and 62A, respectively.

Beginning in 1984, all known nonhunting moose mortalities were categorized by mortality agent and unit. Table 11 summarizes these records for Units 60, 60A, 61, 62, and 62A from 1992 through 2001.

Climatic Conditions

Spring and summer weather conditions during 2001 were much warmer and drier than normal. Winter precipitation was near the long-term average and temperatures were near normal. The spring of 2002 came late. Temperatures have been near normal while precipitation has been slightly below average.

Depredations, Trapping, and Transplanting

Two complaints were received regarding moose eating stored hay crops during this reporting period. These situations were resolved by hazing and/or temporary fencing. Thirty-six moose were translocated due to nuisance complaints during this reporting period. Totals of 23, 7 and 6 moose were darted in Units 60A, 62 and 60, respectively. These moose were released in Units 50 (8), 51 (2), 59/59A (8), 60 (1), 60A (15), 63 (1), and 63A (1).

Management Implications

The increase in desert-wintering moose has led to increased depredations and nuisance complaints during average to severe winters. Mortality during the 1988-1989 winter resulted in significant population declines. However, moose populations have rebounded rapidly to levels above those present prior to the 1988-1989 die-off. Consequently, permit levels have been increasing accordingly.

UNITS 50, 51, 58, 63, 63A

CONTROLLED HUNT AREAS 50, 51, 63

Description: Hunt Area 50 - All of Unit 50.
Description: Hunt Area 51 - All of Unit 51.
Description: Hunt Area 63A - All of Units 63 and 63A.

Background

In early 1980, six moose were released near the North Fork of the Big Lost River (Unit 50). Most initially remained close to their release site, but there has been egress to other areas. Reproduction has occurred, and additional transplants have augmented this population. An antlered-only hunt (50) was initiated in 1993.

A 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.

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

Hunt Area 50 was initiated in 1993 and had two permits until 1997 when it was increased to four. Hunt Area 51 was opened in 1999 with two antlered-only permits. Hunt 63A was initiated in 1987 with three antlered-only permits. Permit levels were increased to five in 1989 and eight in 1990. In 1991 permit levels were increased to 10 and split into two hunts, 63A-1 antlered only, and 63A-2 antlerless only, with five permits each. Unit 63 was added to Hunt Area 63A in 1999. The -1 and -2 designation was dropped for the two hunts in Hunt Area 63A prior to the 2001 season. Permit levels have continued to increase in both the antlered and antlerless hunts in Hunt Area 63A.

Population Surveys

No population surveys were conducted during this reporting period. However, moose were counted incidentally during elk sightability surveys in Unit 50 in 2000 and 1999. A total of 11 moose were counted in Unit 50, including two bulls, two cows, three calves, and three

unclassified animals in 2000. Six moose were observed in Unit 50 in 1999. Eighteen moose were observed in Unit 51 in 1999, including 7 bulls, 2 cows, 2 calves, and 7 unclassified animals.

Harvest Characteristics

Controlled hunt harvest and drawing odds are summarized in Table 12. A total of 23 antlered-only permits were issued in these units in 2001, resulting in the harvest of 18 animals (78% success) based on mandatory harvest reports. No telephone harvest survey has been conducted on moose permit holders since 1995. Therefore, caution should be exercised when comparing 1996-2001 mandatory harvest report results with earlier telephone survey data. In addition, 13 moose were harvested on 14 antlerless-only permits (93% success) in Hunt Area 63A.

Mean antler spreads for these hunts were 36.58 (N=6, range 26.00-43.00), 37.00 (N=1) and 37.14 (N=10, range 25.80-49.30) for Hunt Areas 50, 51, and 63A, respectively, in 2001.

All known nonhunting mortalities for these units since 1992 are summarized in Table 13.

Climatic Conditions

Spring and summer weather conditions during 2001 were warmer and much drier than normal. Winter precipitation was slightly below normal and temperatures were near to slightly below normal. The spring of 2002 has seen the return of below average precipitation levels.

Habitat Conditions

Habitats within Area 5 are quite varied. In Unit 50, extensive willow bottoms provide good summer and winter habitat, and the moose population appears to be increasing and ranging throughout the coniferous zone in summer.

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

Depredations, Trapping, and Transplanting

During this reporting period, 17 moose-related depredation complaints were received, all from Units 63 and 63A. All complaints involved concerns over damage to stored hay and were resolved through some combination of hazing, paneling and moving offending animals. The unit of origin for these complaints was 50 (1), 51 (1), 63 (8), and 63A (7). A number of nuisance complaints were also fielded during this reporting period. A total of 39 moose were translocated, all from Units 63 (28) and 63A (11). These animals were released in Units 50 (4), 51 (7), 59/59A (17), 60A (3), 63 (2), 63A (2), and 69 (4).

Management Implications

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

Table 1. 2001 Season Structure for Controlled Moose Hunts in the Upper Snake Region.

	Season			
Hunt Area	Dates	Length	Permits	Open For
50	30 August-23 November	86 days	6	Antlered
51	30 August-23 November	86 days	2	Antlered
59	30 August-23 November	86 days	22	Antlered
60	30 August-23 November	86 days	26	Antlered
60A	30 August-23 November	86 days	8	Antlered
60A	15 October-23 November	40 days	15	Antlerless
61-1	30 August-23 November	86 days	20	Antlered
61-2	30 August-23 November	86 days	15	Antlered
61-3	30 August-23 November	86 days	22	Antlered
62	30 August-23 November	86 days	20	Antlered
62A	30 August-23 November	86 days	18	Antlered
63A	30 August-23 November	86 days	15	Antlered
63A	15 October-23 November	40 days	14	Antlerless
64	30 August-23 November	86 days	18	Antlered
64	15 October-23 November	40 days	10	Antlerless
65	30 August-23 November	86 days	16	Antlered
67-1	30 August-23 November	86 days	15	Antlered
67-2	30 August-23 November	86 days	15	Antlered
66-1	30 August-23 November	86 days	20	Antlered
66-2	30 August-23 November	86 days	22	Antlered
69-1	30 August-23 November	86 days	25	Antlered
69-1	15 October-23 November	40 days	10	Antlerless
69-2	30 August-23 November	86 days	25	Antlered
69-2	15 October-23 November	40 days	10	Antlerless
69-3	30 August-23 November	86 days	12	Antlered
69-3	15 October-23 November	40 days	5	Antlerless

Table 2. Summary of Moose Harvest and Drawing Odds for Hunt Area 59[a], 1992-2001.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[b]	First Choice Applicants	Drawing Odds
59	1992	8	8	0	100	2.4	94	1:11.8
	1993	15	13	0	87	8.5	136	1:9.1
	1994	15	14	0	93	4.7	161	1:10.7
	1995	16	16	0	100	4.4	155	1:9.7
	1996	16	15	0	94	6.6	117	1:7.3
	1997	16	14	0	88	7.1	132	1:8.3
	1998	16	15	0	94	2.8	152	1:9.5
	1999	20	20	0	100	6.1	172	1:8.6
	2000	20	19	0	95	4.8	110	1:5.5
	2001	22	19	0	86	-	88	1:4.0
59A	1992	4	4	0	100	3.0	23	1:5.8

[a] Hunt Areas 59 and 59A combined and renamed Hunt Area 59 in 1993.

[b] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

Table 3. Summary of All Known Nonhunting Moose Mortalities in Units 59 and 59A, 1992-2001.

Unit/ Year	Mortality Agent: Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
59							
1992	1	0	3	0	0	1	5
1993	0	0	0	0	0	1	1
1994	0	0	1	0	0	1	2
1995	1	0	0	0	0	0	1
1996	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0
1998	0	0	2	0	0	0	2
1999	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0
59A							
1992	0	0	0	0	0	0	0
1993	0	1	0	0	0	0	1
1994	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0

Table 4. Summary of Moose Harvest and Drawing Odds for Hunt Areas 64, 65, and 67, 1992-2001.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
64	1992	8	8	0	100	3.6	81	1:10.1
	1993	17	13	4	100	4.7	74	1:4.4
	1994	17	12	5	100	5.0	115	1:5.8
	1995	18	13	5	100	9.6	105	1:5.8
	1996	18	10	4	78	7.8	105	1:5.8
	1997	24	11	7	75	3.7	84	1:3.5
	1998	24	12	5	71	4.9	98	1:4.1
	1999	33	15	15	91	5.2	128	1:3.9
	2000	33	17	10	82	4.0	66	1:2.0
	2001	28	16	9	89	-	67	1:2.4
65	1992	5	5	0	100	3.6	37	1:7.4
	1993	8	7	0	88	8.6	39	1:7.8
	1994	8	8	0	100	9.1	73	1:9.1
	1995	9	9	0	100	7.6	45	1:5.0
	1996	9	6	0	67	7.2	51	1:5.7
	1997	12	10	0	83	2.6	63	1:5.3
	1998	12	10	0	83	5.7	38	1:3.2
	1999	16	10	0	63	9.7	75	1:4.7
	2000	16	11	0	69	5.5	36	1:2.3
	2001	16	13	0	81	-	45	1:2.8
67	1992	8	7	0	88	2.3	58	1:7.3
	1993	12	10	0	83	3.1	73	1:6.1
	1994	12	10	0	83	12.1	61	1:5.1
	1995	13	11	0	85	6.2	68	1:5.2
	1996	13	8	0	62	4.0	98	1:7.5
	1997	20	14	0	70	7.2	81	1:4.1
	1998	20	14	0	70	3.9	93	1:4.7
	1999	30	24	0	80	9.5	76	1:2.5
	2000	30	23	0	77	4.8	100	1:3.3
	2001	30	26	0	87	-	63	1:2.1

[a] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

Table 5. Summary of All Known Nonhunting Moose Mortalities in Units 64, 65, and 67, 1992-2001.

Unit/ Year	Mortality Agent: Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
64							
1992	0	2	0	0	0	1	3
1993	0	1	0	0	0	0	1
1994	0	6	1	0	0	2	9
1995	0	0	0	0	0	2	2
1996	0	0	4	0	0	0	4
1997	0	0	1	1	0	1	3
1998	0	0	2	0	0	0	2
1999	0	0	0	0	0	1	1
2000	0	0	2	0	0	0	2
2001	0	0	1	0	0	2	3
65							
1992	0	1	3	0	0	0	4
1993	0	2	0	0	0	0	2
1994	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	1	1
1997	0	0	3	0	0	0	3
1998	0	0	4	0	0	1	5
1999	0	0	1	0	0	0	1
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0
67							
1992	0	3	2	0	0	2	6
1993	0	0	0	0	0	0	0
1994	0	1	2	1	0	0	4
1995	0	0	2	0	0	0	2
1996	0	0	3	0	0	0	3
1997	0	0	2	0	0	1	3
1998	0	0	3	0	0	2	5
1999	0	1	0	0	0	0	1
2000	1	0	4	0	0	0	5
2001	0	0	0	0	0	0	0

Table 6. Summary of Moose Harvest and Drawing Odds for Hunt Areas 66 and 69, 1992-2001.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
66	1992	12	12	0	100	5.5	112	1:9.3
	1993	20	18	0	90	8.7	134	1:6.7
	1994	20	18	0	90	5.3	133	1:6.7
	1995	24	21	0	88	6.1	181	1:7.5
	1996	24	20	0	83	4.1	142	1:5.9
	1997	28	25	0	89	4.0	146	1:5.2
	1998	28	26	0	93	4.8	136	1:4.9
	1999[b]	60	34	18	87	5.1	255	1:4.3
	2000[b]	60	36	19	92	4.7	154	1:2.6
	2001	42	40	0	95	-	133	1:3.2
69	1992	22	21	0	95	3.7	195	1:8.9
	1993	36	26	10	100	7.4	198	1:5.5
	1994	36	25	9	94	3.4	262	1:7.3
	1995	39	29	10	100	5.8	269	1:6.9
	1996	39	28	8	92	4.6	289	1:7.4
	1997	49	33	13	94	4.2	372	1:7.6
	1998	49	31	13	90	3.3	349	1:7.1
	1999[b]	50	44	0	88	5.3	440	1:8.8
	2000[b]	50	48	0	96	5.8	249	1:5.0
	2001	87	54	17	82	-	312	1:3.6

[a] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

[b] Unit 66 added to old Hunt Area 69-4 and renamed 66-3 in 1999.

Table 7. Summary of All Known Nonhunting Moose Mortalities in Units 66 and 69, 1992-2001.

Unit/ Year	Mortality Agent: Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
66							
1992	0	1	0	0	0	1	2
1993	0	1	0	0	0	0	1
1994	0	0	0	0	0	0	0
1995	0	2	1	0	0	0	3
1996	0	1	0	0	0	0	1
1997	0	3	0	0	0	0	3
1998	0	0	0	0	0	0	0
1999	2	1	1	1	0	0	5
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0
69							
1992	0	0	0	0	0	0	0
1993	0	1	0	0	0	0	1
1994	0	1	2	0	0	0	3
1995	0	1	1	1	0	0	3
1996	0	0	0	0	0	1	1
1997	0	1	0	2	0	0	3
1998	0	1	0	0	0	0	1
1999	0	0	3	1	0	0	4
2000	0	1	0	1	0	2	4
2001	0	0	0	1	0	1	2

Table 8. Summary of Moose Harvest and Drawing Odds for Hunt Areas 60, 60A, 61, 62, and 62A, 1992-2001.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
60	1992	10	9	1	100	2.3	160	1:16.0
	1993	15	14	0	93	3.8	82	1:5.5
	1994	15	15	0	100	3.3	138	1:9.2
	1995	16	16	0	100	5.4	131	1:8.2
	1996	16	14	0	88	5.9	143	1:8.9
	1997	16	13	0	81	4.7	163	1:10.2
	1998	16	15	0	94	5.5	178	1:11.1
	1999	24	22	0	92	5.0	223	1:9.3
	2000	24	20	0	83	3.1	127	1:5.2
	2001	26	26	0	100	-	145	1:5.6
60A	1992	16	6	9	94	2.4	44	1:2.8
	1993	16	6	8	88	4.2	44	1:2.8
	1994	16	6	10	100	3.1	47	1:2.9
	1995	16	6	8	88	2.1	35	1:2.2
	1996	16	6	7	81	4.5	45	1:2.8
	1997	16	5	6	69	2.3	38	1:2.4
	1998	16	6	3	56	1.8	46	1:2.9
	1999	16	6	3	56	4.4	33	1:2.1
	2000	16	5	5	63	1.9	25	1:1.6
	2001	23	8	13	91	-	30	1:1.3
61	1992	16	15	1	100	3.1	208	1:13.0
	1993	33	33	0	100	6.2	193	1:5.8
	1994	33	32	0	97	4.0	297	1:9.0
	1995	36	34	0	94	5.6	323	1:9.0
	1996	36	34	0	94	6.5	282	1:7.8
	1997	45	41	0	91	3.8	327	1:7.3
	1998	45	40	0	89	5.3	290	1:6.4
	1999	60	55	0	92	4.7	398	1:6.6
	2000	60	54	0	90	5.4	263	1:4.4
	2001	58	48	0	83	-	295	1:5.1
62	1992	4	4	0	100	2.3	36	1:9.0
	1993	10	10	0	100	9.5	83	1:8.3
	1994	10	10	0	100	8.2	89	1:8.9
	1995	11	10	0	91	4.9	123	1:11.2
	1996	11	7	0	64	2.9	79	1:7.2
	1997	12	10	0	83	3.4	103	1:8.6
	1998	12	10	0	83	6.7	74	1:6.2
	1999	18	16	0	89	7.1	115	1:6.4
	2000	18	10	0	56	9.1	57	1:3.2
	2001	20	19	0	95	-	79	1:4.0

Table 8. Continued.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
62A	1992	5	5	0	100	1.6	53	1:10.6
	1993	10	9	0	90	9.5	106	1:10.6
	1994	10	10	0	100	1.7	114	1:11.4
	1995	11	11	0	100	5.0	119	1:10.8
	1996	11	9	0	82	2.3	129	1:11.7
	1997	12	12	0	100	4.7	142	1:11.8
	1998	12	12	0	100	4.6	104	1:8.7
	1999	18	17	0	94	7.2	160	1:8.9
	2000	18	16	0	89	2.8	110	1:6.2
	2001	18	18	0	100	-	102	1:5.7

[a] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

Table 9. Aerial Survey of Moose in Hunt Area 62.

2000 to 2001	Observed	Estimated (±90% CI)
Total Moose	332	366±16
Cows	164	180±9
Bulls	98	109±8
Calves	70	77±5
Bulls:Cows:Calves	60:100:43	61:100:43

Table 10. Aerial Survey of Moose in Hunt Areas 60, 60A, 61, and 62.

	1990-1991		1991-1992	
Inclusive Location	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 Henry's Lake Flat	42:100:52	59	-	19
Henry's Lake	22:100:56	16	-	19
Henry's 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	100:100:100	85[a]	65:100:41	50
Junipers and Hook of Sands	118:100:44	103[a]	33:100:67	18
Chokecherry Ridge and Second Sands	69:100:45	63[a]	72:100:36	48
Total		888[a]		444

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

Table 11. Summary of All Known Nonhunting Moose Mortalities in Units 60, 60A, 61, 62, and 62A, 1992-2001.

Unit/ Year	Mortality Agent: Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
60							
1992	0	2	8	0	0	1	11
1993	0	0	0	0	0	1	1
1994	0	0	5	0	0	0	9
1995	0	0	2	0	0	0	2
1996	0	0	4	0	0	3	7
1997	0	0	8	0	0	0	8
1998	0	0	1	0	0	0	1
1999	0	0	6	0	0	0	6
2000	0	1	4	0	0	0	5
2001	0	0	7	0	0	0	7
60A							
1992	0	1	4	0	0	5	10
1993	0	0	0	0	0	0	0
1994	0	1	2	0	0	0	3
1995	0	0	1	0	0	2	3
1996	1	0	0	0	0	1	2
1997	0	0	0	1	0	0	1
1998	0	1	1	0	0	0	2
1999	0	0	1	0	0	0	1
2000	0	0	0	0	0	1	1
2001	0	3	0	0	0	3	6
61							
1992	1	0	14	0	0	1	16
1993	1	1	3	0	0	0	5
1994	0	0	19	1	0	1	21
1995	0	0	6	1	0	2	9
1996	1	0	7	0	0	5	13
1997	0	1	7	3	0	2	13
1998	0	0	5	0	0	4	9
1999	0	0	7	1	0	1	9
2000	1	0	6	0	0	0	7
2001	0	0	1	0	0	2	3
62							
1992	0	0	0	0	0	3	3
1993	0	0	0	0	0	0	0
1994	0	0	2	0	0	0	2
1995	0	0	2	0	0	0	2
1996	0	0	4	0	0	2	6
1997	0	0	4	0	0	1	5
1998	0	0	3	1	0	0	4
1999	0	1	2	0	0	0	3
2000	0	1	1	0	0	0	2
2001	0	0	1	0	0	0	1

Table 11. Continued.

Unit/ Year	Mortality Agent						Total
	Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	
62A							
1992	1	0	3	0	0	0	4
1993	0	0	1	0	0	0	1
1994	0	0	2	0	0	2	4
1995	0	0	0	0	0	1	1
1996	0	0	4	0	0	2	6
1997	1	1	2	2	0	0	6
1998	0	0	1	0	0	0	1
1999	0	1	1	1	0	1	4
2000	0	0	0	0	0	0	0
2001	0	0	1	0	0	0	1

Table 12. Summary of Moose Harvest and Drawing Odds by Hunt Area (Hunt Areas 50, 51, and 63A), 1992-2001.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
50	1993	2	2	0	100	10.5	13	1:6.5
	1994	2	2	0	100	3.0	20	1:10.0
	1995	2	2	0	100	5.5	26	1:13.0
	1996	2	2	0	100	4.5	20	1:10.0
	1997	4	3	0	75	5.0	38	1:9.5
	1998	4	3	0	75	6.0	41	1:10.3
	1999	6	4	0	67	17.3	60	1:10.0
	2000	6	5	0	83	2.6	44	1:7.3
	2001	6	6	0	100	4.7	53	1:8.8
51	1999	2	1	0	50	13.0	22	1:11.0
	2000	2	2	0	100	1.5	7	1:3.5
	2001	2	1	0	50	3.0	16	1:8.0
63A	1992	10	5	5	100	4.2	61	1:6.1
	1993	20	9	8	85	10.0	50	1:2.5
	1994	20	9	9	90	5.2	54	1:2.7
	1995	20	9	8	85	3.2	88	1:4.4
	1996	20	8	9	85	3.6	51	1:2.6
	1997	22	10	9	86	4.5	78	1:3.5
	1998	22	6	8	64	5.1	55	1:2.5
	1999	26	12	10	85	5.8	78	1:3.0
	2000	26	10	11	81	4.0	39	1:1.5
	2001	29	11	13	83	-	44	1:1.5

[a] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.

Table 13. Summary of All Known Nonhunting Moose Mortalities in Units 50, 51, 58, 63 and 63A, 1991-2000.

Unit/ Year	Mortality Agent: Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
1992	0	0	0	0	0	1	1
1993	0	0	2	0	0	2	4
1994	0	1	2	1	0	0	4
1995	1	0	0	0	0	0	1
1996	0	0	0	0	0	0	0
1997	0	1	4	1	0	0	6
1998	0	0	3	0	0	0	3
1999	0	0	1	0	0	0	1
2000	0	0	5	0	0	2	7
2001	0	0	0	0	0	2	2

PROGRESS REPORT
SURVEYS AND INVENTORY

STATE:	Idaho	**JOB TITLE:**	Moose Surveys and Inventories
PROJECT:	W-170-R-26		
SUBPROJECT:	7	**STUDY NAME:**	Big Game Population Status, Trends, Utilization, and Associated Habitat Studies
STUDY:	I		
JOB:	6		

PERIOD COVERED: July 1, 2001 to June 30, 2002

MOOSE – SALMON REGION

Abstract

Two controlled hunts with 14 total permits for antlered moose occurred in the Salmon Region during 2001. One permit holder chose to defer his 2000 permit in Hunt Area 21 until the 2001 season because of fire activity in the region. Of 15 hunters with permits for the region, 14 harvested moose (93% hunter success). In addition, 2 bulls were mistakenly harvested by hunters with permits for another hunt area. Interest in moose permits remained high; 102 applicants selected Salmon Region hunts as first choices in 2001 (draw odds = 1:7.3).

UNITS 21, 21A, 29, 30, 30A, AND 37A

CONTROLLED HUNT AREAS 21, 29

Background

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

Units 21, 21A, 30, and 30A border areas in Montana where moose are common. Migrants from Montana may well have formed the initial nucleus for populations in units bordering Montana. Cross-border movements are no doubt common in this area. No information exists on historical moose numbers other than an increase in moose sightings in recent years, primarily in the North Fork Salmon River drainage. As a result, Hunt Area 21 (units 21 and 21A) was initiated in 1990 with 3 permits (Table 1). Similar increases in moose sightings resulted in the initiation of Hunt

Area 29 (units 29 and 37A) in 1991 and Hunt Area 30 (units 30 and 30A) in 1993. Hunt Area 30 was incorporated into Hunt Area 29 in 1999.

Population Surveys

Because of dense cover, low moose densities, and solitary habits of moose, formal population surveys are ineffective in occupied moose habitat in the Salmon Region. Incidental observations of moose are recorded during aerial surveys for other ungulates. During 2001-2002 surveys, observers counted 6 moose.

Harvest Characteristics

Harvest and hunter information was compiled from Big Game Mortality Reports (BGMRs), which hunters must complete within 10 days of harvest; antlers of males must be presented to an IDFG representative. Season structure (Table 2) and permit levels (Table 1) were unchanged from 2000. Fourteen antlered-moose permits were allocated between 2 controlled hunts in the Salmon Region for 2001. Because of extensive wildfires in the region during 2000, 1 permit holder deferred his permit until 2001. Of 15 active hunters, 14 harvested moose (93% success). Two hunters who held permits for a hunt area in another region mistakenly harvested 2 additional bulls in Unit 29. Of 122 permits issued since 1990, 113 hunters (93%) have taken a moose (Table 1). Antler spread of moose harvested during 2001 seasons ranged from 23 to 45 inches (x = 34.2 in.). Since 1995, average spread ranged from 33.5 to 37.4 inches.

Illegal harvest and vehicle collisions each accounted for 2 mortalities during the reporting period (Table 3). Nonhunting mortality has ranged from 1 to 4 moose per year since 1993.

Climatic Conditions

Summer 2001 was relatively dry. However vegetation at higher elevations apparently remained relatively lush, in part due to above normal summer precipitation. Winter conditions were relatively mild with temperatures and snow accumulation generally slightly below average. Animals, therefore, entered the winter in average body condition, then encountered a mild to average winter, which should have produced relatively high overwinter survival. Snowpack was below average (70-85% of normal) and snowmelt occurred somewhat later than normal. Onset of spring weather and associated plant phenology was apparently delayed. Water-year precipitation has been below average, so drier-than-average conditions prevailed through the end of the reporting period.

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 counterbalanced by negative effects of increased road access and loss of mature, dense-canopy forest stands used by moose for winter cover.

Capture and Translocation

No moose capture or translocation operations were conducted in the Salmon Region during the reporting period (Table 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. Summary of moose harvest and drawing odds by hunt area, Salmon Region, 1992 to present.

Hunt Area	Year	Permits	Harvest M	Harvest F	% Success	Days/ Hunter[a]	First Choice Applicants	Drawing Odds
21	1992	3	3	0	100	5.3	16	1:5.3
	1993	3	3	0	100	12.5	26	1:8.7
	1994	3	2	0	67	7.0	10	1:3.3
	1995	4	3	0	75	18.0	30	1:7.5
	1996	4	4	0	100	8.5	22	1:5.5
	1997	4	4	0	100	4.8	17	1:4.2
	1998	4	4	0	100	4.5	18	1:4.5
	1999	4	4	0	100	17.3	21	1:5.3
	2000[b]	4	2	0	67	4.0	10	1:2.5
	2001[b]	5	4	0	80	16.3	15	1:3.8
29	1992	3	3	0	100	9.7	16	1:5.3
	1993	3	3	0	100	21.3	18	1:6.0
	1994	3	3	0	100	2.0	30	1:10.0
	1995	5	4	0	80	4.5	62	1:12.4
	1996	5	5	0	100	7.4	41	1:8.2
	1997	5	5	0	100	6.6	45	1:9.0
	1998	5	4	0	80	2.7	44	1:8.8
	1999	10	9	0	90	3.7	103	1:10.3
	2000	10	9	0	90	4.9	70	1:7.0
	2001[c]	10	12	0	100	6.7	87	1:8.7
30	1993	3	3	0	100	6.0	10	1:3.3
	1994	3	3	0	100	6.0	14	1:4.7
	1995	3	3	0	100	2.0	31	1:10.3
	1996	3	2	0	67	4.0	19	1:6.3
	1997	3	3	0	100	3.0	27	1:9.0
	1998[d]	3	3	0	100	8.3	30	1:10.0

[a] From 1992-1995, data are from a telephone survey of all hunters. Beginning in 1996, data are from mandatory check of successful hunters only.
[b] One permit was deferred from 2000 until 2001 season because of wildfires.
[c] Two hunters mistakenly harvested bulls in Hunt Area 29.
[d] Hunt Area 30 combined with Hunt Area 29 after 1998.

Table 2. Season structure for controlled moose hunts, Salmon Region, 2001.

Hunt Area	Season Dates	Season Length	Permits	Open For
21	30 August-23 November	86 days	4	Antlered
29	30 August-23 November	86 days	10	Antlered

Table 3. Summary of All Known Nonhunting Moose Mortalities in the Salmon Region, 1992-2001.

Unit/ Year	Mortality Agent: Indian Harvest	Illegal Kill	Road Kill	Natural	Train Kill	Other	Total
21, 21A							
1992	3	0	1	0	0	0	4
1993	0	1	0	0	0	0	1
1994	0	0	1	0	0	0	1
1995	0	0	0	1	0	0	1
1996	0	0	0	0	0	0	0
1997	0	0	0	1	0	0	1
1998	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0
2001	0	2	1	0	0	0	3
29, 37A							
1992	3	0	0	0	0	0	3
1993	0	0	0	1	0	0	1
1994	0	1	0	0	0	0	1
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0
1997	0	1	0	0	0	0	1
1998	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0
30, 30A							
1992	0	1	0	0	0	0	1
1993	0	0	0	0	0	0	0
1994	0	0	0	1	0	0	1
1995	0	0	0	1	0	0	1
1996	0	0	0	0	0	2	2
1997	0	0	1	0	0	0	1
1998	0	1	0	0	0	2	3
1999	0	0	1	0	0	1	2
2000	0	0	2	0	0	0	2
2001	0	0	1	0	0	0	1

Table 4. Moose translocation in Salmon Region, 1993-present.

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

Submitted by:

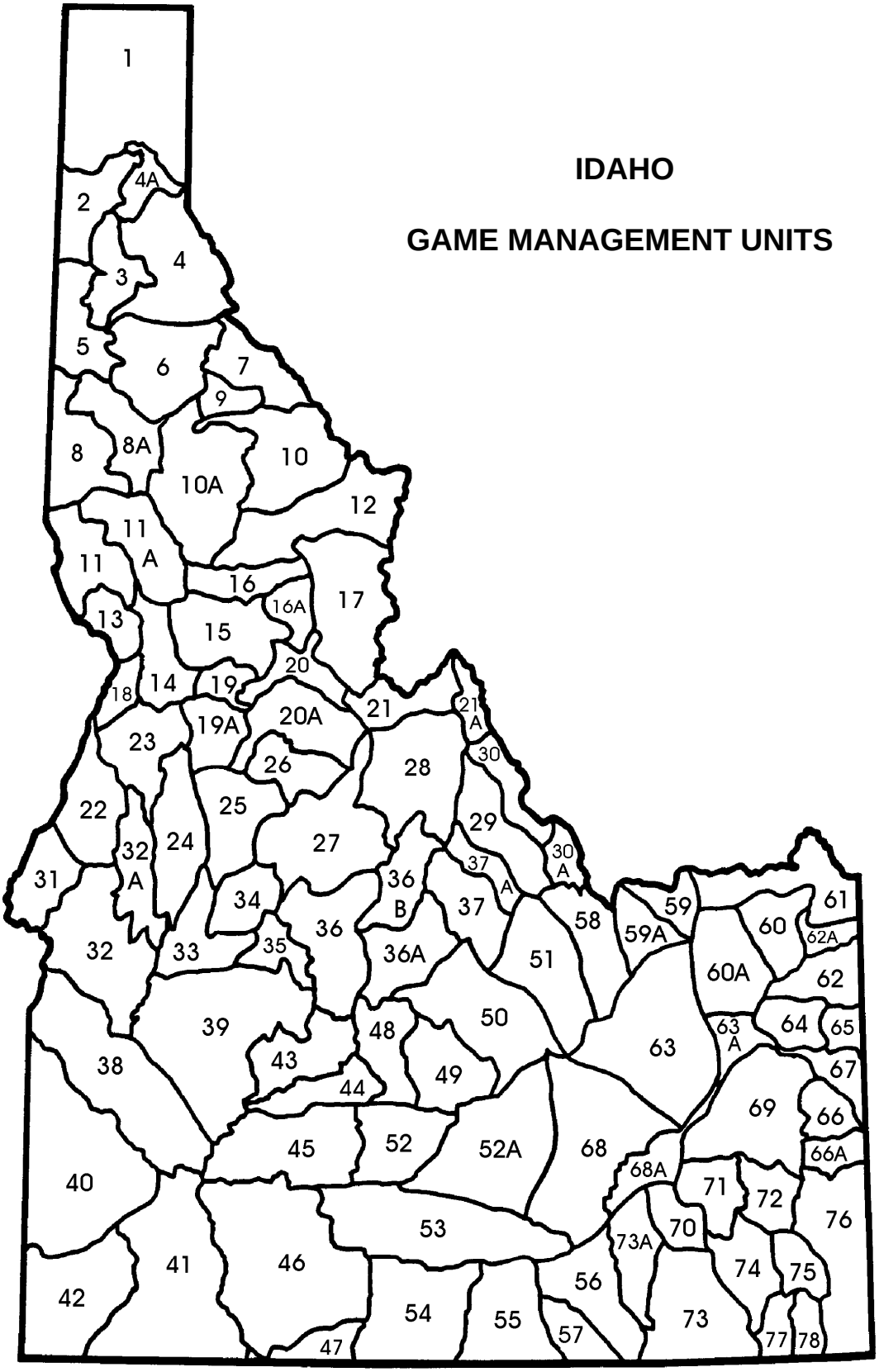
Jim Hayden	*Jay Crenshaw*	*Jeff Rohlman*
Regional Wildlife Manager	Regional Wildlife Manager	Regional Wildlife Manager
Randy Smith	*Carl Anderson*	*Brad Compton*
Regional Wildlife Manager	Regional Wildlife Manager	Regional Wildlife Manager
Tom Keegan		
Regional Wildlife Manager		

Approved by: IDAHO DEPARTMENT OF FISH AND GAME

Dale Toweill	James W. Unsworth, Chief
Wildlife Program Coordinator	Bureau of Wildlife
Federal Aid Coordinator	

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.