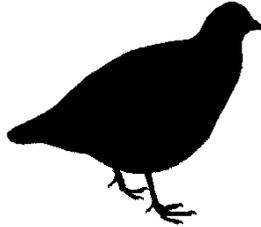


IDAHO DEPARTMENT OF FISH AND GAME

Rod Sando, Director

Project W-170-R-23

Progress Report



UPLAND GAME

Study II, Job 1

April 1, 1998 to March 31, 1999

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**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Upland Game Surveys and</u>
PROJECT:	<u>W-170-R-23</u>		<u>Inventories</u>
SUBPROJECT:	<u>1-7</u>	STUDY NAME:	<u>Upland Game and</u>
STUDY:	<u>II</u>		<u>Waterfowl Population</u>
JOB:	<u>1</u>		<u>Status and Trends</u>

PERIOD COVERED: April 1, 1998 to March 31, 1999

UPLAND GAME – STATEWIDE

STATEWIDE SUMMARY

During the report period the 1991-1995 Upland Game Species Management Plan continued to be followed. The plan will be revised, as needed, and will not be rewritten in the near future. This plan has three general objectives:

- Increase efforts at improving habitat for upland game species, particularly through the Department's Habitat Improvement Program (HIP).
- Increase hunting opportunity for underutilized species.
- Simplify regulations to minimize confusion for the hunting public.

Upland game bird population trends were generally up in 1998, though pheasant numbers were only average and below average in the Magic Valley Region. Chukar, gray partridge, quail, forest grouse, sharp-tailed grouse, and wild turkey numbers were above average statewide. Sage grouse were stable but remained below desired levels.

For the 1998 hunting season, the telephone harvest survey was very limited because of budget constraints. A detailed wild turkey harvest estimate was completed, but a harvest estimate for the other species was available only at the statewide level and confidence levels were broad. A harvest estimate for sharp-tailed grouse was not possible because of an inadequate sample size.

PHEASANT

Abstract

Pheasant management has intensified since the decline of pheasant populations during the 1980s. As of March 31, 1999, over 3,000 Habitat Improvement Program (HIP) upland bird projects covering about 60,000 acres had been started in Idaho. Special Pheasant Management Areas

(SPMAs) have been designated in all regions except the Panhandle and Salmon. These areas were established to try to concentrate most pheasant management into smaller areas that will allow closer monitoring of the impacts of this program.

1998 Season Framework

Regulations in 1998 (Appendix I) were unchanged except that the season was extended to the end of December in the Southwestern Region. The bag and possession limit remained 3 and 6 statewide.

Population Surveys

Surveys were expanded in 1990 to include more August roadside routes. Surveys in 1998 showed higher numbers in northern Idaho but lower than the early 1990s. Brood routes were average in the Southwestern and Upper Snake regions. Numbers were down in the Magic Valley Region but up 60% in the Southeastern Region. Crow count routes are now optional and winter sex ratio counts are conducted as needed. Territorial mapping efforts were conducted in the Magic Valley Region as part of research efforts there.

Harvest Characteristics

Telephone Survey

The 1998 harvest estimate was 94,000, up from 1997 (Table 1). Birds per day was 0.69, up from 1997 and similar to 1996 (Table 2). There were an estimated 28,400 pheasant hunters in 1998.

Check Stations

Historical check stations were continued to provide an index of harvest effort and success in small geographical areas. Harvest by hunters checked in 1998 was generally stable in the western part of the state and up in eastern Idaho.

Climatic Conditions

The spring and summer weather of 1998 was average statewide. The winter of 1998-1999 was wet but mild, with the snowpack generally at elevations above pheasant habitat.

Habitat Conditions

Habitat conditions continue to be marginal in many areas, with intensive farming activities leaving little winter cover or food. Swathing of alfalfa continues to destroy many nests, especially in the Magic Valley Region.

Depredations

Pheasants continue to cause depredations in a few areas, primarily on sprouting corn fields in the Southwestern Region. Low population levels make this problem minimal.

Trapping and Transplanting

No activity during study period.

Management Studies

A major research project continued in the Magic Valley Region.

Management Implications

Pheasant populations continue to be below historical levels in Idaho. Populations have increased in local areas with large acreages of the Conservation Reserve Program (CRP) in parts of the Clearwater, Southwestern, and Southeastern regions.

QUAIL

Abstract

Quail populations have increased in many areas with the help of mild winters. Harvest levels in 1998 were up about 30% from 1997. Populations continued to be above average in 1998 but lower than 1997 in the Magic Valley. HIP efforts have benefited quail in some areas. Mountain quail are rare and research to investigate the dramatic decline of the last 20 years continues.

1998 Season Framework

The season framework was unchanged in 1998. The bag limit was unchanged at 10 per day (see Appendix I).

Population Surveys

Quail are counted incidental to other species during the August brood routes. No other surveys are done. Surveys to locate remnant populations of mountain quail continued throughout the western part of the state.

Harvest Characteristics

Telephone Survey

The telephone survey harvest estimate for quail in 1998 was up about 30% from 1997 (Table 1). Hunter days were up 16% and birds per day was up 10% (Table 3). There were an estimated 13,200 quail hunters in Idaho in 1998.

Check Stations

Quail were checked at stations incidental to other activities.

Climatic Conditions

See Pheasant Section.

Habitat Conditions

Habitat continues to decline for quail statewide. Riparian and agricultural habitats are most threatened. Mountain quail have declined for reasons that are still unclear.

Trapping and Transplanting

No trapping was done during the study period.

Management Studies

Mountain quail continue to decline in Idaho. In 1992 a graduate research program was begun to investigate the reasons for the declines observed during the last 20 years. The final report for this project will be completed during the 1999 to 2000 study period.

Management Implications

Habitat improvement for quail will continue to be part of the HIP program. Season frameworks will remain stable.

FOREST GROUSE

Abstract

Forest grouse continue to be a major resource for upland game bird hunters in Idaho. In 1998 the estimated harvest was 86,700. Forest grouse management activities continue to be minimal.

1998 Season Framework

The 1998 season framework was unchanged (Appendix I) with a 122-day season from September 1 to December 31. Bag and possession limits were 4 and 8. This continues the longest season ever allowed for forest grouse in Idaho.

Population Surveys

Adult:juvenile ratios for several areas around the state were determined from hunter-collected wings. Production data collected in the Southwestern and Southeastern Regions were above average.

Harvest Characteristics

Telephone Surveys

Estimated statewide harvest in 1998 was 86,700 (Table 1). Birds per day was 0.85, which was up from 0.73 in 1997 and 0.70 in 1996 (Table 6).

Check Stations

Wing data was collected incidental to check stations run for other species. Wings were also collected at wing barrels. Production estimates were above average. The Hornet Creek Mountain check station was below the high of 1994 but above the 10-year average.

Climatic Conditions

See Pheasant Section.

Habitat Characteristics

The Department continues to provide input to landowners statewide on how to improve forest grouse habitat. No Department funding exists to cost-share on habitat improvement for these species.

Trapping and Transplanting

No activities during the study period.

Management Studies

A research project is being conducted by a graduate student at Andrus Wildlife Management Area (WMA) in Washington County. The final report is being prepared.

Management Implications

With current staffing and operating resources, little additional management work on forest grouse is planned. Weather, particularly spring nesting weather, will continue to dictate population trends, since habitat is relatively stable for these species.

SAGE GROUSE

Abstract

Sage grouse populations were generally up from 1997, but continued to be below pre-1985 levels. Extensive lek routes are run by the Department to monitor populations in specific areas and their response to local weather and habitat conditions. Extensive habitat conversions from agricultural expansion and wildfire are causing large losses of sage grouse habitat. Season regulations were liberalized and standardized from 1990-1995, but changed drastically in 1996. A statewide sage grouse management effort was initiated by the Department during the last reporting period to provide leadership in conserving sage grouse populations in Idaho.

1998 Season Framework

The season framework was altered in 1996 to provide 3 different types of seasons: liberal, conservative, and closed. Research is underway to evaluate whether these frameworks impact sage grouse mortality. The season framework was unchanged in 1998 from 1997 (See Appendix I).

Population Surveys

Lek routes have been expanded and standardized during the last few years. This was done to provide data that is more robust to year-to-year variation in attendance at a single lek and bird distribution. The need for more and better data is being driven by the steep declines in this bird during the last decade and data needs for the new sage grouse management effort. Lek counts were average or above average statewide. Chick production was below average in the Southwestern Region, average in the Magic Valley Region, and above average in the Upper Snake Region.

Harvest Characteristics

Telephone Surveys

The estimated harvest of 17,500 in 1998 continued dramatically below the early 1990's harvest levels of about 40,000 (Tables 1 and 7). Birds per day hunted was below recent estimates at 0.49. The 1998 estimate of the number of sage grouse hunters in Idaho was 9,200.

Check Stations

Numerous check stations are run in the state to gather information on reproductive success in different areas. Because of shorter seasons sample sizes for these, data were small.

Climatic Conditions

Spring and early summer weather was wetter than average and production was down statewide.

Habitat Characteristics

Habitat management continues to be a major issue for the Department throughout the state. Several other western states are also concerned about sage grouse declines that have averaged about 40% throughout the West.

Trapping and Transplanting

Inactive except for trapping related to research projects.

Management Studies

Management studies are occurring in the Magic Valley Region primarily to locate critical habitats in the southern part of the region that include large habitat manipulation projects to eliminate sagebrush. New research efforts are beginning in the Upper Snake Region to investigate the causes of mortality of juvenile sage grouse. Work in Owyhee County related to operation of a new Air Force training range is beginning and should continue for at least 5 years.

Management Implications

Sage grouse are a popular Idaho game bird. They are also a good indicator of sagebrush habitat health. Monitoring and research on this species will continue to expand during the next reporting period. A long-term management plan was adopted by the Idaho Fish and Game Commission in August 1997. Local Working Groups are meeting statewide to review the needs of local sage grouse populations.

SHARP-TAILED GROUSE

Abstract

The largest remaining Columbian sharp-tailed grouse populations occur in eastern Idaho. These birds have received substantial benefits from CRP and are currently at high population levels. Harvest in 1998 continued well above the 1980's level. Transplant efforts continued during the study period. Since 1992, 458 sharp-tailed grouse have been transplanted to a new location in the Magic Valley Region. In 1998, two active leks were documented near the release site.

1998 Season Framework

The season framework was liberalized in 1992 (Appendix I) with 16 days and a 2 and 4 bag and possession limit continuing in the Upper Snake Region, while the Southeast Region was extended to 30 days and closing at the same time as sage grouse. In 1996 the longer season in the Southeast Region was cut to 16 days, as the end of the CRP program was anticipated. The 30-day season was reestablished in 1997 and continued in 1998.

Population Surveys

Lek counts continue throughout the species range, including some counts in the western part of the state where small populations still occur in Washington and Adams Counties. Surveys conducted in Oneida, Power, and eastern Cassia Counties were conducted as BLM Challenge Cost-Share Projects. During the spring of 1998, these surveys identified 64 previously undocumented sharp-tailed grouse leks and monitored the status of 20 previously known leks.

Harvest Characteristics

Telephone Surveys

A harvest estimate was not possible in 1998 because of poor sample sizes of sharp-tailed grouse hunters. The estimated statewide harvest in 1997 was 10,300 (Table 1).

Check Stations

Sharp-tailed grouse wings are collected and hunters checked incidental to other management activities. Wing barrels provide a large proportion of the wings collected on this species. Wing data showed about average production in 1998.

Climatic Conditions

See Sage Grouse Section.

Habitat Characteristics

The federal government's CRP continues to provide good habitat for sharp-tailed grouse in Idaho. The majority of the 842,000 acres of CRP in Idaho are within Idaho's sharp-tailed grouse range.

Trapping and Transplanting

Since 1991 the Department has been trapping and transplanting Columbian sharp-tailed grouse in southeastern Idaho for transplant to unoccupied but available habitat. The initial 33 birds trapped in 1991 were transplanted into habitat in northeastern Oregon which, along with subsequent transplants, have allowed establishment of a new population there.

In Idaho, 47, 21, 36, 62, 54, 72, 63 birds have been trapped and transplanted to Shoshone Basin between 1992 and 1998. Shoshone Basin is located in southern Twin Falls County and is historical sharp-tailed grouse range. The first active lek from these releases was documented in early 1995 and another lek was found in 1997. Trapping on the leks has documented that about half of the males on the leks in 1998 were unbanded. Since all transplanted birds have been banded, this show substantial reproduction by transplanted hens. Transplants into other suitable but unoccupied habitat in Idaho will be attempted as funds and transplant stock allow.

Management Studies

Monitoring of the Shoshone Basin transplant is continuing with Magic Valley Region staff doing almost all the work.

Management Implications

Idaho has a unique resource in its Columbian sharp-tailed grouse populations. The need to better identify potential sharp-tailed grouse habitat is great. The Department will continue its efforts to transplant this bird into vacant habitat.

CHUKAR PARTRIDGE

Abstract

Chukar partridge harvest in Idaho increased in 1998. Survey work is limited, with helicopter index flights conducted in some areas. HIP projects have improved several thousand acres of chukar habitat, especially on BLM lands.

1998 Season Framework

The 1998 season framework (Appendix I) was lengthened by 15 days in the western part of the state to close on January 15, 1999 and was a total of 119 days long. The season was unchanged from recent years in the eastern part with an 88-day season. The bag and possession limit was 8 and 16.

Population Surveys

Helicopter flights were conducted at 2 locations on the Snake River and 1 location each on the lower Salmon River and Lucky Peak Reservoir in 1998. Numbers in the Clearwater Region surveys about doubled and were up about 45% at Brownlee and down 30% at Lucky Peak.

Harvest Characteristics

Telephone Surveys

The 1998 estimate of Idaho chukar harvest was 74,900 (Table 1). Birds per day were up 31%. The estimated number of Idaho chukar hunters was 14,000 (Table 4).

Check Stations

Chukar hunters were checked at some Department check stations, but little data is collected on chukar using this method. Several hundred wings were collected at Andrus WMA in the Southwest Region.

Climatic Conditions

See Sage Grouse Section.

Habitat Characteristics

Habitat characteristics were good during the report period, with good nesting conditions during the summer of 1998 and a mild winter in 1998-1999.

Trapping and Transplanting

Inactive.

Management Studies

Inactive.

Management Implications

Chukar partridge harvest and populations were above average statewide.

GRAY PARTRIDGE

Abstract

Gray partridge continue to be a species of incidental interest to most hunters. Field observation suggests that populations were up in 1998. HIP efforts and CRP will continue to improve gray partridge habitat statewide.

1998 Season Framework

The 1998 season framework (Appendix I) was lengthened by 15 days in the western part of the state to close on January 15, 1999 and was a total of 119 days long. The season was unchanged from recent years in the eastern part with an 88-day season. The bag and possession limit of 8 and 16.

Population Surveys

Gray partridge are recorded on the August roadside survey routes.

Harvest Characteristics

Telephone Surveys

The 1998 estimate of Idaho gray partridge harvest was 43,400 (Table 1). The estimated birds per hunter day was 1.10. The estimated number of gray partridge hunters in 1998 was 9,500 (Table 5).

Check Stations

Gray partridge are checked incidental to other management activities, but samples are too small to be of any significant use.

Climatic Conditions

See Chukar Section.

Habitat Characteristics

HIP activities continue to improve gray partridge habitat in many parts of the state, especially in areas with large acreage of CRP.

Trapping and Transplanting

Inactive.

Management Studies

Inactive.

Management Implications

Gray partridge will continue to be a species with relatively little active management. HIP activities will provide habitat in some areas, but the emphasis of HIP will continue to be waterfowl and pheasants.

WILD TURKEY

Abstract

Wild turkey populations continue to grow in size and distribution in Idaho. Harvest in 1998 was 2,690, similar to 1997. Transplants totaled 489 birds during the winter of 1997-1998.

1998 Season Framework

In 1998 Idaho held the first fall hunts for wild turkeys since 1980. A controlled hunt with 100 permits was held in the Southeastern Region during the month of October (Appendix I). The season opener was also changed from the second Tuesday in April to a calendar opener of April 15 statewide. This was designed to try to delay the opener until after most breeding had occurred. The general season closed on May 14.

Population Surveys

No formal surveys were conducted, although all regions conduct informal surveys of wintering grounds to get some estimate of population numbers and distribution.

Harvest Characteristics

Telephone Surveys

Estimated harvest in 1998 was 2,703 (Table 1). Statewide harvest is concentrated in the Panhandle, Clearwater, and Southwest Regions (Table 9).

Check Stations

No wild turkey check stations are conducted in Idaho.

Climatic Conditions

Winter conditions were severe in the Panhandle of northern Idaho during the winter of 1998. This weather did not seem, however, to affect wild turkey population numbers significantly.

Habitat Characteristics

Unchanged.

Trapping and Transplanting

A total of 489 birds were transplanted during the winter of 1997-1998 (Table 10). Plans are to move 500 or more birds annually for the next several years.

Management Studies

Inactive.

Management Implications

Wild turkeys continue to be transplanted in large numbers into Idaho. Interest in hunting this species continues to grow. National Wild Turkey Federation chapters are now established in the Clearwater, Panhandle, and Southwest Regions. Cooperative habitat projects have been developed with the US Forest Service.

MOURNING DOVE

Abstract

Mourning dove continue to be a popular early-season species for hunting. Populations remain relatively low because of habitat changes.

1998 Season Framework

The 1998 season framework remained unchanged from 1997 (Appendix I).

Population Surveys

A coo-count survey is conducted annually for use by the U.S. Fish and Wildlife Service to monitor dove numbers statewide.

Harvest Characteristics

Telephone Surveys

No data available.

Management Implications

Dove will continue to decline because of habitat conditions.

RABBITS AND HARES

Abstract

Rabbit and hare populations are increasing in Idaho.

1998 Season Framework

No change from 1997 (Appendix I).

Harvest Characteristics

Telephone Surveys

Harvest estimates were discontinued after 1994 because of low numbers of hunters.

Management Implications

Rabbit and hare will continue to be a species with no active management in Idaho.

CROWS

Abstract

Crows will continue to be a species with no active management.

1998 Season Framework

No change from 1997 (Appendix I).

Harvest Characteristics

Telephone Surveys

Insufficient data is collected from the telephone survey to allow an estimate of crow harvest and the survey was discontinued in 1994.

Management Implications

Crows will continue to be a species with no active management in Idaho.

Table 1. Estimated upland game bird harvest in Idaho as determined by random telephone survey of license buyers, 1991-1998.

Year ^a	Pheasant	Forest Grouse	Hungarian Partridge	Chukar	Quail	Sage Grouse	Sharptail Grouse	Turkey
1991	117,700	103,400	32,400	72,700	73,300	39,500	6,000	495
1992	132,400	112,100	27,800	54,600	91,100	29,900	9,300	487
1993	129,100	190,600	39,000	72,800	117,200	37,400	14,400	977
1994	115,400	283,100	34,800	88,800	118,500	38,500	8,200	1,339
1995	114,600	252,600	42,500	125,200	175,300	27,500	7,900	1,526
1996	166,500	292,800	109,300	208,600	350,500	21,000	14,700	1,720
1997	63,300	43,853	32,100	37,300	87,200	16,000	10,300	2,703
1993-1997 Mean	117,800	212,600	51,500	106,500	169,700	28,100	11,100	1,653
1998	94,000	86,700	43,400	74,900	112,400	17,500	N/A	2,690

^a Harvest estimate methodology has varied. Dashed lines separate years with major changes in techniques.

Table 2. Season framework, estimated pheasant hunter numbers and harvest in Idaho, 1959-1998.

Year	Season (days) ^b	Daily Bag ^b		Hunters	Harvest	Hunter Days	Birds/ Hunter	Birds/ Day
1959 ^a	30	4	(1)	101,100	567,600		5.61	
1960	30	4	(1)	84,300	525,600	347,300	6.23	1.51
1961	30	4	(1)	82,500	535,000	350,000	6.49	1.53
1962	30	4	(1)	81,800	554,100	379,000	6.77	1.46
1963	44	4	(1)	84,500	715,600	458,400	8.47	1.56
1964	44	4	(1)	80,800	757,200	408,800	9.37	1.85
1965	44	4	(1)	79,400	623,400	413,500	7.85	1.51
1966	44	4	(1)	72,900	424,500	338,900	5.83	1.25
1967	44	4		69,000	434,500	343,500	6.31	1.27
1968	44	4		75,800	522,600	379,100	6.89	1.38
1969	44	4		83,600	544,500	430,300	6.51	1.27
1970	44	4	(1)	73,300	470,600	345,900	6.43	1.36
1971	44	4	(1)	81,300	592,300	413,000	7.28	1.43
1972	44	4	(1)	88,800	537,600	437,000	6.06	1.23
1973	44	4	(1)	84,900	449,100	455,600	5.29	.99
1974	44	4	(1)	78,900	326,300	398,000	4.14	.82
1975	44	3		64,600	268,900	331,500	4.16	.81
1976	44	3		71,300	312,000	372,200	4.38	.84
1977	44	3		73,800	310,400	362,000	4.21	.86
1978	44	3		80,600	377,400	435,800	4.68	.87
1979	44	3		86,000	441,500	460,300	5.13	.96
1980	44	3		89,400	438,900	467,900	4.91	.94
1981	44	4		89,800	502,500	512,200	5.60	.98
1982	44	4		76,600	329,700	423,700	4.31	.78
1983 ^c	44	4		79,200	388,700	434,500	4.91	.90
1983 ^c	44	4		78,500	374,100	455,100	4.77	.82
1984	44	4		67,600	264,000	346,400	3.91	.76
1985	44	4		57,000	237,800	336,100	4.17	.71
1986	58	4		49,600	180,100	249,700	3.63	.72
1987	58	4		41,300	155,500	220,700	3.77	.71
1988	58	4		31,300	111,900	166,800	3.57	.67
1989	58	4		28,500	102,700	160,500	3.61	.64
1990	58	3		33,100	148,800	199,100	4.50	.75
1991	58	3		30,900	117,700	183,900	3.81	.64
1992	58	3		31,200	132,400	183,200	4.24	.72
1993 ^d	58	3		31,900	129,100	222,100	4.05	.58
1994	58	3		25,600	115,400	161,200	4.53	.72
1995	58	3		28,100	114,600	189,600	4.07	.60
1996 ^d	58	3		32,900	166,500	234,900	5.06	.71
1997	58	3		32,900	63,300	108,700	1.92	.58
1998	77	3		28,400	94,000	136,200	3.31	.69

^a Mailout of hunter questionnaire began in 1953. Data collected on hunter days starting in 1960.

^b Season length and bag in southwestern Idaho where the majority of pheasant hunting occurs (number of hens allowed in bag).

^c Both hunter report cards (first value shown) and telephone survey (second value shown) were used in 1983.

^d New telephone survey methodology.

Table 3. Season framework, estimated quail hunter numbers and harvest in Idaho, 1959-1998.

Year	Season (days) ^b	Daily Bag ^b	Hunters	Harvest	Hunter Days	Birds/Hunter	Birds/Day
1959 ^a	30	5	9,700	48,800		5.03	
1960	44	5	10,900	38,200	32,700	3.50	1.17
1961	44	10	11,200	58,300	30,100	5.21	1.94
1962	86	10	10,700	61,100	37,100	5.71	1.65
1963	109	10	13,100	89,600	45,000	6.84	1.99
1964	111	10	11,000	88,400	37,100	8.04	2.38
1965	105	10	12,600	89,400	44,100	7.10	2.03
1966	106	10	11,400	92,000	42,400	8.07	2.17
1967	107	10	13,500	107,800	41,000	7.99	2.63
1968	102	10	15,600	147,700	58,800	9.47	2.51
1969	103	10	14,200	105,600	50,700	7.44	2.08
1970	104	10	13,400	108,800	48,900	8.12	2.23
1971	105	10	15,200	106,800	51,700	7.03	2.07
1972	107	10	15,100	86,100	53,400	5.70	1.61
1973	107	10	13,300	68,200	49,800	5.13	1.37
1974	107	10	12,200	76,200	52,500	6.25	1.45
1975	107	10	15,800	127,100	65,500	8.04	1.94
1976	105	10	19,500	170,700	88,600	8.75	1.93
1977	106	10	17,600	131,100	73,500	7.45	1.78
1978	107	10	19,700	155,300	96,400	7.88	1.61
1979	108	10	21,400	147,600	92,700	6.90	1.59
1980	103	10	19,300	123,500	75,800	6.40	1.63
1981	104	10	21,500	155,600	98,900	7.24	1.57
1982	105	10	13,700	64,900	63,400	4.74	1.02
1983 ^c	106	10	15,500	92,200	64,600	5.95	1.43
1983 ^c	106	10	8,000	59,500	46,800	7.44	1.27
1984	108	10	6,400	47,000	42,800	7.34	1.10
1985	102	10	7,000	56,500	43,400	8.07	1.30
1986	103	10	5,900	39,200	26,300	6.64	1.49
1987	104	10	5,200	39,200	29,900	7.54	1.31
1988	106	10	6,300	55,100	34,700	8.75	1.59
1989	107	10	5,800	55,000	31,900	9.48	1.72
1990	108	10	7,400	70,500	44,600	9.53	1.58
1991	102	10	7,300	73,300	46,600	10.04	1.57
1992	103	10	8,000	91,100	45,300	11.39	2.01
1993 ^d	104	10	15,400	117,200	63,900	7.61	1.83
1994	105	10	13,200	118,500	74,000	9.01	1.60
1995	106	10	15,500	175,300	101,800	11.39	1.72
1996 ^d	116 ^e	10	22,300	350,500	118,400	15.72	2.96
1997	103	10	12,000	87,200	49,600	7.27	1.76
1998	104	10	13,200	112,400	58,000	8.52	1.93

^a Mailout of hunter questionnaire began in 1953. Data collected on hunter days starting in 1960.

^b Season length and bag in Canyon County.

^c Both hunter report cards (first value shown) and telephone survey (second value shown) were used in 1983.

^d New telephone survey methodology.

^e Special 2-week extension 1/18-31/97.

Table 4. Season framework, estimated chukar partridge hunter numbers and harvest in Idaho, 1959-1998.

Year	Season (days) ^b	Daily Bag ^b	Hunters	Harvest	Hunter Days	Birds/Hunter	Birds/Day
1959 ^a	30	5	7,400	28,900		3.91	
1960	44	5	10,700	32,900	27,000	3.07	1.22
1961	44	7	11,300	38,500	24,900	3.41	1.55
1962	86	7	17,000	99,300	49,400	5.84	2.01
1963	109	10	22,700	148,400	70,300	6.54	2.11
1964	111	10	20,500	166,600	68,700	8.13	2.43
1965	105	10	20,000	143,000	63,500	7.15	2.25
1966	106	10	20,200	146,000	66,100	7.23	2.21
1967	107	10	19,700	123,000	59,200	6.24	2.08
1968	102	10	23,000	176,900	75,400	7.69	2.35
1969	103	10	24,200	171,200	83,100	7.07	2.06
1970	104	10	23,000	168,600	79,400	7.33	2.12
1971	105	10	23,200	158,300	77,100	6.82	2.05
1972	107	10	25,000	134,800	85,200	5.39	1.58
1973	107	10	25,000	172,000	87,200	6.88	1.97
1974	107	10	23,800	145,200	89,400	6.10	1.62
1975	107	10	23,800	124,200	82,900	5.22	1.50
1976	105	8	28,100	206,400	114,500	7.35	1.80
1977	106	8	24,700	150,100	94,100	6.08	1.60
1978	107	8	27,400	183,400	115,400	6.69	1.59
1979	111	8	31,400	219,700	121,000	7.00	1.82
1980	126	8	31,200	228,700	126,800	7.33	1.80
1981	125	8	30,600	221,900	124,400	7.25	1.78
1982	124	8	20,900	72,800	75,400	3.48	0.97
1983 ^c	106	8	18,100	80,500	62,200	4.45	1.29
1983 ^c	106	8	11,600	44,700	45,900	3.85	0.97
1984	108	3	4,400	10,500	16,200	2.39	0.65
1985	102	5	7,200	30,800	28,000	4.28	1.10
1986	103	8	9,800	59,500	37,600	6.07	1.58
1987	104	8	12,100	92,100	60,400	7.61	1.53
1988	106	8	10,600	68,000	47,200	6.42	1.44
1989	107	8	8,800	55,800	42,300	6.34	1.32
1990	108	8	10,400	72,200	42,700	6.94	1.69
1991	102	8	10,900	72,700	48,100	6.67	1.51
1992	103	8	10,500	54,600	42,700	5.21	1.28
1993 ^d	104	8	16,500	72,800	81,900	4.41	0.89
1994	105	8	14,000	88,800	65,700	6.38	1.35
1995	106	8	16,900	125,200	95,500	7.47	1.31
1996 ^d	102	8	18,500	208,600	140,500	11.28	1.49
1997	103	8	14,400	37,300	33,600	2.59	1.11
1998	119	8	14,000	74,900	51,600	5.35	1.45

^a Mailout of hunter questionnaire began in 1953. Data collected on hunter days starting in 1960.

^b Season length and bag in Washington County including Brownlee Reservoir.

^c Both hunter report cards (first value shown) and telephone survey (second value shown) were used in 1983.

^d New telephone survey methodology.

Table 5. Season framework, estimated gray partridge hunter numbers and harvest in Idaho, 1959-1998.

Year	Season (days) ^b	Daily Bag ^b	Hunters	Harvest	Hunter Days	Birds/Hunter	Birds/Day
1959 ^a	30	10	13,200	47,400		3.59	
1960	44	5	15,200	38,000	51,000	2.50	0.75
1961	44	7	13,200	37,900	41,300	2.87	0.92
1962	86	7	14,000	47,500	46,000	3.39	1.03
1963	109	10	19,500	89,900	62,000	4.61	1.45
1964	111	10	18,600	95,800	63,200	5.15	1.52
1965	105	10	18,300	89,300	70,400	4.88	1.27
1966	106	10	17,300	80,800	62,000	4.67	1.30
1967	107	10	16,100	72,500	51,900	4.50	1.40
1968	102	10	19,500	95,000	65,600	4.87	1.45
1969	103	10	17,100	64,700	66,800	3.78	0.97
1970	104	10	13,800	53,400	44,900	3.87	1.19
1971	105	10	17,000	86,500	56,700	5.09	1.53
1972	107	10	18,300	65,400	55,500	3.57	1.18
1973	107	10	21,500	88,700	76,000	4.13	1.17
1974	107	10	19,500	72,700	77,800	3.73	0.93
1975	107	10	16,600	68,400	70,500	4.12	0.97
1976	105	8	22,000	113,200	89,500	5.15	1.27
1977	106	8	22,500	107,400	94,300	4.77	1.14
1978	107	8	24,900	121,800	105,400	4.89	1.16
1979	111	8	26,300	122,200	101,700	4.65	1.20
1980	126	8	26,100	118,800	109,100	4.55	1.09
1981	125	8	31,700	174,000	139,100	5.49	1.25
1982	124	8	19,100	63,200	80,800	3.31	0.78
1983 ^c	106	8	20,600	77,000	78,600	3.74	0.98
1983 ^c	106	8	11,300	59,500	72,100	5.27	0.83
1984	108	3	5,300	23,500	35,700	4.43	0.66
1985	102	5	4,800	16,800	26,200	3.50	0.64
1986	103	8	4,800	17,200	22,700	3.58	0.76
1987	104	8	5,700	28,200	28,700	4.95	0.98
1988	106	8	4,400	25,000	26,000	5.68	0.96
1989	107	8	2,900	10,000	15,000	3.45	0.67
1990	108	8	6,100	31,200	31,400	5.11	0.99
1991	102	8	6,400	32,400	34,800	5.06	0.93
1992	103	8	5,600	27,800	25,100	4.96	1.11
1993 ^d	104	8	13,600	39,000	65,100	2.87	0.60
1994	105	8	11,200	34,800	59,100	3.14	0.59
1995	106	8	12,400	42,500	67,000	3.44	0.63
1996 ^d	102	8	17,400	109,300	118,000	6.28	0.93
1997	103	8	8,700	32,100	26,300	3.69	1.22
1998	119	8	9,500	43,400	39,600	4.57	1.10

^a Mailout of hunter questionnaire began in 1953. Data collected on hunter days starting in 1960.

^b Season length and bag in Canyon County.

^c Both hunter report cards (first value shown) and telephone survey (second value shown) were used in 1983.

^d New telephone survey methodology.

Table 6. Season framework, estimated forest grouse hunter numbers and harvest in Idaho, 1959-1998.

Year	Season (days) ^b	Daily Bag ^b	Hunters	Harvest	Hunter Days	Birds/Hunter	Birds/Day
1959 ^a	44	3	20,900	113,700		5.44	
1960	44	3	26,600	106,300	82,200	4.00	1.29
1961	44	3	30,800	169,000	111,600	5.49	1.51
1962	47	3	28,000	138,300	103,000	4.94	1.34
1963	51	3	26,100	136,800	99,800	5.24	1.37
1964	58	3	21,800	98,300	71,000	4.51	1.38
1965	58	3	24,400	118,500	95,400	4.86	1.24
1966	58	3	23,200	110,600	89,000	4.76	1.24
1967	58	3	27,500	143,300	114,800	5.21	1.25
1968	58	3	25,200	118,800	93,800	4.72	1.27
1969	72	3	30,100	132,200	121,900	4.40	1.85
1970	72	3	28,500	132,900	117,200	4.67	1.14
1971	72	3	30,400	141,200	120,600	4.65	1.17
1972	72	3	35,800	185,200	159,100	5.17	1.16
1973	72	3	37,200	180,300	171,100	4.85	1.05
1974	72	3	36,200	143,100	181,500	3.95	0.79
1975	72	3	35,800	166,400	169,900	4.65	0.98
1976	65	3	41,200	182,000	189,000	4.42	0.96
1977	65	4	40,000	187,400	198,400	4.69	0.95
1978	65	4	39,600	176,100	179,400	4.45	0.98
1979	72	4	47,200	256,100	238,100	5.43	1.08
1980	72	4	35,600	112,900	151,700	3.17	0.78
1981	72	4	33,000	125,400	143,000	3.80	0.88
1982	72	4	31,300	118,100	151,400	3.77	0.78
1983 ^c	72	4	37,000	176,900	199,400	4.78	0.89
1983 ^c	72	4	22,700	110,000	135,800	4.85	0.81
1984	72	4	19,100	85,600	119,100	4.48	0.72
1985	72	4	18,200	73,400	103,900	4.03	0.71
1986	100	4	20,400	104,400	123,400	5.12	0.85
1987	93	4	18,400	100,800	98,800	5.48	1.02
1988	102	4	19,800	107,500	127,100	5.43	0.85
1989	101	4	22,100	122,600	167,600	5.55	0.73
1990	122	4	20,900	98,500	130,900	4.71	0.75
1991	122	4	21,600	103,400	132,500	4.79	0.78
1992	122	4	23,600	112,100	148,200	4.75	0.76
1993 ^d	122	4	55,800	190,600	357,100	3.42	0.53
1994	122	4	60,700	283,100	458,600	4.69	0.62
1995	122	4	61,800	252,600	464,500	4.07	0.54
1996 ^d	122	4	60,000	292,800	420,600	4.88	0.70
1997	122	4	15,300	43,900	60,200	2.87	0.73
1998	122	4	39,400	136,100	160,600	3.45	0.85

^a Mailout of hunter questionnaire began in 1953. Data collected on hunter days starting in 1960.

^b Season length and bag in Kootenai County.

^c Both hunter report cards (first value shown) and telephone survey (second value shown) were used in 1983.

^d New telephone survey methodology.

Table 7. Season framework, estimated sage grouse hunter numbers and harvest in Idaho, 1959-1998.

Year	Season (days) ^b	Daily Bag ^b	Hunters	Harvest	Hunter Days	Birds/Hunter	Birds/Day
1959 ^a	2	2 ^{cd}	11,200	23,300		2.08	
1960	1	2 ^{cd}	10,400	15,200	13,100	1.46	1.16
1961	1	2 ^d	11,800	16,100	16,700	1.36	0.96
1962	2	2 ^{cd}	13,300	23,000	20,400	1.73	1.13
1963	2	2 ^d	16,200	28,300	25,600	1.75	1.11
1964	3	2 ^d	15,700	26,700	25,000	1.70	1.16
1965	3	2 ^d	16,200	24,700	26,700	1.53	0.93
1966	5	2 ^d	17,600	34,800	28,600	1.97	1.22
1967	5	2 ^d	21,300	51,700	39,200	2.43	1.32
1968	9	2 ^d	22,800	52,400	43,000	2.30	1.22
1969	9	3 ^d	31,400	81,700	63,200	2.60	1.29
1970	9	3 ^d	27,600	70,800	54,300	2.57	1.30
1971	9	3 ^d	29,500	79,400	56,400	2.69	1.41
1972	9	3 ^d	30,900	72,100	60,900	2.33	1.18
1973	9	3 ^d	30,500	68,800	67,600	2.26	1.02
1974	9	3 ^d	27,400	63,300	61,000	2.31	1.04
1975	9	3 ^d	26,800	57,800	58,000	2.16	1.00
1976	13	3 ^d	28,100	68,800	69,700	2.45	0.99
1977	14	3 ^d	26,600	57,100	63,400	2.15	0.90
1978	14	3 ^d	28,600	72,000	65,600	2.52	1.10
1979	14	3 ^d	32,100	92,600	80,900	2.85	1.15
1980	14	3 ^d	28,400	61,000	60,900	2.15	1.00
1981	14	3 ^d	27,100	70,300	62,600	2.59	1.12
1982	14	3 ^d	22,400	39,600	52,600	1.77	0.75
1983 ^e	14	1 ^d	15,100	26,100	35,500	1.73	0.74
1983 ^e	14	1 ^d	7,100	13,700	18,400	1.93	0.75
1984	14	1 ^d	5,300	11,700	15,400	2.21	0.76
1985	14	3	10,000	26,900	30,000	2.69	0.90
1986	23	3	11,200	37,900	35,700	3.38	1.06
1987	23	3	11,900	42,000	37,500	3.53	1.12
1988	23	3	12,300	39,600	44,000	3.22	0.90
1989	23	3	11,100	40,000	40,000	3.60	1.00
1990	30	3	13,800	55,800	49,400	4.04	1.13
1991	30	3	14,500	39,500	48,100	2.72	0.82
1992	30	3	13,200	29,900	42,700	2.27	0.70
1993 ^f	30	3	26,700	37,400	92,700	1.40	0.40
1994	30	3	17,900	38,500	67,500	2.16	0.57
1995	30	3	17,400	27,500	66,700	1.60	0.41
1996 ^f	7	1	12,000	21,000	45,100	1.75	0.47
1997	7	1	5,700	16,000	18,400	2.81	0.87
1998	7	1	9,200	17,500	36,000	1.90	0.49

^a Mailout of hunter questionnaire began in 1956. Data collected on hunter days starting in 1960.

^b Season length and bag in Butte County. In 1996 seasons changed dramatically and listed dates are for Fremont County.

^c Season limit also.

^d Aggregate bag with sharptail grouse.

^e Both hunter report cards (first value shown) and telephone survey (second value shown) were used in 1983.

^f New telephone survey methodology.

Table 8. Season framework, estimated sharp-tailed grouse hunter numbers and harvest in Idaho, 1959-1998.

Year	Season (days) ^b	Daily Bag ^b	Hunters	Harvest	Hunter Days	Birds/Hunter	Birds/Day
1959 ^a	2	2 ^c					
1960	1	2 ^c					
1961	1	2 ^c					
1962	2	2 ^c					
1963	2	2					
1964	2	2					
1965	2	2					
1966	5	2					
1967	5	2					
1968	9	2					
1969	9	3					
1970	9	3					
1971	9	3					
1972	9	3					
1973	9	3					
1974	9	3					
1975	9	3					
1976	13	(1)	5,500	10,900	14,300	1.98	0.76
1977	14	2	4,400	7,400	14,400	1.68	0.51
1978	14	3	5,900	12,100	15,700	2.05	0.77
1979	14	3	5,900	12,800	16,000	2.17	0.80
1980	14	3	4,900	7,500	13,900	1.53	0.54
1981	14	3	4,900	8,500	12,700	1.74	0.67
1982	14	3	4,800	7,200	14,000	1.50	0.51
1983 ^d	14	1	3,200	5,600	8,600	1.75	0.65
1983 ^d	14	1	600	900	18,400	1.50	0.05
1984	14	1	800	900	2,500	1.13	0.36
1985	14	3	800	2,000	3,900	2.50	0.51
1986	14	(2)	700	1,700	3,300	2.43	0.52
1987	14	(2)	1,100	4,300	3,100	3.91	1.39
1988	16	(2)	800	3,500	3,400	4.38	1.03
1989	16	(2)	1,200	3,500	4,400	2.92	0.80
1990	16	(2)	1,900	9,800	8,700	5.16	1.13
1991	16	(2)	1,900	6,000	6,700	3.16	0.90
1992	16	(2)	2,400	9,300	7,600	3.88	1.22
1993 ^{de}	16	(2)	5,100	7,200	19,600	1.43	0.37
1994	16	(2)	7,800	8,200	32,400	1.08	0.25
1995	16	(2)	7,900	7,900	40,300	1.04	0.20
1996 ^e	16	(2)	7,000	14,700	31,900	2.10	0.46
1997	16	(2)	4,300	10,300	12,000	2.40	0.86
1998	16	(2)	NA	NA	NA	NA	NA

^a Sharp-tailed grouse included in mailout hunter questionnaire beginning in 1976.

^b Season length and bag in Fremont County. All bags except those in parentheses are in aggregate with sage grouse.

^c Season limit also.

^d Both hunter report cards (first value shown) and telephone survey (second value shown) were used in 1983. Unknown harvest location data not included in 1993.

^e New telephone survey methodology.

Table 9. Estimated wild turkey harvest in Idaho as determined by random telephone survey of license buyers, 1987-1998.

Year	Region							Statewide Total
	1	2	3	4	5	6	7	
1987	37	37	90	2	11	6	-	185
1988	58	82	79	12	6	1	-	238
1989	74	92	48	10	5	0	-	228
1990	97	117	60	3	6	-	-	291
1991	111	237	116	3	3	-	-	495
1992	123	181	93	2	4	-	-	487
1993	163	509	295	0	1	-	-	977
1994	265	777	246	0	6	-	-	1,339
1995	289	828	385	0	10	-	-	1,526
1996	413	779	494	-	15	-	-	1,720
1997	862	1,143	618	-	32	-	-	2,703
5-Yr Mean	398	807	408	-	13	-	-	1,653
1998	689	1,189	711	-	101	-	-	2,690
Change From 5-year Mean	+88%	+47%	+74%	-	+215%	-	-	+63%

Table 10. Turkey season framework summary, harvest estimate, and number of turkeys transplanted in Idaho, 1961 to 1998.

Year	Season Framework ^a			General Season Harvest			Controlled Hunts			Total ^b	Total	Turkeys Transplanted	
	Spring	Fall	Bag ^c	Spring	Fall ^d	Total	Hunts	Permits	Harvest	Harvest	Tags Sold ^e	Merriam	Other
1998	04/15-05/25	10/01-10/31	2	2,324		2,324	12	658	337	2,690	6,436	475 (ID)	105 RG (CA)
1997	04/14-05/11		1	2,451		2,451	10	528	252	2,703	5,114	442 (ID WA)	47 RG (CA)
1996	04/08-05/05		1	1,476		1,476	25	574	244	1,720	4,940	672 (ID)	47 RG (CA); 17 (WA)
1995	04/10-05/07		1	1,314		1,314	29	466	212	1,526	3,929	309 (ID BC)	14 RG (CA)
1994	04/11-05/08		1	1,130		1,130	25	345+	209	1,339	3,066	407 (ID ND)	70 RG (CA)
1993	04/12-05/09		1	750		750	14	405	153	903	2,303	487 (ID ND)	49 RG (CA)
1992	04/13-05/10		1	532		532	14	310	130	662	2,020	191 (ID ND)	
1991	04/08-05/05		1	393		393	13	215	102	495	1,754	465 (ID ND SD)	80 E (ND)
1990	04/09-05/06		1	185		185	17	226	106	291	1,436	143 (ID)	14 E (ND)
1989	04/10-05/07		1	137		137	26	271	91	228	1,339	99 (ID)	
1988	04/11-05/08		1	153		153	28	232	85	238	1,395	240 (ID)	29 RG (ID)
1987	04/13-05/10		1	117		117	30	180	68	185	814	91 (ID)	
1986	04/14-05/11		1	88		88	24	150	52	140	571	101 (NB 52; ID 49)	22 RG (ND)
1985	04/24-05/09		1	37		37	10	100	36	73	439		16 E (PA); 44 RG (TX)
1984	04/25-05/10		1	17		17	4	70	26	43	312		98 RG (KS 56; TX 42)
1983	04/23-05/01		1	19		19				19	270	64 (NM 44; SD 10; ID 10)	62 RG (OK 5; TX 57)
1982	04/24-05/02		1	29		29				29	281	73 (SD)	177 RG (CA 31; KS 51; OK 47; TX 48)
1981	04/25-05/03		1	33		33				33	379		
1980	04/26-05/04	09/20-09/28	1			26				26	416	35 (SD 25; ID 10)	
1979	04/28-05/06	09/15-09/30	1	6	2 (4)	12				12	424	5 (ID)	
1978	04/29-05/07	09/16-10/01	1	14	4 (3)	21				23	320		
1977	04/30-05/08	09/17-10/02	1	5	7 (3)	15				15	331		
1976	05/01-05/09	09/18-10/03	1	18	3 (4)	25				25	375		
1975	05/03-05/11	09/20-10/03	1	7	5 (4)	16				16	232		
1974	05/04-05/12	09/21-10/04	1	17	2 (11)	17				30	344		
1973		09/22-10/05	1		18 (23)	41				41	227	23 (ID)	
1972		09/23-10/06	1		55	55				55	190	25 (GF ^f 24; ID 1)	
1971		09/25-10/08	1		29	29				29	257	89 (WY 14; ID 15; GF ^f 60)	
1961-1970												87 (CO 39; ID 62)	
Total											2,948		110 E, 565 RG

^a Controlled hunts had same season framework as general hunts until after 1987 when controlled hunts started one week later and consecutive hunts began. In 1995, a late controlled hunt was allowed in Unit 1.

^b Until 1982, turkey harvest reflects known kills from mail-in reports. After 1982, the data are estimates from a random sample telephone survey.

^c Bearded turkey only in spring hunts, either sex in fall hunts. Instituted a second spring tag in 1998 valid 5/10-25 and a fall tag.

^d Numbers in parentheses are female harvest. Sex-specific harvest data unavailable for 1967 to 1972.

^e Sportsman Package license sold starting in 1989. Sportsman Package tags not included in total tags sold 1989-1997 and holders not sampled for harvest information until 1991. In 1992, approximately 800 SP tags were used. 1992 = 1,423; 1993 = 2,210; 1994 = 1,968; 1995 = 2,885; 1996 = 3,490; 1997 = 3,546; 1998 = 3,492.

^f Approximate number of game farm birds released in Boundary County by private citizens.

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Upland Game Surveys and</u>
PROJECT:	<u>W-170-R-23</u>		<u>Inventories</u>
SUBPROJECT:	<u>1</u>	STUDY NAME:	<u>Upland Game and</u>
STUDY:	<u>II</u>		<u>Waterfowl Population</u>
JOB:	<u>1</u>		<u>Status and Trends</u>

PERIOD COVERED: April 1, 1998 to March 31, 1999

UPLAND GAME - PANHANDLE REGION

PHEASANT

Population Characteristics

Although never of high quality or abundance, pheasant habitat has declined steadily in both quality and quantity over the years in the Idaho Panhandle as modern farming practices eliminated almost all cover and food patches. Remnant populations of wild pheasants are all that remain. Crowing pheasants are recorded during spring dove surveys run annually on established routes. From 1993-1997, the number of pheasants recorded has ranged from 2 to 8 per year. In 1998, 24 pheasants were recorded. In 1999, 27 pheasants were recorded. Thus, there is anecdotal information that pheasant numbers have increased recently.

Harvest Characteristics

For many years the Department released game farm birds in the spring prior to nesting and released cocks prior to the season opener to bolster declining wild populations and hunter success rates. Fewer and fewer landowners were willing to allow hunter trespass if pheasants were released on their property. Consequently, the Department's Coeur d'Alene River WMA near Harrison ended up being the only place available to release birds. In 1981 the region recommended that all pheasant releases be discontinued and the program was eliminated effective the fall of 1982.

Most pheasant hunting in the Panhandle Region occurs in the Palouse country around Worley, Plummer, and Tensed. Remnant wild populations still occur and provide fair hunting for those people who have permission to hunt on private land. Telephone survey information since 1996 has been collected at the statewide level only. Region-specific information on pheasant harvest from 1986 through 1995 is contained in the 1996 report.

Management Implications

The quality and quantity of pheasant habitat in the Panhandle Region has declined to a low point due to modern, clean farming techniques and monoculture crops.

In the Panhandle Region, the Department no longer supplements the wild population nor releases birds directly for harvest.

FOREST GROUSE

Harvest Characteristics

Few hunters take the time to hunt primarily for grouse. All three species are called "fool hens" by local residents and are more often than not harvested very close to a road. Their apparent disregard of danger makes it possible for hunters to harvest birds with relative ease.

Harvest information specific to forest grouse was not collected by regional management personnel during this reporting period. Changes in hunter numbers, harvest, etc., are believed to be related more to changes in telephone survey methodology than actual changes in grouse populations. Telephone survey information beginning in 1996 has been collected at the statewide level only. Region-specific information on grouse harvest from 1986 through 1995 is contained in the 1996 report.

Management Implications

Wet, cold, spring weather in northern Idaho is the rule rather than the exception. Adverse spring weather can limit the production and survival of forest grouse young for several years at a time.

Starting with the 1988 season, the opening date for the forest grouse season was changed to a calendar date of September 1. In 1990 the season was extended through the end of December.

GRAY PARTRIDGE

Population Characteristics

Gray partridges in North Idaho are associated with agricultural lands near Worley, Plummer, Harrison, and Post Falls. Widespread burning of crop residues in August and September eliminates most potential food and cover patches that would help huns to survive the winter months. Intensive farming also contributes to fewer huns by eliminating permanent cover patches, annual weeds that serve as food sources, wind breaks, fence rows, and riparian zones.

Harvest Characteristics

Partridge hunting effort in the Panhandle Region is very low. A few hunters are checked on the Rathdrum Prairie and the rolling hill country near Worley and Plummer. Historic harvest

information obtained from the statewide telephone survey is believed to reflect, almost entirely, Panhandle Region hunters hunting in other regions. Telephone survey information beginning 1996 has been collected at the statewide level only.

Management Implications

Partridge populations are associated with agricultural lands. Relatively low acreage of quality agricultural lands and modern farming practices reduce the region's ability to support higher partridge populations.

WILD TURKEY

Harvest Characteristics

Turkey populations allowed further expansion of hunting opportunity during this report period. Spring permit numbers were increased from 450 to 535, the general season was extended by 10 days to May 25, and the bag limit for the 1999 season was increased from one to two spring gobblers. Hunters were allowed to pursue a second gobbler only after May 9, to allow general hunters to pursue turkeys before controlled hunt permit holders again began to hunt. In addition, a fall controlled hunt for any turkey was added during late October for a possible third turkey.

Over the past ten years, turkey hunter numbers in the Panhandle have increased from 118 to nearly 2,000 (Table 1). About one-quarter of these hunters participate in the earlier controlled hunts where success rates are high, and competition is low. Drawing odds for these hunts are good (Table 2). By delaying the bulk of turkey hunting until May 1, we allow greater dispersal of gobblers from winter flocks to woodlands, which reduces landowner/hunter conflicts, hunter/hunter conflicts, and likely serves the resource by ensuring breeding is complete before heavy disturbance by hunters begins.

Trapping and Transplanting

In cooperation with the National Wild Turkey Federation, the Department trapped 189 turkeys from the Panhandle and released them in California. Approximately 60 turkeys, trapped near Bonners Ferry, were released in the Salmon Region. Thirty-one additional birds were trapped and released in other areas of the Panhandle Region (Table 3).

Disease

Two hundred ten turkeys were screened for various diseases during January 1999 as part of the transplant to California.

Disease	Reactors/Sample Size (Test)	Retest of Reactors
Avian hemorrhagic enteritis	40/117 (AGID)	
Avian paramyxovirus (NVD)	0/93 (HI 1:4) 0/117 (HI)	
Avian influenza	3/93 (AGID) 0/117 (AGID)	
Mycoplasma gallisepticum	16/117 (MG Plate) 12/93 (PA/HI 1:20)	0/16 (HI)
Mycoplasma meleagridis	0/93 (HI 1:20) 21/117 (HI)	
Mycoplasma synoviae	27/93(PA/HI 1:20) 34/117 (MS Plate)	0/34 (HI)
Salmonella typhimurium	2/93 (MAT 1:20) 0/117 (MAT)	
Salmonella pullorum	3/93 (MAT 1:20) 6/117 (Plate)	One examined; no clinical signs 0/6 (MAT)

The FDA has no restrictions against shipping birds with *M. meleagridis* or *M. sinoviae* (Karen Jones, California Department of Fish and Game, personal communication 1999). One hundred eighty-nine birds were shipped to the California Department of Fish and Game during January 1999 after testing.

From 1987 through 1993, 69 turkeys from Boundary County were tested for various diseases. Some of these samples were of hemolyzed blood, and the types of tests used are unknown. Therefore, caution should be exercised in interpreting these data.

Control

In the past most turkey depredation problems have been addressed by removing turkeys from problem areas and releasing them in suitable, but vacant, habitat. During the 1998-1999 winter, two new control measures were explored.

A permit to kill 20 turkeys was issued to one landowner near Bonner's Ferry. Five turkeys were killed and turned in to the Department for disposal. The landowner expressed satisfaction that we had addressed his problem, although some turkeys persisted in the area later during winter.

In Hoodoo Valley, a depredation hunt was tried. Ten permits were issued to unsuccessful controlled hunt applicants from the spring 1998 hunt. Nine hunters killed a turkey, resulting in temporary dispersal of the birds. Significant problems did, however, return, with 49 of 300 turkeys trapped and released elsewhere (mostly California).

MOURNING DOVE

Population Surveys

Mourning doves are common in the Panhandle Region and in some areas are locally numerous. Most mourning doves are found during the summer around agricultural lands near Worley, Plummer, Harrison, Post Falls, and Bonners Ferry.

In May 1999, three call-count surveys were completed in the Panhandle Region (Table 4). One route was run in Boundary County, one in Kootenai County, and one in Shoshone County. The number of mourning doves heard per mile has increased slightly during the past 14 years. Route replacement during 1993 precludes direct comparison of subsequent data route with that prior to 1993.

Harvest Characteristics

In North Idaho most mourning doves leave before the season opens. The season opener usually coincides with the first cool evening temperatures of late August. Also, most of the grain and grass seed farmers annually burn their fields after harvest. Starting in mid-August and ending in late September, most cover and food patches are consumed by fire.

Idaho has had a very liberal mourning dove season and bag limit in the past. However, due to the declining trend in the mourning dove breeding population throughout the west, the hunting season was shortened by one month in 1987 and the bag and possession limits reduced from 15 and 30 to 10 and 20, respectively.

Mourning dove hunting effort in the Panhandle Region is very low. A few hunters are checked on opening day on Harrison Flats and near Athol on the edge of the Rathdrum Prairie. Telephone survey information beginning in 1996 has been collected at the statewide level only.

Management Implications

Widespread burning of crop residues practiced by area farmers coupled with the first cool evening temperatures of late August usually combine to move mourning doves south out of the region before the hunting season opens.

Table 1. Turkey harvest in Panhandle Region, 1989-1999.

Hunt	Number of Hunts	Permits Available	Hunters	Birds Taken	Day Per Bird	Total Days Hunted
1989						
Controlled	6	180	118	74	ND	ND
General	0		0	0	0	0
1990						
Controlled	6	180	147	97	ND	ND
General	0		0	0	0	0
1991						
Controlled	9	195	187	99	5.2	518
General	0		0	0	0	0
1992						
Controlled	12	300	285	123	7.1	875
General	0		0	0	0	0
1993						
Controlled	12	395	219	155	7.5	1165
General	0		0	0	0	0
1994						
Controlled	23	457	409	206	5.9	1223
General ^a	1		256	77	10.0	769
1995						
Controlled	23	436	417	203	5.5	1117
General	1		557	86	23.9	2057
1996						
Controlled	17	435	444	221	6.3	1402
General	1		1043	192	19.1	3671
1997						
Controlled	2	450	398	216	4.9	1059
General	1		2223	643	13.4	8632
1998						
Controlled	2	450	389	225	5.7	1287
General	1		1534	464	10.7	4972
1999 ^b						
Controlled	3 ^c	935	ND	ND	ND	ND
General	1		ND	ND	ND	ND

^a All general hunts include multiple units.

^b Two spring gobblers and a fall turkey allowed in 1999.

^c One of these is a fall controlled hunt for any turkey.

Table 2. Drawing odds for the Panhandle Region turkey hunts, 1998.

Hunt Area	Permit Level	Applications Received	Applicants Per Permit
9001	125	349	2.8
9002	325	128	0.4

Table 3. Wild turkey releases in the Panhandle Region during the winter of 1998-1999.

Unit	Release Site	Total	M	F
5	Cougar Creek	11	2	9
1	Nordman	10	Unknown	Unknown
Total		21		

Table 4. Mourning dove call-count survey results, Panhandle Region, 1986-1999.

Year	Routes	Miles Counted	Doves Heard	Doves Seen	Doves Heard Per Mile	Doves Seen Per Mile
1986	3	60	5	3	0.08	0.05
1987	3	60	5	0	0.08	0.00
1988	3	60	6	10	0.10	0.17
1989	3	60	1	3	0.02	0.05
1990	3	60	4	2	0.07	0.03
1991	3	60	5	4	0.08	0.07
1992	3	60	7	11	.012	0.18
1993 ^a	6	120	23	13	0.19	0.11
1994	3	60	13	8	0.22	0.13
1995	3	60	6	4	0.10	0.07
1996	3	60	18	19	0.30	0.32
1997	3	60	18	19	0.30	0.32
1998	3	60	14	4	0.23	0.07
1999	3	60	24	9	0.40	0.15

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Upland Game Surveys and</u>
PROJECT:	<u>W-170-R-23</u>		<u>Inventories</u>
SUBPROJECT:	<u>2</u>	STUDY NAME:	<u>Upland Game and</u>
STUDY:	<u>II</u>		<u>Waterfowl Population</u>
JOB:	<u>1</u>		<u>Status and Trends</u>

PERIOD COVERED: April 1, 1998 to March 31, 1999

UPLAND GAME - CLEARWATER REGION

PHEASANT

Abstract

Regional harvest information from the telephone survey of 1995 pheasant hunters indicated hunter pressure was relatively stable (+4%) compared to the mean of the previous 5-year period and that harvest decreased (-20%). Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

Population Surveys

In most years, if snow is present, hens are as equally observable as cocks, and assuming a 50:50 pre-season sex ratio (MacMullen 1960 and Allen 1956), the percent cocks harvested can be calculated via the following equation:

$$\text{Percent cock harvest} = \frac{\text{hens/cock} - 1}{\text{hens/cock}} \times 100$$

Allen (1956) implied that a 90% cock harvest would not be excessive. Years of regional sex ratio data indicate that a 90% cock harvest has never been achieved (Table 1), indicating that extending season length and/or increasing bag limits was warranted. Consequently, the season length was extended, and the bag and possession limits liberalized.

In 1990, 11 brood routes were established in the Clearwater Region with the primary emphasis directed at better monitoring pheasant population trends in the region. Ninety-three pheasants were observed in 1998 (Table 1). These results were an improvement over the previous 3 years, but still lower than peaks in the early 1990s. Other species recorded included quail, gray partridge, doves, cottontail rabbits, and raptors.

Harvest Characteristics

Regional harvest information from the most recent year of the telephone survey data (1995) indicated hunter pressure on pheasants was relatively stable (+4%) compared to the mean of the past 5-year period and that harvest decreased (-20%) (Table 2). Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints. However, brood survey results indicate increased production which, along with a season extension of 2 weeks beginning in 1996, should have improved harvest opportunities.

Management Implications

Populations in north Idaho have been at reduced levels since 1983. An abundance of fields of small grains and adjacent idle uplands provides adequate nesting cover for pheasants in the Clearwater Region. The population's limiting factor is inadequate winter cover and/or inadequate winter food adjacent to winter cover. Development of scattered, permanent wintering areas providing adequate food and cover in those portions of the region where they are lacking would allow pheasant populations to increase.

The Department began working with the U.S. Soil Conservation Service and the U.S. Agricultural Stabilization and Conservation Service regarding the Conservation Reserve Program (CRP) in 1986 and has continued this cooperation since then. This program has great potential to increase upland game populations in the future, and the Clearwater Region will place high priority on its involvement with this program.

In 1987, the Department also initiated a statewide Habitat Improvement Program (HIP) for upland game directed primarily towards pheasants, quail, gray partridge, and chukar partridge. This program, in conjunction with CRP, has great potential to positively affect upland game populations, particularly pheasants.

CALIFORNIA QUAIL

Abstract

When compared with the previous 5-year average, California quail hunter numbers increased in 1995 (+4%); however, quail harvest declined slightly (-3%). Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

Population Surveys

No reliable population surveys are currently conducted for California quail in the Clearwater Region.

Harvest Characteristics

Regional harvest information on quail since 1985 has varied (Table 3). When compared with the previous 5-year average, 1995 hunter numbers increased slightly (+4%), but quail harvest declined (-3%). Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

Management Implications

Availability of quail habitat probably will not change dramatically in the next few years. California quail continue to be a lightly-hunted species in the region, and management will continue to be directed at maximizing hunting opportunity through liberal, standardized seasons and bag limits.

MOUNTAIN QUAIL

Abstract

Populations of mountain quail are limited to a few scattered sites ranging from Lewiston to Riggins, primarily adjacent to the Salmon River. A final project report from a mountain quail research project is in preparation.

Population Surveys

The season on mountain quail was closed for the first time in 1984 because of concern for declining populations. Mountain quail population fluctuations are difficult to monitor, but it is generally believed that they have declined due to unknown causes during the past 20 years. These declines are probably the result of subtle habitat changes unfavorable to mountain quail.

A graduate student research project on mountain quail was initiated in 1991. The focus of the project shifted from spring/summer habitat use and seasonal movements to fall/winter emphasis in 1994. The project has now been completed and a final project report is in preparation.

FOREST GROUSE

Abstract

The 1995 forest grouse harvest increased 45% compared to the previous 5-year period; the number of hunters also increased (+61%). Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

Population Surveys

Random brood counts and drumming route counts were discontinued in 1988. Presently none of these surveys are conducted to monitor population trends or predict fall harvest.

Harvest

Collection of random field check harvest data was discontinued in 1988. Regional telephone harvest survey information on forest grouse since 1984 has been variable (Table 4). The 1995 harvest increased 45% compared to the mean of the previous 5-year period and the number of hunters also increased (+61%). Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

Management Implications

The limited amount of data currently collected on forest grouse and the lack of standard techniques for collecting it precludes its effective use for management purposes. There are few avid forest grouse hunters in the Clearwater Region. Most grouse are currently harvested incidental to hunting other species, and many are taken from or immediately adjacent to forest roads. Therefore, the majority of forest grouse in the region are seldom hunted.

SHARP-TAILED GROUSE

Abstract

Eighty-two sharp-tailed grouse were transplanted into the region in 1987 and 1988 to restore lost populations.

Population Characteristics

Substantial populations of Columbian sharp-tailed grouse were found in this area during the early 1920s but were believed to have been eliminated by the mid-1930s. Factors contributing to the decline and eventual loss of the species from the area were overhunting, overgrazing by livestock, and intensified agricultural practices resulting in habitat destruction.

Harvest Characteristics

There has been no hunting season for sharp-tailed grouse in the Clearwater Region for several decades.

Trapping and Transplanting

A total of 82 sharp-tailed grouse were transplanted in the Clearwater Region during 1987 and 1988 from birds captured in the Southeast and Upper Snake Regions. Due to the small number of birds and the difficulty in monitoring, limited information on the success of these transplant efforts is available.

Management Implications

It is extremely difficult to reestablish populations of sharp-tailed grouse by transplanting relatively small numbers of birds in the spring. Future efforts may require increased sample sizes and more extensive monitoring.

CHUKAR PARTRIDGE

Abstract

A research project on chukar ecology begun in spring 1995 was completed in 1997. Compared to the 1997 aerial survey results, the number of chukar partridge observed in 1998 rose slightly along the Snake River (+3%) and increased sharply along the Salmon River breaks (+99%); similar increases were evident in birds per square mile (Table 5). Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

Population Surveys

No distribution surveys are conducted in the Clearwater Region. In general, the majority of the chukars within the region are located along the breaks of the Snake, Salmon, and Clearwater Rivers.

A chukar ecology project in Unit 11 was conducted from spring 1995 to 1997. Radio-marked chukars along the breaks of the Salmon and Snake Rivers were monitored to define habitat use, movements, distribution patterns, nesting chronology and success, and overall mortality causes and rates. A final report was completed in 1998.

Production

Random brood routes and counts are no longer conducted.

Since 1985 the breaks of the Snake River have been surveyed annually from Tenmile Creek upstream to Corral Creek by helicopter (Table 5). Since 1991 the Salmon River breaks from White Bird to Maloney Creek have also been surveyed annually. Although it is difficult to make a final determination, it appears that helicopter surveys may be a reliable index to determine trends in fall chukar populations. Although other factors are apparently involved when predicting fall harvest, general trends appear predictable based on the surveys. Compared to the 1997 aerial survey results, the number of chukar partridge observed in 1998 rose slightly along the Snake River (+3%) and increased sharply along the Salmon River breaks (+99%). Most values recorded in 1998 are above corresponding averages from 1991-1995; group size observed remained relatively stable during both surveys.

Harvest Characteristics

A summary of the Clearwater Region chukar harvest since 1984 from the telephone survey is provided (Table 6). Increases were reported in 1995 harvest (+15%) and hunter participation (+20%) compared to the mean during the previous 5-year period. Fluctuating harvest over the past several years apparently reflect stochastic variables, possibly weather impact on productivity. Telephone survey data was not collected at the regional level after 1995 due to budgetary constraints.

Management Implications

Annual chukar partridge populations, like most upland game, are greatly influenced by weather conditions during the nesting and brood-rearing seasons. Season lengths and bag and possession limits apparently do not need to be reduced for chukar partridge during periods of population lows. Upland game density-dependent hunting pressure is well documented in pheasant and quail populations (George et al. 1980, Vance and Ellis 1972, Kabat and Thompson 1963, Gallizoilli and Swank 1958, and Bennitt 1951), and it is likely no different for chukar partridge.

GRAY PARTRIDGE

Abstract

Compared to 1990-1994 averages, increases in hunter numbers (+10%) and gray partridge harvested (+6%) occurred in 1995. Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

Population Surveys

No standardized population surveys are currently conducted for gray partridge in the Clearwater Region. However, incidental gray partridge counted in 1998 on the 11 Clearwater Region pheasant brood routes indicate that populations may cycle on an alternate year basis.

Harvest Characteristics

Regional harvest information on gray partridge has varied (Table 7). Compared to 1990-1994 averages, increases occurred in 1995 hunter numbers (+10%) and birds harvested (+6%). Telephone survey data was not collected at the regional level after 1995 due to budgetary constraints.

Management Implications

Favorable weather during early summer will allow populations to remain at current levels. No adjustment in season length or bag and possession limits apparently are necessary to accomplish population increases during or following population lows caused by adverse nesting and/or winter weather conditions.

WILD TURKEY

Abstract

Two transplants of turkeys (64 birds) were completed within the Clearwater Region, in addition to the capture and translocation of 27 to the state of California during the reporting period for a total of 91 turkeys (Table 9). Harvest values from the telephone survey indicated a small increase in the number of turkeys harvested in 1998.

Population Surveys

The Department does not have a reliable survey method for turkeys. However, population status and trend can be inferred to a limited degree from harvest trend, turkey distribution, and general impressions of bird numbers from year to year. This information suggests that turkey numbers are increasing and the distribution of turkeys is expanding throughout the region. The presence of suitable habitat, favorable weather conditions, private landowner feeding operations during winter, and an aggressive trap and transplant program are likely responsible for this trend.

A turkey research project was conducted in Unit 11 in the early 1990s. Among the more interesting findings were the long-distance seasonal movements of turkeys between Cottonwood and Waha, exceptionally high productivity among young birds, and relatively low hunting-related mortality. Nesting and roosting habitat do not appear to be limiting in this area.

Harvest Characteristics

Turkey harvest estimates have been determined by management unit since 1983 (Table 8). Regional turkey harvest has increased since that time, and is a function of expanding turkey distribution and numbers, and increasing hunter effort. Turkey harvest in the Clearwater Region climbed to a new high of 1,189 birds for the 1998 season.

Winter Feeding

Landowners in some areas traditionally feed flocks of wintering birds. Feeding is often associated with livestock feedlots. Because of average to below-average winter weather severity in most recent years, it has not been necessary to initiate any Department-sponsored feeding operations, although feed was sometimes supplied upon request to private individuals who had large numbers of turkeys on their property or if turkeys were negatively impacting livestock operations or in areas with significant snowfall and corresponding lack of natural winter feed.

Trapping and Transplanting

Two transplants of turkeys (64 birds) were completed in the Clearwater Region, in addition to one transplant to the state of California (27 birds) during the reporting period for a total of 91 turkeys translocated (Table 9). Two new regional release sites were completely stocked this

year. Temporary personnel time was, in part, funded by a donation from the National Wild Turkey Federation. Additional sites in the region will be evaluated for future releases of turkeys.

Management Implications

The aggressive trap and transplant program in combination with expansion of existing flocks should result in a continued increase in numbers and distribution of turkeys in the Clearwater Region. The present hunting season structure does not appear to adversely impact the expansion of populations.

MOURNING DOVE

Abstract

Reported dove harvest and hunter numbers in 1995 in the Clearwater Region decreased (-54% and -32%, respectively). Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

Population Surveys

There are only 2 coo count routes conducted in the Clearwater Region. By themselves they do not provide an accurate index to dove production or population trend (Table 10). When those results are incorporated with the results from all other routes in the state, an accurate index to statewide dove production may be achieved and measurement of dove production in Idaho should probably be approached on a statewide basis.

Harvest Characteristics

The annual harvest of mourning doves in the Clearwater Region is dependent upon the progress of the fall migration. In most years a majority of the migrating doves have passed southward out of the Clearwater Region prior to opening day, influencing hunter opportunity. Regional harvest information on mourning doves since 1985 has varied (Table 10). Clearwater Region hunter numbers and harvest appeared to decrease significantly (-32% and -54%, respectively) from 1994 to 1995. Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

Management Implications

No trapping, banding, or research have been conducted on doves in the Clearwater Region for several years. Dove management in the Clearwater Region consists of permitting an annual hunting season as liberal as the federal season framework allows and conducting the annual coo counts on routes located within the region. In 1987 the federal season framework reduced the maximum allowable season length to 30 days and maximum daily bag and possession limits to 10 and 20, respectively. Idaho's hunting season regulations since then have reflected those changes.

RABBITS AND HARES

Abstract

Reported harvest of cottontail rabbits in 1995 was 2,518 region-wide, an increase of 24% from 1994. Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

COTTONTAIL RABBIT

There is no reliable measure of cottontail production or population trend in the region, and it is not known what effect weather has on production. Lack of adequate brush for winter cover adjacent to adequate food is probably limiting for cottontails on much of the unforested upland areas in the Clearwater Region.

Harvest Characteristics

Cottontail harvest appears to be well under minimum sustainable levels. Reported harvest in 1995 was 2,518 region-wide. Telephone survey data were not collected at the regional level after 1995 due to budgetary constraints.

Management Implications

Management direction for cottontail rabbits in the Clearwater Region has been and will continue to be to provide maximum hunter opportunity through liberal seasons and bag limits. Cottontails are lightly hunted, and liberal seasons and regulations apparently do not adversely impact cottontail numbers.

SNOWSHOE HARE

Population Surveys

There is no measure of populations, production, or trends in the region. Hare populations may be cyclic in nature and dependent upon forage availability, disease, and other density-dependent factors. Populations appear scattered and localized, with spruce-fir forest in young age classes as dominant cover in preferred habitat.

Harvest Characteristics

Harvest levels are likely below sustainable levels. Harvest data are not available for 1998; however, harvest levels have probably continued to be relatively insignificant.

Management Implications

Management direction of snowshoe hares in the Clearwater Region has been and will continue to be to provide maximum hunter opportunity through liberal seasons and bag limits. Management direction to promote hare hunting would probably have little effect on hare populations.

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Table 1. Pheasant population characteristics and production in the Clearwater Region, 1989-1998.

Year	Winter Sex Ratio ^a	N ^b	Routes & Miles Counted	Birds Per Mile	Percent Unsucc. Females	Juv:100 Adult Females	N ^b	Average Brood Size
1989	1.6	67	-	-	-	-	-	-
1990 ^c	1.9	514	11 (220)	0.7	-	153	-	-
1991 ^d	ND	ND	11 (220)	0.3	13	550	56	6.0
1992	ND	ND	11 (220)	0.8	41	517	164	5.9
1993	ND	ND	11 (220)	0.2	33	667	35	5.8
1994	ND	ND	11 (220)	0.8	13	508	165	6.1
1995	ND	ND	11 (220)	0.01	100	0	1	0.0
1996	ND	ND	11 (220)	0.1	33	100	27	5.5
1997	ND	ND	11 (220)	0.3	0	771	61	7.7
1998	ND	ND	11 (220)	0.4	33	456	93	6.1

^a Hens per cock.

^b Sample size.

^c Not all brood count data available.

^d No winter surveys conducted after 1990

Table 2. Estimated pheasant harvest in the Clearwater Region obtained from the telephone survey of hunters, 1989-1998.

Year	Bag/Possession Limits	Hunters	Birds	Total Hunter Days	Birds per Hunter Days
1989 ^a	3/6	2,088	7,368	10,739	0.7
1990	3/6	2,299	14,928	17,440	0.9
1991	3/6	2,170	7,773	12,775	0.6
1992	3/6	2,400	9,644	17,009	0.6
1993	3/6	4,638	15,245	27,892	0.5
1994	3/6	4,533	16,313	25,547	0.6
1995	3/6	3,330	10,235	18,135	0.6
1996 ^b	3/6	ND	ND	ND	ND
1997 ^b	3/6	ND	ND	ND	ND
1998 ^b	3/6	ND	ND	ND	ND

^a First days of season, bag/possession limit was 2/2, 6th day of season 2/5, and remainder of season 3/6.

^b Telephone survey data at the regional level was not collected after 1995.

Table 3. Estimated quail harvest in the Clearwater Region obtained from the telephone survey of hunters, 1989-1998.

Year	Bag/Possession	Hunters	Birds	Total Hunter	Birds per
	Limits			Days	Hunter Days
1989	10/20	700	3,532	3,088	1.1
1990	10/20	1,341	15,509	10,907	1.4
1991	10/20	903	5,525	5,315	1.0
1992	10/20	1,398	10,092	6,163	1.6
1993	10/20	3,000	21,213	18,121	1.2
1994	10/20	3,203	21,520	18,130	1.2
1995	10/20	2,051	14,358	11,332	1.3
1996 ^a	10/20	ND	ND	ND	ND
1997	10/20	ND	ND	ND	ND
1998	10/20	ND	ND	ND	ND

^a Telephone survey data at the regional level was not collected after 1995.

Table 4. Estimated forest grouse harvest in the Clearwater Region obtained from the telephone survey of hunters, 1989-1998.

Year	Bag/Possession	Hunters	Birds	Total Hunter	Birds per
	Limits			Days	Hunter Days
1989	4/8	4,473	25,848	38,140	0.7
1990	4/8	4,385	23,086	27,901	0.8
1991	4/8	4,364	24,127	30,026	0.9
1992	4/8	4,117	16,638	26,851	0.6
1993	4/8	11,782	55,692	89,243	0.6
1994	4/8	14,796	70,255	117,135	0.6
1995	4/8	12,692	54,993	94,736	0.6
1996 ^a	4/8	ND	ND	ND	ND
1997	4/8	ND	ND	ND	ND
1998	4/8	ND	ND	ND	ND

^a Telephone survey data at the regional level was not collected after 1995.

Table 5. Summary of helicopter surveys of chukars conducted in Management Unit 11, 1989-1998.

Year	Area	Number Birds	Number Groups	Groups/Square Mile	Birds/Square Mile	Birds/Group
1989	Snake R. breaks	1,095	74	5.3	78.8	14.8
1990	Snake R. breaks	1,245	100	7.9	97.8	12.5
1991	Snake R. breaks	745	84	5.9	53.0	9.0
1991	Salmon R. breaks	1,330	136	11.9	116.5	9.8
1992	Snake R. breaks	867	100	6.2	53.5	9.0
1992	Salmon R. breaks	1,230	155	13.0	103.5	7.9
1993	Snake R. breaks	307	35	2.2	19.0	8.8
1993	Salmon R. breaks	537	90	7.6	45.1	6.0
1994	Snake R. breaks	638	49	3.0	39.4	13.0
1994	Salmon R. breaks	680	91	7.6	57.1	7.5
1995	Snake R. breaks	137	23	1.4	8.5	6.0
1995	Salmon R. breaks	157	47	3.4	13.2	3.3
1996	Snake R. breaks	829	39	2.4	51.2	21.3
1996	Salmon R. breaks	561	51	4.3	47.1	11.0
1997	Snake R. breaks	1,124	82	5.1	69.4	13.7
1997	Salmon R. breaks	544	56	4.7	45.7	9.7
1998	Snake R. breaks	1,159	91	5.6	71.5	12.7
1998	Salmon R. breaks	1,084	108	9.1	91.1	10.0

Table 6. Estimated chukar partridge harvest in the Clearwater region obtained from the telephone survey of hunters, 1989-1998.

Year	Bag/Possession Limits	Hunters	Birds	Total Hunter Days	Birds per Hunter Days
1989	8/16	1,125	8,383	4,392	1.9
1990	8/16	1,532	11,045	7,371	1.4
1991	8/16	1,751	9,244	6,841	1.4
1992	8/16	1,794	9,720	5,208	1.9
1993	8/16	2,628	14,441	11,936	1.2
1994	8/16	2,791	17,531	13,635	1.3
1995	8/16	2,518	14,256	12,266	1.2
1996 ^a	ND	ND	ND	ND	ND
1997 ^a	ND	ND	ND	ND	ND
1998 ^a	ND	ND	ND	ND	ND

^a Telephone survey data at the regional level was not collected after 1995.

Table 7. Estimated gray partridge harvest in the Clearwater Region obtained from the telephone survey of hunters, 1989-1998.

Year	Bag/Possession		Hunters	Birds	Total Hunter	
	Limits				Days	Birds per Hunter Days
1989	8/16		442	666	1,928	0.3
1990	8/16		1,139	5,911	6,479	0.9
1991	8/16		1,012	6,215	5,661	1.1
1992	8/16		784	3,091	2,954	1.0
1993	8/16		2,505	8,658	13,668	0.6
1994	8/16		2,585	8,803	14,796	0.6
1995	8/16		1,767	6,905	9,281	0.7
1996 ^a	ND		ND	ND	ND	ND
1997 ^a	ND		ND	ND	ND	ND
1998 ^a	ND		ND	ND	ND	ND

^a Telephone survey data at the regional level was not collected after 1995

Table 8. Estimated wild turkey harvest in the Clearwater Region by unit, 1989-1998.

Year	Unit ^a											Total Hunter	
	8	8A	10A	11	11A	12	13	14	15	16	18	Total	Days
1989	15	-	31	22	10	-	4	4	-	-	6	92	2,014
1990	15	10	31	38	10	-	13	-	-	-	1	118	1,980
1991	35	13	59	87	38	-	3	-	-	-	2	237	3,650
1992	21	18	42	37	34	-	5	-	0	0	24	181	3,651
1993	59	88	127	137	39	-	0	-	20	29	10	509	9,491
1994	90	192	372	115	141	-	0	13	0	26	0	949	14,573
1995	57	114	286	100	57	-	0	86	57	57	14	828	15,000
1996	47	116	280	94	91	22	0	35	69	25	0	779	11,000
1997	40	123	385	189	182	13	41	27	51	92	0	1143	12,813
1998	65	194	444	134	157	42	23	55	0	55	18	1189	13,160

^a Units having no data were not open to hunting during those years

Table 9. Turkey transplant history for the Clearwater Region, 1961-1999.

Year	Sub-Species	Release Site Drainage-Unit	Source-Unit	Birds Released			New or Supple. Release
				M	F	Total	
1961	M	Deer Cr-18	Colorado	4	13	17	N
1962	M	Shingle Cr-18	Colorado	3	8	1	N
1963	M	Skookumchuck Cr-14	Colorado	4	7	11	N
1965	M	Webb Cr-11	Shingle Cr-18	2	8	10	N
1966	M	Webb Cr-11	John Day Cr-14	2	0	2	S
1971	M	Potlatch R-8	St. Maries-6	4	11	15	N
1972	M	Potlatch R-8	St. Maries-6	2	0	2	S
1973	M	Potlatch R-8	St. Maries-6	2	0	2	S
	M	Webb Cr-11	St. Maries-6	4	0	4	S
1980	M	Deer Cr-18	South Dakota	3	7	10	S
1982	M	Capt John Cr-11	South Dakota	5	14	19	N
	M	Slate Cr-14	South Dakota	3	9	12	S
	R	Lawyers Cr-11A	Kansas, Texas	7	17	24	N
	R	Cottonwood Cr-11A	Texas	4	8	12	N
	R	Big Canyon Cr-11A	Oklahoma	4	11	15	N
1983	R	Big Canyon Cr-11A	Oklahoma, TX	3	15	18	S
1985	R	Wolf Cr-13	Texas	4	30	34	N
	E	Canyon Cr-10A	Pennsylvania	6	10	16	N
1986	M	Bedrock Cr-8	Hornet Cr-22	4	14	18	N
	M	Pine Cr-8	Hornet Cr-22	4	12	16	N
	R	Deer Cr-11	North Dakota	4	10	14	N
1988	M	Cottonwood Cr-13	Cottonwood B-11	4	21	25	N
	M	Bear Cr-8	Hornet Cr-22	6	23	29	N
	M	Six-Mile Cr-11A	Capt John Cr-11 Hornet Cr-22	11	18	29	N
1989	M	Lawyers Cr-11A	Woodland-10A	3	15	18	S
1990	M	John Day Cr-14	Big Bear Cr-8	6	10	16	N
	E	Jim Ford Cr-10A	N. Dakota	9	8	17	N
1991	M	John Day Cr-14	Big Bear Cr-8	3	14	17	S
	M	Little Cnyn-11A	Brush Cr-9	10	24	34	N
	M	Big Canyon Cr-11	Dawson Rdge-1	10	25	35	S
	E, R	Upper Fords Cr-10A	N. Dakota	5	35	40	S
	E	Dicks Cr-8A	N. Dakota	4	36	40	N
	M	Slate Cr-14	Cottonwood B.-11	6	21	27	S
1992	M	Lawyers Cr.-11	Kootenai R.-1	7	21	28	N
	M	Skookumchuck-14	N. Dakota	10	21	31	S
	M	Cottonwood B.-11	N. Dakota	7	10	17	S
1993	M	White bird Cr.-14	Grouse Cr.-1	6	24	30	S
	M	Hamilton Cr.-13	N. Dakota	4	20	24	S
	M	Rock Cr.-11	N. Dakota	3	22	25	N
	M	Orofino Cr.-10A	Big Bear Cr-8	6	20	26	S
	M	Rock Cr-11	Big Bear Cr.-8	3	0	3	N
	M	Wapshilla Cr.-11	Blue Cr.-3	4	8	12	S
	M	Whiskey Cr.-10A	Grouse Cr.-1	6	6	12	S
	M	Whiskey Cr.-10A	Blue Cr.-3	2	8	10	S
	M	Pickle Canyon-11A	Big Bear Cr.-8	5	12	17	N

Table 9. Turkey transplant history for the Clearwater Region, 1961-1999.

Year	Sub-Species	Release Site Drainage-Unit	Source-Unit	Birds Released			New or Supple. Release
				M	F	Total	
1994	M	Pickle Canyon-11A	Little Cnyn-11A	5	0	5	N
	M	Allison Cr.-14	Big Bear Cr-8	6	4	10	N
	M	Allison Cr.-14	Big Bear Cr.-8	0	11	11	N
	M	Allison Cr.-14	Maas g.-1	0	8	8	N
	M	Allison Cr.-14	Houcks Spur-1	4	0	4	N
	M	Flannigan Cr.-8	Maas g.-1	1	2	3	N
	M	Flannigan Cr.-8	Houcks Spur-1	4	24	28	N
	M	Flannigan Cr.-8	Little Cnyn-11A	4	0	4	N
1995	M	5-Mile Cr.-11A	Big Bear Cr-8	6	0	6	S
	M	Flat Cr.-8	Big Bear Cr.-8	6	0	6	N
	M	Allison C.r-14	Crow Bench-11A	1	18	10	S
	M	Allison Cr.-14	Ctnwood Cr-11A	5	0	5	S
1996	M	Deep Cr.-8	Port Hill, B.C.	12	18	30	N
	M	Boulder Cr.-8	Port Hill, B.C.	3	5	8	S
	M	Eagle Cr.-11	Port Hill, B.C.	6	19	25	N
	M	Grave Cr.-11	Orofino,-10A	1	5	6	N
	M	Deer Cr.-11	Big Bear Cr.-8	10	28	38	N
	M	Blanco Cr.-15	Jacks Cr.-11A	4	6	10	N
	M	Squaw Cr.-18	Armiger-10A	8	27	35	N
1997	M	Castle Cr.-15	Armiger-10A	8	21	29	N
	M	Rice Cr.-13	Panhandle Reg.	10	24	34	N
	M	Nora Cr.-8A	Panhandle Reg.	10	33	43	N
	M	Billy Cr.-11	Crow Bench-10A	10	27	37	N
	M	Ctnwood Cr.-11	Big Bear Cr.-8	8	27	35	N
	M	Dough Cr.-11	Armiger-10A	6	19	25	N
	M	Blanco Cr.-15	Mnt. Idaho-15	10	13	23	S
	M	MF Payette-33	Packard-8	6	24	30	N
	M	Papoose Cr.-18	Lathrop-10A	6	29	35	N
	M	Allison Ranch-20	Mt. Idaho-15	5	20	25	N
1998	M	Allison Cr.-14	Duman-11	5	9	14	S
	M	Little Weiser-32W	Duman-11	6	11	17	S
	M	California	Duman, et al-11	6	26	32	NA
	M	Schwartz Cr.-15	Bott Ranch-10A	3	21	24	N
	M	Rapid River-23	Busta-10A	12	28	40	N
	M	California	Bott Ranch-10A	3	24	27	NA

Table 10. Annual coo count routes and estimated mourning dove harvest in the Clearwater Region obtained from the telephone survey of hunters, 1989-1999.

Year	Bag/ Possession Limits	Coo Count Routes			Telephone Survey		
		Routes	# Doves Heard Per Mile	Hunters	Birds	Total Hunter Days	Birds per Hunter Day
1989	10/20	2	0.2	220	758	341	2.2
1990	10/20	1 ^a	0.3	110	863	108	8.0
1991	10/20	2	0.1	324	3,971	1,098	3.6
1992	10/20	2	0.1	156	1,151	152	7.6
1993	10/20	2	0.2	773	3,587	3,123	1.1
1994	10/20	2	0.3	1,161	8,765	3,989	2.2
1995	10/20	2	0.1	792	4,062	3,229	1.3
1996 ^b	10/20	2	0.02	ND	ND	ND	ND
1997 ^b	10/20	2	0.15	ND	ND	ND	ND
1998 ^b	10/20	2	0.30	ND	ND	ND	ND
1999 ^b	10/20	2	0.15	ND	ND	ND	ND

^a Route 0730 not surveyed.

^b Route 1150 not surveyed.

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Upland Game Surveys and</u>
PROJECT:	<u>W-170-R-23</u>		<u>Inventories</u>
SUBPROJECT:	<u>3</u>	STUDY NAME:	<u>Upland Game and</u>
STUDY:	<u>II</u>		<u>Waterfowl Population</u>
JOB:	<u>1</u>		<u>Status and Trends</u>

PERIOD COVERED: April 1, 1998 to March 31, 1999

UPLAND GAME - SOUTHWEST REGION

PHEASANT

Population Surveys

No winter sex ratio counts were conducted during December 1998 and January 1999.

The average young per brood in 1998, based on brood routes, was 4.8 young/brood. The average young per brood (4.8) was the same as the 1997 figure (4.8) and less than the previous 5-year average of 5.7. The 0.6 birds observed per mile was higher than the 1997 figure but less than the 5-year average (0.7 birds per mile) (Table 1).

Harvest Characteristics

Telephone Survey

There are no regional harvest estimates for 1998. From 1991 to 1995 hunter numbers averaged 16,000 and the harvest averaged 67,300 birds for the Southwest Region (Table 2).

Check Stations

Two check stations are currently operated in the Southwest Region to monitor pheasant hunting success. They are located at Star and Freezeout Hill. Total hunters checked decreased from 258 in 1997 to 193 in 1998. The number of birds checked decreased from 1997. Birds per hunter day increased to 0.6 and the hours per bird decreased to 5.3 (Table 2).

Prior to 1987 and starting again in 1993, young:adult ratios were determined from spur appearance; from 1987-1992, ages were determined by the shaft diameter method. The

spur method indicates that the young:adult ratio (190 young:100 adult) is an increase from 1997 (180 young:100 adult) and earlier years' values.

Climatic Conditions

The 1998 spring weather conditions were cold and wet.

Habitat Conditions

Long-term population trends are down, primarily due to major changes in farming practices. In Canyon and Owyhee Counties farmers are no longer raising high-moisture corn that is normally harvested in late fall. Fall plowing of all fields has become the normal operating procedure, thereby limiting winter food and cover for pheasants in these counties. These practices have not become common in Gem County, which has the highest densities of fall pheasants. If this trend in farming practices continues, we can expect further reductions in long-term populations.

Depredations

Pheasant depredations occur every spring on wheat, barley, and corn. Sweet corn is the major problem. Cracker shells and M99s are given out and generally handle the problem.

Release Pen-reared

Adult roosters purchased from a contractor were released on Department lands in the Southwest Region. A total of 3,200 pheasants were released on Fort Boise Wildlife Management Area (WMA), C. J. Strike WMA, Payette River WMA, and Montour WRA during the season. These birds added significantly to hunter opportunity on these four heavily-hunted public management areas.

Management Implications

Pheasant populations are largely dependent upon winter habitats, nesting habitats, and spring weather conditions during nesting and brood-rearing time. Weather conditions will have a larger influence on the pheasant population while the habitat remains low quality. Habitat quality and quantity needs to be improved to moderate the effect of weather conditions. Uncontrollable weather factors will be the major influence on recruitment of birds into the fall populations until habitat conditions improve.

The Southwest Region has seen significant decreases in the wintering habitat due to changes in farming practices. The probability that populations will decrease is high, since any added mortality factors will cause further declines in pheasant numbers.

Abstract

Pheasant populations continue to decline with the loss of habitat. Associated with the decline in pheasant population, the number of hunters and harvest is down.

QUAIL

BOBWHITE AND CALIFORNIA QUAIL

Population Surveys

No brood surveys were run during 1998.

Harvest Characteristics

Telephone Survey

There are no regional harvest estimates for 1998. From 1991 to 1995 approximately 7,000 hunters harvested about 70,000 quail (Table 3).

Check Stations

A few birds are checked incidental to other activities.

Climatic Conditions

See Pheasant Section.

Management Implications

California quail populations are fairly stable over the long term but experience short-term population fluctuations, depending upon the severity of winter weather and the amount of cold, wet weather during the nesting season. Populations are currently in good condition.

Abstract

Quail populations are at a stable level at present in the Southwest Region. The harvest has remained stable over the last several years.

FOREST GROUSE

Population Surveys

Drumming counts or other spring population indices were not conducted in the region.

Harvest Characteristics

Telephone Survey

There are no regional harvest estimates for 1998. From 1991 to 1995 the forest grouse harvest averaged 44,000 birds taken by 6,000 hunters (Table 5).

Check Stations

No management check stations or wing barrels were operated to check forest grouse hunters (Table 4).

Climatic Conditions

See Pheasant Section.

Management Implications

Forest grouse populations are dependent on good nesting and brood-rearing conditions. There is concern that insect damage to evergreen species may have a negative impact on blue grouse populations. Our goals, as listed in the species management plan, are to increase hunter opportunity and harvest. Seasons have been extended at the beginning and the end of the seasons, which should increase the total harvest by a small amount. We have emphasized good forest grouse habitat management procedures to the Bureau of Land Management (BLM) and the US Forest Service when reviewing timber sales and livestock management plans.

Abstract

Harvest and hunters have been highly variable during the last five years.

SAGE GROUSE

Population Surveys

No sage grouse brood routes were conducted in the Southwest Region in 1998.

Harvest Characteristics

Telephone Survey

There are no regional harvest estimates for 1998. From 1991 to 1995 the sage grouse harvest averaged 2,200 sage grouse by 4,300 hunters (Table 6).

Check Stations

Check stations were operated opening day at Bruneau during the 1998 season. The total number of birds checked was down (23 in 1998 and 34 in 1997). There was an increase in the number of birds per hunter and a decrease in the hours of effort required to harvest a bird.

Sage grouse wings were collected for age analysis at check stations and wing barrels (Table 7).

Climatic Conditions

See Pheasant Section.

Management Implications

Sage grouse populations are largely dependent upon spring weather conditions during nesting and brood rearing. Recruitment of birds into the fall populations will be governed by uncontrollable weather factors until habitat quality and quantity is improved to moderate the effect of weather conditions.

Regional personnel have worked closely with the BLM to reduce impacts of present and proposed land management practices on sage grouse habitat. We have reviewed all major projects on sage grouse habitat and have encouraged the BLM to use the Sage Grouse Habitat Management Guidelines in their planning process.

Abstract

All survey information indicates that sage grouse populations are stable.

SHARP-TAILED GROUSE

Population Surveys

No sharptail dancing grounds or broods routes were censused by regional personnel in 1998.

Trends in sharptail populations are unknown in the Southwest Region. Washington County dancing grounds are monitored by BLM personnel and indicate a stable number of birds attending leks in recent years.

Climatic Condition

See Pheasant Section.

Habitat Conditions

Due to habitat loss, sharp-tailed grouse populations in the Southwest Region have been reduced to remnant flocks in Washington, Adams, and Payette Counties. Research on sharptail distribution, habitat use, and population size in Washington County was completed by the Department and the BLM in 1985.

Management Implications

The Southwest Region has encouraged land management agencies to protect sharptail habitat when planning land management activities. In addition, the region has entered into a cooperative agreement with the BLM and The Nature Conservancy to manage sharptail populations and habitat in Washington County. An area of critical habitat for sharptails comprised of approximately 7,000 acres of BLM and The Nature Conservancy lands will be managed for sharptail grouse by the cooperators.

The Department will provide increased enforcement patrols and take over monitoring of sharptail dancing grounds on the Hixon Sharp-tailed Grouse Preserve, and additional leks in other portions of the region will be surveyed for possible inclusion into the monitoring program.

Populations are far below long-term levels due to habitat losses. The sharp-tailed grouse have increased because of Conservation Reserve Program improvements to habitat and good climatic conditions. It is not likely that populations will reach harvestable levels during this planning period.

Abstract

Sharp-tailed grouse populations are remaining stable, but are in a very threatened position. Significant increases in occupied habitat need to be accomplished before these populations will be safe.

CHUKAR PARTRIDGE

Population Surveys

Helicopter aerial surveys have been conducted in late August or early September along a portion of Brownlee and Lucky Peak Reservoir since 1984 to monitor chukar population trends (Table 9). A survey area on the Bruneau River was conducted for one year in 1997. The number of birds observed during the 1998 survey was 48% more than 1997 on Brownlee Reservoir. The count is above the 10-year average. The survey on Lucky Peak was 38% less than the 1997 survey, but above the 10-year average.

Harvest Characteristics

Telephone Survey

There are no regional harvest estimates for 1998. From 1991 to 1995 the chukar harvest averaged 50,000 by 8,000 hunters (Table 9).

Check Stations

Opening-day check station results from the Owyhee County area included checking 4 chukar hunters that harvested no birds.

Climatic Conditions

See Pheasant Section.

Management Implications

Chukar populations are largely dependent upon spring weather conditions during nesting and brood rearing. Recruitment of birds into the fall populations will be governed by uncontrollable weather factors until habitat quantity and quality is improved to moderate the effect of weather conditions.

Abstract

The chukar population is below its historic highs, but good populations still exist. Habitat needs to be improved and the amount of high quality habitat needs to be increased.

GRAY PARTRIDGE

Population Surveys

No trend surveys are conducted for gray partridge in the Southwest Region.

Harvest Characteristics

Telephone Survey

There are no regional harvest estimates for 1998. From 1991 to 1995 the gray partridge harvest averaged 11,000 birds by 5,000 hunters (Table 11).

Check Stations

A few birds are checked incidental to other activities.

Climatic Conditions

See Pheasant Section.

Management Implications

Gray partridge populations are largely dependent upon spring weather conditions during nesting and brood rearing. Recruitment of birds into the fall populations will be governed by uncontrollable weather factors until habitat quantity and quality is improved to moderate the effect of weather conditions.

Abstract

The gray partridge population is well below its historic highs, but the basic core population is still present. The habitat needs to be improved and the amount of high quality habitat needs to be increased.

WILD TURKEY

Population Surveys

No trend surveys are in place to monitor turkey populations (Merriam's or Rio Grande).

Harvest Characteristics

Telephone Survey

One controlled hunt was held for turkey in the Southwest Region in 1998. The general harvest estimates showed increases in 1998 (Table 13).

Check Stations

No check stations are run during the turkey season.

Climatic Conditions

The winter of 1998-1999 was about average. There were several periods of extended snow cover which negatively impacted the turkeys.

Trapping and Transplanting

A total of 58 Merriam's and 50 Rio Grande turkeys were trapped and moved within the Southwest Region in the winter of 1998-99. The released Rio Grande turkeys were from California; 41 of the Merriam's turkeys were shipped for release in California. The results of these efforts are summarized in Table 13.

Management Implications

Regional personnel have supported enhancement of turkey habitat by plantings of food plots specifically for wild turkey on Forest Service lands; by input into land use plans on the importance of turkey habitat; and by habitat improvement projects on Department-owned lands.

Turkey depredation complaints were received from several subdivisions near Boise. The increasing turkey populations are damaging gardens, power lines, and specialty crops, and fouling wintering concentration areas. A combination of trapping and transplanting plus attracting to new feeding areas has helped alleviate some of the problems.

Abstract

Wild turkey numbers continue to increase in the Southwest Region.

MOURNING DOVE

Harvest Characteristics

Telephone Survey

There are no regional harvest estimates for 1998. From 1991 to 1995, the dove harvest averaged 46,000 birds by 4,500 hunters (Table 14).

Climatic Conditions

The 1998 spring weather conditions appeared favorable for nesting.

RABBITS AND HARES

Population Surveys

No surveys or other efforts are made to estimate rabbit and hare populations in the Southwest Region.

Harvest Characteristics

Telephone Survey

There are no regional harvest estimates for 1998.

Check Stations

No check stations were run to obtain information on rabbit and hare harvest.

Climatic Conditions

The 1998 spring weather conditions appeared favorable for production of rabbits and hares.

Management Implications

Hunting has little, if any, effect on populations. Seasons have been set with liberal bag limits and season lengths. No active data collection programs exist for rabbit or hare production or population estimates.

The harvest of rabbits and hares is very small and has no impact on the populations.

CROWS

Population Surveys

No surveys are run for crows.

Climatic Conditions

The 1998 spring weather conditions appeared to have no adverse effect on nesting.

Management Implications

This species receives no active management.

Table 1. Pheasant population characteristics and production in Southwest Region, 1980-1998.

Year	Winter Sex Ratio ^a	Brood Routes						Average Brood Size
		N ^b	Routes/ Miles Counted	Birds Per Mile	Percent Unsucc. Females	Juv.:100 Adult Females	N ^b	
1980	2.5	3,563	404	3.6	3	481	1,483	0.5
1981	2.1	4,172	402	4.4	7	427	1,799	5.4
1982	3.0	11,971	430	2.1	134	304	905	4.4
1983	2.5	3,564	298	3.1	15	383	941	4.6
1984	2.3	7,622	310	1.8	17	437	555	4.5
1985	2.0	3,217	278	2.8	16	653	784	7.7
1986	2.5	2,814	176	3.2	10	475	570	5.3
1987	3.2	2,426	178	2.7	13	415	446	4.8
1988	2.8	1,661	161	2.0	12	414	315	4.5
1989	ND	ND	176	2.0	2	497	414	4.9
1990	2.7	1,147	192	2.5	8	516	485	5.2
1991	ND	ND	600	0.7	34	505	397	4.0
1992	ND	ND	660	0.9	29	527	610	5.3
1993	ND	ND	580	0.3	39	611	200	6.1
1994	ND	ND	580	1.6	24	481	959	6.9
1995	ND	ND	480	0.5	40	398	246	4.5
1996	ND	ND	260	0.8	17	624	215	6.2
1997	ND	ND	660	0.4	25	360	290	4.8
1998	ND	ND	640	0.6	25	358	371	4.8

^a Hens per cock.

^b Sample size.

Table 2. Pheasant hunter killing and harvest in Southwest Region obtained from check stations and the telephone survey, 1980-1998.

Year	Check Station				Phone Survey		
	Hunters	Birds	Birds/ Hunter	Hours/ Bird	Hunters	Birds	Birds/ Day
1980	2,457	2,239	0.9	3.7	--	--	--
1981	2,7516	2,054	0.8	4.1	--	--	--
1982	1,860	1,147	0.6	5.5	--	--	--
1983	2,054	1,963	1.0	3.5	31,946	155,604	0.9
1984	1,723	1,342	0.8	4.6	28,979	132,487	0.8
1985	1,324	1,051	0.8	4.0	27,231	142,867	0.8
1986	1,718	1,412	0.8	4.1	25,218	119,326	0.8
1987	1,696	1,143	0.7	5.6	23,047	103,728	0.8
1988	1,245	569	0.5	7.0	17,016	64,302	0.7
1989	845	515	0.6	5.1	15,983	64,059	0.7
1990	962	739	0.8	4.2	16,309	74,302	0.7
1991	880	546	0.6	5.3	16,073	61,248	0.6
1992	693	488	0.7	4.5	15,800	68,600	0.7
1993	250	114	0.4	7.0	15,700	68,200	0.6
1994	198	128	0.6	4.7	12,600	57,100	0.7
1995	293	576	0.6	3.1	16,000	70,300	0.6
1996	156	471	0.7	4.5	--	--	--
1997	258	109	0.4	8.1	--	--	--
1998	143	86	0.6	5.3	--	--	--

Table 3. Quail population trends and harvest in Southwest Region, 1985-1998^a.

Year	Brood Routes		Telephone Survey		
	Routes/Miles Counted	Birds/Mile	Hunters	Birds	Birds/ Hunter Days
1985			4,854	37,776	1.2
1986			4,123	26,234	1.5
1987			3,677	27,476	1.2
1988			4,536	43,549	1.6
1989			4,523	47,418	1.8
1990			4,857	46,097	1.9
1991	600	1.5	5,478	58,352	1.7
1992	620	0.6	5,400	71,100	2.1
1993	580	0.3	10,400	86,100	1.3
1994	560	1.2	8,500	86,500	1.7
1995	480	0.9	11,500	143,800	1.8
1996	260	2.2	--	--	--
1997	660	1.0	--	--	--
1998	640	1.0	--	--	--

^a Almost entirely California quail.

Table 4. Forest grouse production in Southwest Region based on wing collection, 1988-1998.

Year	Blue Grouse				Ruffed Grouse	
	N	Juv.:100 Adult Females	Juv.:100 Adults	Percent Unsucc. Females	N	Juv.:100 Adults
1988		52	120	ND	36	100
1989		61	239	ND	34	105
1990		126	107	ND	24	60
1991		106	74	ND	16	300
1992		ND	ND	ND	ND	ND
1993		ND	ND	ND	ND	ND
1994		ND	ND	ND	ND	ND
1995		ND	ND	ND	ND	ND
1996		ND	ND	ND	ND	ND
3-Yr Mean		ND	ND	ND	ND	ND
Change from last year		ND	ND	ND	ND	ND
Change from prev. 3-yr avg.		ND	ND	ND	ND	ND

Table 5. Forest grouse hunter success in Southwest Region obtained from the telephone survey, 1985-1995.

Year	Hunters	Birds	Birds/Day
1985	3,524	12,441	0.8
1986	3,641	17,049	1.2
1987	4,145	18,406	1.1
1988	4,207	18,843	0.9
1989	4,846	25,699	1.0
1990	2,637	10,605	1.1
1991	2,365	10,636	1.0
1992	5,100	17,800	0.9
1993	10,400	30,100	2.9
1994	9,000	31,700	0.6
1995	13,500	43,800	0.6

Table 6. Sage grouse hunter success and harvest in Southwest Region obtained from check stations and the telephone survey, 1980-1998.

Year	Bag and Possession Limit	Check Station				Telephone Survey		
		Hunters	Birds	Birds Per Hunter Day ^a	Hours Per Bird	Hunters	Birds	Birds Per Hunter Day
1980	2/2	505	441	0.9	6.7	--	--	--
1981	2/2	464	606	1.3	3.5	--	--	--
1982	2/2	359	236	0.6	9.2	--	--	--
1983	1/1	108	37	0.3	14.9	2,912	2,713	0.4
1984	1/1	47	31	0.7	5.2	504	901	0.6
1985	2/2	161	110	0.7	6.5	1,319	2,718	0.6
1986	2/4	245	330	1.3	4.3	608	1,253	0.6
1987	2/4	219	315	1.1	4.9	837	1,567	1.1
1988	2/4	329	284	0.9	5.7	1,830	4,532	0.7
1989	2/4	228	222	1.0	5.4	1,035	2,049	1.1
1990 ^b	3/6	476	883	1.9	3.3	1,217	4,320	1.5
1991	3/6	476	498	1.1	5.3	1,584	4,292	0.6
1992	3/6	599	412	0.7	7.7	1,500	4,200	0.7
1993 ^c	3/6	74	58	0.8	6.3	3,200	11,100	1.9
1994 ^c	3/6	99	109	1.1	3.8	3,400	6,400	0.6
1995 ^c	3/6	71	62	0.9	4.2	4,300	6,700	0.5
1996 ^c	2/4 ^d	44	29	0.7	6.0	--	--	--
1997 ^c	2/4 ^d	34	36	1.0	3.7	--	--	--
1998 ^c	2/4 ^d	23	23	1.0	3.8	--	--	--

^a Total birds checked over total hunters.

^b Walters Ferry and Bruneau check station open on weekends.

^c Bruneau check station open on opening day only.

^d Part of area was a 1/2 sage grouse bag/possession limit.

Table 7. Sage grouse production in Southwest Region based on wing collections, 1980-1998.

Year	Juv.:100 Females	Juv.:100 Adults	Percent Unsuccessful Females
1980	106	62	65
1981	111	61	26
1982	83	57	59
1983	332	225	33
1984	145	111	40
1985	150	101	48
1986	195	133	29
1987	198	124	29
1988	165	109	35
1989	277	163	26
1990	211	153	20
1991	108	66	78
1992	83	56	84
1993	197	129	53
1994	277	207	69
1995	145	98	46
1996	185	107	51
1997	123	78	54
1998	130	101	75
Previous 5-yr mean	185	124	55
Change from last year	6%	29%	39%
Change from previous 5-yr average	-30%	-19%	36%

Table 8. Chukar aerial survey results along Brownlee Reservoir in the Southwest Region. The survey area is 12 square miles. The surveys are conducted in a Hiller 12E helicopter.

Year	Chukars Observed	Chukar Groups	Groups per Square Mile	Chukars per Square Mile	Chukars per Group
1984	597	45	3.8	49.8	13.3
1985	872	62	5.2	72.7	14.1
1986	1686	94	7.8	140.5	17.9
1987	2,652	115	9.6	221.0	23.1
1988	No Counts				
1989	643	57	4.8	54.1	11.4
1990	1,313	77	6.4	109.4	17.1
1991	1,621	103	8.6	135.1	15.7
1992	930	89	7.4	77.5	10.5
1993	211	24	2.0	17.6	8.8
1994	1,056	65	5.4	88.0	16.2
1995	952	88	7.3	79.3	10.8
1996	949	90	7.5	79.1	10.5
1997	881	79	6.6	73.4	11.2
1998	1,131	125	10.4	109.3	10.5

10-year average is 93 chukars per square mile. 1998 is a 17% increase over average and a 48% increase from 1997.

Table 9. Chukar aerial survey results on Lucky Peak Reservoir in the Southwest Region. The survey area is 10 square miles. The surveys are conducted in a Hiller 12E helicopter.

Year	Chukars Observed	Chukar Groups	Groups per Square Mile	Chukars per Square Mile	Chukars per Group
1984	84	10	1.1	7.6	8.4
1985	132	10	1.2	11.0	13.2
1986	144	15	1.0	9.6	9.6
1987	409	33	3.3	40.9	12.4
1988	No Counts				
1989	No Counts				
1990	No Counts				
1991	115	18	1.1	7.2	6.4
1992	No Counts				
1993	84	10	1.2	7.1	7.4
1994	190	13	1.5	19.0	14.6
1995	212	18	1.8	21.2	11.8
1996	No Counts				
1997	314	29	2.9	31.4	10.8
1998	193	26	2.6	19.3	7.4

10-year average is 19 chukars per square mile. 1998 is 11% over the average but a 38% decrease from 1997.

Table 10. Chukar aerial survey results on the lower Bruneau River in the Southwest Region. The survey area is 10 square miles. The surveys are conducted in a Hiller 12E helicopter.

Year	Chukars Observed	Chukar Groups	Groups per Square Mile	Chukars per Square Mile	Chukars per Group
1997	196	23	2.3	19.6	8.5
1998	No Counts				

Table 11. Chukar hunter success and harvest in Southwest Region obtained from check stations and the telephone survey, 1985-1998.

Year	Bag and Possession Limit	Check Station				Telephone Survey		
		Hunters	Birds	Birds Per Hunter Day ^a	Hours Per Bird	Hunters	Birds	Birds Per Hunter Day
1985	5/10	354	177	0.50	9.2	3,987	14,895	0.7
1986	8/16	402	238	1.18	6.3	6,505	46,299	1.9
1987	8/16	327	164	0.51	4.5	7,995	70,379	1.6
1988	8/16	316	168	0.53	11.5	6,957	49,687	1.7
1989	8/16	170	121	0.71	6.9	5,937	42,003	1.4
1990 ^b	8/16	257	420	1.60	2.4	5,793	49,954	1.9
1991	8/16	164	111	0.70	6.6	7,150	52,750	1.6
1992	8/16	136	72	0.05	10.0	6,300	28,900	1.1
1993	8/16	5	2	0.4	7.5	8,500	48,100	5.1
1994	8/16	14	17	1.2	4.6	7,500	59,400	1.6
1995	8/16	7	9	1.3	2.9	10,700	96,700	1.5
1996	8/16	24	15	2.1	2.0	--	--	--
1997	8/16	9	15	1.7	2.4	--	--	--
1998	8/16	4	0	0	--	--	--	--

^a Total birds checked over total hunter days.

^b Opening weekend harvest data only.

Table 12. Gray partridge production on routes and hunter success from the telephone survey in Southwest Region, 1985-1998.

Year	Routes/Miles Counted	Production			Telephone Survey		
		Birds Per Mile	N (Birds Counted)	Average Brood Size	Hunters	Birds	Birds Per Hunter Day
1985					1,508	5,566	0.8
1986					1,610	6,645	0.7
1987					2,165	10,906	0.7
1988					1,809	11,951	1.1
1989					946	2,062	0.6
1990					1,835	9,648	1.0
1991	600	0.1	70	ND	2,478	12,804	0.9
1992	660	0.1	55	ND	1,800	6,600	0.9
1993	580	0.1	29	ND	4,900	12,700	2.6
1994	560	0.1	20	ND	4,300	11,000	0.4
1995	580	0.1	43	ND	5,800	19,100	0.6
1996	260	0.1	9	ND	--	--	--
1997	660	0.1	67	ND	--	--	--
1998	640	0.1	42	ND	--	--	--

Table 13. Turkey harvest in Southwest Region, 1985-1998.

Hunt	Number of Hunts	Permits Available	Hunters	Birds Taken	Days Per Bird	Total Days Hunted
1985						
Controlled	4	20	20	7	7	51
General			158	18	22	404
1986						
Controlled	6	30	30	12	ND	ND
General			228	58	12	700
1987						
Controlled	6	30	30	12	7	85
General			352	78	14	1,119
1988						
Controlled	4	22	22	ND	ND	ND
General			518	72	24	1,757
1989						
Controlled	4	22	22	7	ND	ND
General			280	39	27	1,079
1990						
Controlled	2	10	9	0		42
General			270	33		838
1991						
Controlled	2	10	9	4	ND	28
General			596	61	26	1,587
1992						
Controlled	None					
General			736	93	24	2,200
1993						
Controlled	None					
General			1,491	235	20	4,784
1994						
Controlled	None					
General			1,730	269	20	5,396
1995						
Controlled	None					
General			2,671	385	22	8,428

Table 13. Turkey harvest in Southwest Region, 1985-1998 (Continued).

Hunt	Number of Hunts	Permits Available	Hunters	Birds Taken	Days Per Bird	Total Days Hunted
1996						
Controlled	1	15	13	10	9	92
General			2,682	494	19	9,397
1997						
Controlled	1	15	10	8	12	92
General			3,064	610	13	8,164
1998						
Controlled	1	30	24	11	10	114
General			3,420	700	14	10,100

Table 14. Turkey transplant history for Southwest Region, 1966-1999.

Year	Subspecies ^a	Release Site	Number Birds Released	New or Supplemental Release
1966	M	SF Boise River (Unit 39)	12	New
1967	M	Wildhorse River (Unit 22)	19	New
1970	M	Payette River-Banks (Unit 32)	14	New
1979	M	Pine Creek (Unit 31)	5	New
1982	R	Fort Boise WMA (Unit 38)	24	New
1982	M	SF Salmon River (Unit 25)	18	New
1982	M	Payette River-Banks (Unit 32)	15	Supplemental
1982	M	Hornet Creek (Unit 22)	4	Supplemental
1982	M	Fruitvale (Unit 22)	1	Supplemental
1982	R	Kennedy WMA (Unit 38)	16	New
1982	R	Goodrich Creek (Unit 22)	19	New
1983	M	SF Boise River (Unit 39)	15	Supplemental
1983	M	MF Boise River (Unit 39)	15	New
1983	M	Cottonwood Creek (Unit 39)	14	New
1984	R	Boulder Creek (Unit 40)	27	New
1985	R	Boulder Creek (Unit 40)	2	Supplemental
1986	M	Dead Dog Creek (Unit 39)	17	New
1986	R	C. J. Strike WMA (Unit 40)	14	New
1987	M	Porter Creek (Unit 39)	10	New
1987	M	Harris Creek (Unit 39)	10	New
1988	M	Harris Creek (Unit 39)	10	Supplemental
1988	M	Porter Creek (Unit 39)	7	Supplemental
1988	M	Eagleson Summit (Unit 39)	11	New
1989	R	Boise River-Caldwell (Unit 38)	14	New
1990	M	Cottonwood Creek (Unit 31)	25	New
1990	M	Dukes Creek (Unit 22)	28	New

Table 14. Turkey transplant history for Southwest Region, 1966-1999 (Continued).

Year	Subspecies ^a	Release Site	Number Birds Released	New or Supplemental Release
1990	M	Indian Creek (Unit 22)	28	New
1990	M	WF Brownlee Creek (Unit 31)	28	New
1990	M	Hornet Creek (Unit 22)	13	Supplemental
1990	M	Stack Rock (Unit 39)	20	New
1993	M	Robie Creek (Unit 39)	22	Supplemental
1993	M	Thorn Creek (Unit 39)	24	New
1993	M	Wilderness Ranch (Unit 39)	29	Supplemental
1993	M	Corral Creek (Unit 39)	25	New
1993	M	Ola (Unit 32A)	22	New
1993	M	Squaw Creek (Unit 32A)	46	New
1993	M	Sturgill Creek (Unit 31)	37	New
1993	R	Payette River (Unit 32)	5	Supplemental
1993	R	Boise River (Unit 38)	26	New
1993	R	Boise River (Unit 38)	27	New
1994	R	Boise River (Unit 38)	24	New
1994	R	Boise River (Unit 38)	29	New
1994	M	Ola (Unit 32)	22	Supplemental
1994	M	Squaw Creek (Unit 32)	24	Supplemental
1995	M	Alder Creek (Unit 33)	27	New
1995	M	MF Payette River (Unit 33)	30	New
1996	R	Payette River WMA (Unit 38)	20	New
1997	R	Payette River WMA (Unit 32)	18	New
1997	R	Payette River WMA (Unit 32)	17	New
1997	M	Bunch Creek (Unit 33)	18	New
1997	M	MF Payette River (Unit 33)	33	Supplemental
1997	M	Keithly Creek (Unit 31)	27	New
1997	M	Dennett Creek (Unit 33)	27	New
1998	M	Little Weiser River (Unit 32)	17	New
1998	M	Mann Creek (Unit 31)	19	Supplemental
1998	M	SF Boise River (Unit 39)	17	Supplemental
1998	R	Payette River WMA (Unit 32)	17	New
1998	R	Payette River WMA (Unit 32)	20	Supplemental
1999	R	Letha (Unit 32)	24	New
1999	R	Payette River (Unit 32)	26	New
1999	M	SF Boise River (Unit 39)	17	Supplemental

^a E - Eastern; M - Merriam's; R - Rio Grande.

Table 15. Mourning dove population trends and harvest in Southwest Region, 1985-1998.

Year	Brood Routes		Telephone Survey		
	Routes/Miles Counted	Birds/Mile	Hunters	Birds	Birds/ Hunter Days
1985			4,326	44,746	2.6
1986			3,226	29,434	2.3
1987			2,635	26,675	2.5
1988			1,878	19,390	2.1
1989			2,490	19,295	2.0
1990			2,578	30,910	3.1
1991	600	4.5	2,410	25,733	2.4
1992	660	1.5	3,200	29,900	2.0
1993	580	0.3	7,100	73,200	2.1
1994	560	4.6	6,100	70,700	2.4
1995	480	2.2	7,200	66,100	2.3
1996	260	2.3	--	--	--
1997	660	2.2	--	--	--
1998	640	1.6	--	--	--

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Upland Game Surveys and</u>
PROJECT:	<u>W-170-R-23</u>		<u>Inventories</u>
SUBPROJECT:	<u>4</u>	STUDY NAME:	<u>Upland Game and</u>
STUDY:	<u>II</u>		<u>Waterfowl Population</u>
JOB:	<u>1</u>		<u>Status and Trends</u>

PERIOD COVERED: April 1, 1998 to March 31, 1999

UPLAND GAME - MAGIC VALLEY REGION

PHEASANT

Abstract

Poor nesting success resulted in low pheasant densities throughout the Magic Valley Region, although pheasant numbers increased slightly in Minidoka and Cassia Counties where late May rains delayed the first alfalfa harvest. On August roadside surveys, 0.19 birds per mile (BPM) were observed, similar to 1997 but well below the 10-year mean of 0.33 BPM. Harvest data for the 1998 season is unavailable for the region. In the long term, pheasant populations are expected to remain low given current farming practices. Occasional short-term increases will occur during years when the first alfalfa harvest is delayed by rain allowing increased nesting success.

Population Surveys

Brood Routes

August roadside surveys are used to monitor pheasant population trends and forecast hunting seasons. Although some roadside routes have been conducted in the Magic Valley Region since 1976, the survey was expanded in 1990 to include 28 routes. The number of pheasants observed per mile (BPM) is strongly and significantly correlated ($r=0.90$, $df=19$, $P<0.001$) with harvest estimated from the telephone survey.

The 1998 BPM index of 0.19 was up slightly from 1997 but was well below the 1988-97 mean of 0.33. In Jerome, Gooding, and Elmore Counties, alfalfa harvest in mid- to late May proceeded on schedule. Most alfalfa fields had already been swathed prior to the precipitation that occurred in late May, resulting in poor success on first nesting attempts. In Minidoka and Cassia Counties, where alfalfa harvest typically begins a little later, rains delayed the first cutting until early June, providing conditions for improved nesting success.

Roadside survey data typically reflect higher pheasant densities in the western portion of the Magic Valley Region than the eastern portion. In Jerome, west Twin Falls, and west Lincoln, Gooding, and Elmore Counties, 0.19 BPM were observed in 1998 compared to 0.13 in 1997 and 0.57 BPM in 1996. On the east side of the region in Minidoka, Cassia, east Twin Falls, and east Lincoln Counties, the 1998 BPM index was 0.20; up from the 0.09 BPM in 1997 (Table 1).

October Age Ratios

No data were collected.

Hatching Chronology

No wings were collected from hunter harvested pheasants in 1998 to allow estimation of hatching chronology. Since 1971 the estimated hatching peak has varied from late May to late June, depending primarily on the influence of hay harvesting activities. In most years the estimated peak occurred during the second week of June.

Winter Sex Ratios

No winter sex ratio data were collected during the 1998-1999 reporting period. The average ratio of hens to cocks observed during winter has increased from 3.1 hens/cock in 1975-1984 to 2.1 hens/cock in 1985-1996, reflecting the decrease in pheasant hunting pressure in recent years (Table 1).

Harvest Characteristics

Telephone Survey

No data are available (Table 2).

Check Stations

The check station traditionally operated at Bellevue was discontinued in 1998 (Table 2).

Research

Pheasant research has been ongoing in Gooding County since 1990-91. Data collected from 1991-1996 are being analyzed by graduate students Tom Maeder and Gary Nohrenberg. Since 1997 the pheasant research effort has continued under the supervision of Walt Bodie. Regional involvement in the research included 1) rooster crowing territory mapping, 2) August roadside surveys, and 3) assistance with pheasant trapping.

Management Implications

Pheasant populations in the Magic Valley declined dramatically during the early to mid-1980s following a series of severe winters. Pheasant numbers have remained depressed because of a shortage of winter habitat and lack of undisturbed nesting cover. Current farming practices are not compatible with supporting the higher density of pheasants that occurred in the Magic Valley during the 1950s and 1960s. The widespread use of sprinkler irrigation has resulted in larger field sizes, less linear habitat (fence rows and ditches), and fewer uncultivated weedy areas, reducing the quality and quantity of winter and nesting habitat. In addition, the number of acres of farmland planted to alfalfa has increased to support the needs of the area's growing dairy industry. The increase in alfalfa acres has had negative effects on pheasants because alfalfa is harvested earlier (late May instead of early June) and more frequently (4-5 cuttings instead of 3) now than it was 15 years ago. The result is that fewer pheasants can nest successfully in alfalfa, which is usually the best nesting cover available.

In the long term, the status of pheasant populations will be closely related to agricultural practices and their effect on habitat. The current trend in intensive clean farming practices is expected to continue and further declines in pheasant habitat quantity and quality will follow. The Magic Valley Region will continue to give priority to habitat improvement (HIP, Pheasant's Forever, BLM/IDFG Cooperative Wildlife Program) in pheasant recovery efforts. Providing adequate nesting habitat is currently viewed as the weak link in our habitat recovery efforts.

QUAIL

Abstract

No population surveys are conducted and no telephone survey harvest data were collected on quail populations. The number of quail harvested per 100 hunters interviewed at check stations declined to low levels in 1997 and 1998 after reaching the highest level ever recorded in 1996.

Population Surveys

Only 7 of the 28 August survey routes sample quail habitat, resulting in poor predictive capabilities from survey data (Table 3).

Harvest Characteristics

Telephone Survey

There are no data available (Table 3).

Check Stations

The index of quail harvested per 100 hunters interviewed at check stations declined to low levels in 1997 and 1998 after reaching the highest level ever recorded in 1996 (Table 4).

Transplants, Special Projects

Thirty-eight California quail, captured in southwestern Idaho, were released at the Cottonwood Wildlife Management Area in January 1996 in an attempt to reestablish a quail population there. No releases have been made since then. A few quail were observed during the 1998-1999 winter at the WMA. Additional quail releases are planned for the future.

Management Implications

California quail in the Magic Valley Region are associated primarily with the Snake River and its tributaries west of U. S. Highway 93. Opportunities to enhance habitat will be pursued through HIP, and through riparian improvement opportunities with BLM, whenever possible. Increased residential development along the Snake River is a serious threat to quail habitat. Increased attention to zoning and development plans may help slow the loss of habitat.

FOREST GROUSE

Abstract

No population surveys were conducted and no telephone survey harvest data are available for 1998. At opening weekend sage grouse check stations, the number of blue grouse checked was below the high level of 1994 but above the long-term mean.

Population Surveys

No surveys were conducted during the 1998-1999 reporting period.

Harvest Characteristics

Telephone Survey

There are no data available (Table 5).

Check Stations

At 1998 sage grouse check stations, no ruffed grouse were checked; however, the number of blue grouse checked reached an all-time high (Table 4).

Management Implications

Blue and ruffed grouse harvest will be monitored at sage grouse and big game check stations. Ruffed grouse drumming routes, established in Unit 54 to monitor status of the introduced grouse population, will be discontinued.

SAGE GROUSE

Abstract

Sage grouse populations increased slightly in the Magic Valley Region during the reporting period. The number of males counted on leks in 1998 increased by 12% from 1997. Despite above average precipitation and cool temperatures during the hatching period in late May 1998, sage grouse production measured from wing collections was good (2.05 young/hen). At opening weekend check stations, harvest increased by 22% from 1997 but was still well below the long-term mean. The declines in sage grouse numbers have resulted from substantial losses of habitat from large range fires and the effects on habitat of successive years of drought during the late 1980s and early 1990s.

Population Surveys

Lek Routes

The Magic Valley Region conducts 13 standardized lek routes annually to monitor sage grouse population trends. In 1998 the number of active leks and attending males increased by 21% and 12%, respectively, from 1997 levels. The number of active leks counted in 1998 was 2% higher than the 1987-1997 mean, while the number of attending males was 12% lower than the long-term mean (Fig. 1).

Wing Data

Sage grouse wings (N=521) were collected at 11 check stations and with wing barrels located at Shoshone Basin, Lilly Grade, and Brown's Bench. Estimated sage grouse production in 1998 was 2.05 young/adult hen, 24% higher than in 1997 and similar to the 1965-1997 mean of 2.06 young/adult hen. Sage grouse production in the Magic Valley Region has been poor (<200 young/adult hen) 9 of the last 14 years (Table 6).

Brood Routes

Sage grouse brood routes are not conducted in the Magic Valley Region.

Harvest Characteristics

Telephone Survey

No telephone survey harvest data were collected for 1998 (Table 7).

Check Stations

Eleven check stations are operated annually during opening weekend. Check station data reflect a reduction in hunter participation, harvest, and hunter success in recent years because of declines in sage grouse populations and the implementation of more restrictive hunting seasons. In 1998 opening weekend harvest increased by 22% from 1997, but was only 27% of the average harvest from 1965-1997 of 1,849 grouse. Hunter success and the effort expended to harvest a grouse both improved substantially in 1998 from 1997. Hunter success of 0.56 birds/hunter in 1998 was lower than the 1965-1997 average of 0.75 birds/hunter, and the effort required to harvest a sage grouse in 1998 (7.21 hours/bird) was similar to the 1965-1997 average (6.62 hours/bird) (Table 7).

Wing Barrels

Wing barrel and check station data from 1990-1995 suggest that 71% of the harvest occurs on opening weekend, 91% of the harvest occurs during the first 9 days of the season, and only 9% of the harvest occurs during the last 21 days of the season.

Climatic, Habitat Conditions

Nesting, Brood Rearing

Despite what appeared to be adverse weather during the hatching period in late May, sage grouse production was good (2.05 young/adult hen). Weather during May 1998 was cooler and wetter than normal in most areas of the Magic Valley. At a National Weather Service Station in Twin Falls, May precipitation was 4.50 inches compared to a long-term mean of 1.26 inches. During the last 10 days of May (during hatching), precipitation occurred on at least 5 of the days and temperatures dropped to the low to mid-30s throughout the region.

Hunting Conditions

Saturday (9/19) was cloudy, cool, and breezy with temperatures from 60 to 65 degrees. Sunday (9/20) was warmer (70-75 degrees) with clear skies and no wind. Sage grouse were generally scattered with no concentrations of birds reported by hunters.

Management Studies

Studies to document seasonal movements and distribution of sage grouse were conducted in the Shoshone Basin, Brown's Bench, and Marsh Springs areas from 1993-1996. Final reports on these projects are in progress.

Management Implications

Sage grouse populations in the region have declined dramatically after reaching high levels in the mid-1980s. Fires have consumed more than a million acres in south-central Idaho during the past decade. Combined with drought conditions, these fires have had catastrophic effects on sage grouse nesting, brood-rearing, and winter habitat. Poor production has occurred in 9 of the last 14 years and is reflected in both lek surveys and harvest data. Reversing the downward trend in sage grouse numbers is contingent on the reestablishment of sagebrush in burned areas. Regional personnel will continue to review and comment on Bureau of Land Management and U.S. Forest Service land treatment projects affecting sage grouse habitat during the reporting period. Implementation of the Idaho Sage Grouse Management Plan will remain a priority in the upcoming year. The Magic Valley Region is currently participating in two local working groups that are addressing sage grouse management issues in the Shoshone Basin and Curlew Valley. It is hoped that local working groups can be established in the Jarbidge and Shoshone BLM Resource Areas.

SHARP-TAILED GROUSE

Abstract

Sharp-tailed grouse populations in the Magic Valley Region remain strong as a result of abundant habitat provided by lands enrolled in the Conservation Reserve Program. Spring 1998 populations, measured by lek surveys, were similar to 1996 and 1997 levels. The translocation program to Shoshone Basin will be continued in 1999.

Population Surveys

Sharp-tailed grouse leks in the Black Pine, Curlew, and Rockland valleys were surveyed on 1 lek route and by trapping personnel. The number of leks associated with Conservation Reserve Program lands continues to be high and the number of males attending leks has been similar during the past 4 years.

Harvest Characteristics

Sharp-tailed grouse harvest in the Magic Valley Region is primarily from Oneida and Power Counties, although an increasing number of grouse are being harvested from eastern Cassia County. Oneida County is the top county in Idaho in terms of sharp-tailed grouse harvest, hunter numbers, and hunter success. Harvest data for 1998 are unavailable.

Transplants, Special Projects

From 1992-1998, 458 Columbian sharp-tailed grouse (264 males, 194 females) were trapped in the Curlew, Rockland, Arbon, Malad, and Pocatello valleys and translocated to the Shoshone Basin area of Twin Falls County (335 birds), and to sites in Wallowa County, Oregon (98 birds) and Okanagan County, Washington (25 birds).

In 1998, 88 grouse were trapped; 63 (32 males, 31 females) were released in Shoshone Basin and 25 (13 males, 12 females) were moved to Washington. In Shoshone Basin, grouse were released on the existing Big Creek and Horse Creek leks.

Prior to releases in early April, the Big Creek lek was attended by 11 males and the Horse Creek lek was attended by 12 males. Male attendance increased during April to 16+ males at Big Creek and 18+ males at Horse Creek. In 1997 as few as 8 and as many as 18 male grouse were observed on the Big Creek lek. The Horse Creek lek was attended by 9 males in 1997. The Big Creek and Horse Creek leks were trapped in late April 1998 to determine the proportions of locally produced and released grouse attending the leks. It was found that roughly half the birds displaying on the leks were locally-produced birds. Birds from releases in 1996, 1997, and 1998 were also found displaying on the leks.

Nineteen hens were radio-monitored from early April to July 11, 1998 to document nesting success. Three of the radioed hens died resulting in an 84% survival rate during this period. Of the 16 surviving hens, 100% nested and 9 (56.2%) had successful nests. Of the 7 unsuccessful nests, 2 were depredated by ravens, 4 losses were attributed to mammalian predators, and 1 nest was lost to disturbance by cattle. Movements from release sites (Big Creek or Horse Creek leks) to nests ranged from 0.37 km to 13.36 km and averaged 5.72 km (SD=3.901). During summer 1997, 12 hens were radio-monitored; 5 died and 4 nested successfully.

Four potential future reintroduction areas in Idaho were evaluated in 1998 including southern Owyhee County, the Camas Prairie southwest of Hill City, the Basin area east of Oakley, and the Rogerson Hills southeast of Rogerson. The Rogerson Hills were found to have the most suitable habitat, followed by the Camas Prairie and Owyhee County. These sites will be considered for sharp-tailed grouse releases in future years. The Department also assisted the Nevada Division of Wildlife with the evaluation of release sites in northern Nevada. The Snake Mountains, 30 miles southwest of Jackpot, Nevada, were selected for reintroduction efforts in 1999.

Management Studies

A Challenge Cost-Share project with BLM to survey parts of eastern Cassia and western Power Counties for leks was completed. Twenty-one new sharp-tailed grouse leks were located. A lek route, incorporating some of the new leks, will be established in 1999 to monitor grouse numbers in Cassia County.

Management Implications

Columbian sharp-tailed grouse numbers are currently strong as a result of the abundant habitat provided by the Conservation Reserve Program. Databases of sharp-tailed grouse leks have been completed in both the Southeast and Magic Valley Regions, which will facilitate the tracking of lek activity and attendance. Current sharp-tailed grouse population levels justify liberal hunting opportunity. The popularity of sharp-tailed grouse hunting has increased in recent years as both resident and nonresident hunters learn about southeast Idaho's healthy bird populations. Results of the grouse reintroduction efforts in Shoshone Basin are encouraging. Monitoring of the new grouse population will continue during the 1999-2000 reporting period.

CHUKAR PARTRIDGE

Abstract

No chukar surveys were conducted in the region; however, hunter success measured at opening weekend sage grouse check stations was high, suggesting strong populations.

Population Surveys

No surveys for chukar populations were conducted in the Magic Valley Region during the 1998-1999 reporting period.

Harvest Characteristics

Telephone Survey

No data are available (Table 8).

Check Stations

Chukar harvest and population trend are monitored at 10 opening weekend check stations. Chukar partridge checked per 100 hunters in 1998 (5.12) was the second highest ever recorded and more than double the 1988-1997 mean of 2.17 (Table 4).

Management Implications

No specific chukar population surveys will be undertaken in the region. Riparian habitat improvement in chukar areas will be encouraged, whenever possible, to benefit populations.

GRAY PARTRIDGE

Abstract

Roadside survey and opening weekend check station data suggested average numbers of gray partridge in intensively farmed areas and higher densities of birds where sagebrush and/or CRP lands were an important part of the habitat.

Population Surveys

Roadside survey data suggest gray partridge numbers declined in 1997 and 1998 after reaching an 11-year high in 1996 (Table 9).

Harvest Characteristics

Telephone Survey

No data are available (Table 9).

Check Stations

Partridge harvest and population trend are monitored on 10 opening weekend check stations. Gray partridge checked per 100 hunters in 1998 (3.41) was higher than the 1988-1997 mean of 2.11 (Table 4).

Management Implications

August roadside surveys and opening weekend check stations will continue to be used to monitor the status of gray partridge populations in the region. In 1998 roadside survey data suggested low numbers of partridge but the number of birds checked on opening weekend was above the long-term average. One possible explanation for the disagreement in these two indices is that roadside routes sample primarily farmland habitats while opening weekend check stations sample sagebrush dominated habitats. Hunters also reported strong partridge populations in the Raft River and Curlew valleys. Weather-related factors have a substantial effect on short-term population fluctuations, but improving habitat remains the key to sustaining healthy populations in the long term. The Magic Valley Region will continue to give priority to habitat enhancement (HIP, Cooperative Wildlife Program, Pheasants Forever) for gray partridge management.

WILD TURKEY

Abstract

Fifty-five Rio Grande turkeys were released at Big Cottonwood WMA in Unit 54 to supplement the existing small population of wild turkeys. The goal is to develop a self-sustaining population of 100-200 turkeys that will support some hunting opportunity.

Population Surveys

There are no wild turkeys remaining in the Niagara Springs (Unit 53) and Almo (Unit 55) areas and no future attempts will be made to establish turkey populations in these areas.

From 1988-1999, 100 Rio Grande turkeys were released at the Big Cottonwood WMA (Table 10). Corn plots have been developed at the WMA to provide a winter food source for the birds. Radio-collared birds have suffered high mortality rates and low nest success. The goal is to develop a self-sustaining population of 100-200 turkeys that will support some hunting opportunity.

Harvest Characteristics

A youth turkey hunt, the first of its kind in Idaho, was undertaken in 1997 at the Big Cottonwood WMA. Three young people, 15 years of age or younger, were accompanied on a turkey hunt by a mentor supplied by the Department. All 3 hunters were successful in harvesting a turkey. Another youth hunt was planned for 1998 but the hunt was canceled because of low turkey numbers. The 3 successful applicants for the 1998 hunt were offered a hunting trip to Andrus WMA in replacement for their canceled hunt. Turkey numbers were too low to support even a limited hunt in 1999 (Table 11).

Management Implications

Opportunities to establish self-sustaining turkey populations in the Magic Valley Region are limited without supplemental winter feeding. Releases in Units 53 and 55 have failed to establish populations. The number of turkeys in Unit 43 has declined to a very low level because of the severity of winters and lack of a winter food source. A small population has been established at the Big Cottonwood WMA (Unit 54) and food plots planted to supplement their winter diet. Efforts will be undertaken to maintain a small turkey population in the Big Cottonwood drainage including periodic supplemental releases, if necessary, and maintenance of winter food plots.

MOURNING DOVE

Abstract

Doves observed on roadside routes indicate dove abundance in late August 1998 (2.2 doves/mi) was similar to the 1988-1997 mean of 2.3 doves/mi.

Population Surveys

Call Counts - Department personnel, in cooperation with the U.S. Fish and Wildlife Service (USFWS), collect data on 4 call-count routes in the Magic Valley Region. Because of the small sample, these data are probably not representative of regional conditions.

Roadside Route Counts - On August 1998 roadside surveys, the number of doves observed (2.4 doves/mi) was similar to the 1988-1997 mean of 2.3 doves/mi (Table 12).

Harvest Characteristics

No data are available (Table 12).

Management Implications

Roadside survey data suggest that as many as 50% of the doves have migrated out of the Magic Valley area by the opening of the hunting season on September 1. The onset of cooler weather, usually in early September, triggers movement of the remaining doves. Spring coo-count and August roadside surveys will continue to monitor dove trends and abundance.

RABBITS AND HARES

Population Surveys

Cottontail rabbits are counted on the 28 roadside surveys conducted each August in the Magic Valley Region. Eight cottontails were observed on 1998 routes; up from 0 observed in 1997.

Harvest Characteristics

No data are available.

Management Implications

Habitat projects implemented for pheasants, gray partridge, and quail through the HIP program and BLM/IDFG Cooperative Wildlife Management Program will benefit rabbits.

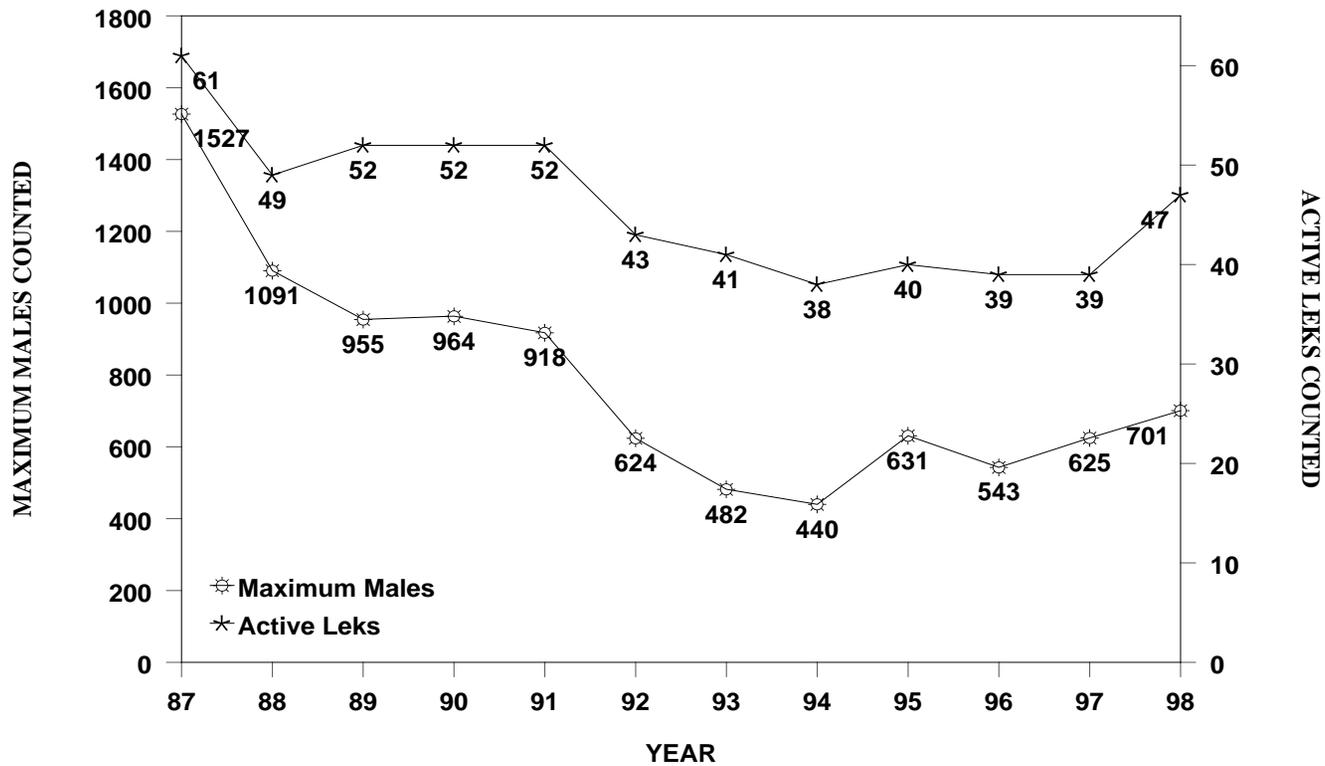


Figure 1. Total male sage grouse counted and number of active leks on 13 comparable lek routes, Magic Valley Region, 1987-1998.

Table 1. Pheasant population characteristics and production in the Magic Valley Region, 1985-1998.

Year	Winter Sex Ratios Hens Per Cock	N	Brood Routes					Brood Size	
			Routes & Miles Counted	Birds Per Mile	Percent Unsucc. Females	Juv.:100 Adult Females	N	0	
1985	3.2	359	12 (530)	0.47	11	670	31	6.6	
1986	1.6	397	13 (768)	0.36	14	803	50	6.3	
1987	1.8	490	13 (789)	0.25	6	631	50	6.1	
1988	3.0	809	14 (858)	0.34	13	723	32	5.8	
1989	2.1	884	14 (854)	0.27	16	554	24	6.1	
1990 ^a	1.9	1,333	14 (854)	0.52	29	742	31	6.2	
			28 (575)	0.54	30	447			
1991	ND	ND	28 (575)	0.33	43	529	22	4.9	
1992	2.2	1,572	28 (575)	0.42	26	361	19	5.2	
1993	1.3	455	28 (575)	0.22	35	465	8	6.9	
1994	2.0	757	28 (575)	0.56	14	727	16	5.9	
1995	1.9	1,483	28 (575)	0.13	33	683	8	4.8	
1996	2.0	741	28 (575)	0.41	17	555	21	5.8	
1997	ND		28 (575)	0.12	22	611	7	5.6	
1998	ND		28 (575)	0.19	17	741	10	6.0	

^a Survey was modified in 1990. Both the old and new surveys were conducted to allow continuity of trend data.

Table 2. Pheasant hunter success and harvest in the Magic Valley Region, 1985-1998.

Year	Bag and Possession Limit	Bellevue Check Station ^a				Telephone Survey		
		Hunters	Birds	Birds Per Hunter Day	Hours Per Bird	Hunters	Birds	Birds Per Hunter Day
1985	3-6	79	64	0.80	4.53	14,013	51,330	0.66
1986	3-6	211	167	0.79	4.71	12,288	33,810	0.58
1987	3-6	226	150	0.66	5.02	8,910	25,854	0.59
1988	3-6	142	80	0.56	6.30	6,707	25,278	0.77
1989	3-6	139	113	0.81	4.62	6,037	20,521	0.63
1990	3-6	182	241	1.32	2.75	8,644	36,602	0.84
1991	3-6	168	132	0.78	4.97	7,576	24,411	0.60
1992	3-6	126	136	1.10	3.31	6,603	27,347	0.72
1993	3-6	75	71	0.95	4.28	5,071	24,769	0.65
1994	3-6	101	105	1.04	4.13	3,802	24,629	0.97
1995	3-6	101	56	0.55	4.76	4,975	20,289	0.58
1996	3-6	66	70	1.06	3.91	7,200	17,551	0.55
1997	3-6	47	21	0.45	7.43	ND	ND	ND
1998	3-6	ND	ND	ND	ND	ND	ND	ND

^a Check station was operated at Timmerman Hill in 1985, 1986, and 1991.

Table 3. California quail population trends and harvest in the Magic Valley Region, 1985-1998.

Year	Brood Routes		Telephone Survey			
	Routes/Miles Counted	Birds/Mile	Bag and Possession Limit	Hunters	Birds/Birds	Hunter Day
1985			10-20	435	1,375	0.95
1986			10-20	615	4,170	1.75
1987			10-20	342	1,599	2.04
1988			10-20	534	2,685	1.38
1989			10-20	306	2,362	2.35
1990	28/575	0.15	10-20	946	6,446	1.56
1991	28/575	0.15	10-20	688	5,624	1.42
1992	28/575	0.06	10-20	726	3,199	0.82
1993	28/575	0.21	10-20	1,113	5,195	1.58
1994	28/575	0.18	10-20	955	5,300	1.27
1995	28/575	0.14	10-20	1,198	14,215	1.73
1996	28/575	0.08	10-20	1,642	19,003	2.25
1997	28/575	0.08	10-20	ND	ND	ND
1998	28/575	0.13	10-20	ND	ND	ND

Table 4. Trend of upland game species harvested per 100 hunters checked at stations on opening weekend of the grouse, quail, and partridge season, Magic Valley Region, 1985-1998.

Year	Sage Grouse	Blue Grouse	Ruffed Grouse	Chukar Partridge	Gray Partridge	Mourning Dove	CA Quail	Cottontail and Pygmy Rabbits	Number Hunters
1985	59.9	1.9	0.00	0.3	2.4	0.1	0.00	0.04	2,153
1986	77.0	0.4	0.00	1.7	3.7	0.5	0.07	0.11	2,824
1987	85.3	0.3	0.04	2.6	4.4	0.6	1.12	0.61	2,684
1988	85.1	0.1	0.00	2.5	2.6	1.6	1.46	0.41	2,459
1989	78.3	0.4	0.10	1.3	1.2	1.5	0.10	0.40	2,037
1990	118.3	0.6	0.13	1.7	2.6	0.3	0.25	1.88	2,393
1991	62.8	0.2	0.20	1.8	1.7	0.9	0.37	0.00	2,449
1992	47.0	0.3	0.54	1.1	0.9	0.3	1.03	1.08	1,852
1993	42.1	0.4	0.00	0.3	0.2	2.7	0.87	0.00	1,731
1994	72.7	1.10	0.25	1.10	2.03	0.80	4.30	0.00	1,629
1995	35.5	0.63	0.24	1.42	2.21	2.29	1.18	0.00	1,269
1996	55.3	0.81	0.51	6.88	3.74	0.10	6.27	0.10	989
1997	38.7	0.67	0.00	3.63	2.10	1.53	0.38	0.10	1,048
1998	53.0	1.17	0.00	5.12	3.41	0.53	0.00	0.00	938
1988-1997									
Avg.	63.6	0.52	0.20	2.17	2.11	1.20	1.62	0.40	1,786

Table 5. Forest grouse hunter success in the Magic Valley Region obtained from the telephone survey, 1985-1998.

Year	Bag and Possession Limits	Hunters	Birds	Birds/Hunter Day
1985	4-8	472	768	0.78
1986	4-8	724	2,322	0.83
1987	4-8	634	2,002	0.84
1988	4-8	804	3,243	0.88
1989	4-8	639	2,182	1.07
1990	4-8	765	3,097	0.65
1991	4-8	922	4,357	1.10
1992	4-8	1,102	3,226	0.88
1993	4-8	2,814	4,329	0.39
1994	4-8	1,910	5,544	0.72
1995	4-8	1,990	5,138	0.52
1996	4-8	1,408	5,631	0.96
1997	4-8	ND	ND	ND
1998	4-8	ND	ND	ND

Table 6. Sage grouse production in the Magic Valley Region based on wing collections, 1985-1998.

Year	Juv.:100 Females	Juv.:100 Adults	Percent Unsuccessful Females
1985	252	155	48
1986	244	161	37
1987	142	90	43
1988	120	77	56
1989	194	125	50
1990	239	146	48
1991	102	67	80
1992	117	63	78
1993	147	107	50
1994	323	213	76
1995	136	82	60
1996	159	104	61
1997	165	103	65
1998	205	138	65
10-year average	175	115	63
Percent change from last year	+24	+34	0
Percent change from previous 5-year average	+10	+13	+4

Table 7. Sage grouse hunter success and harvest in the Magic Valley Region obtained from check stations and the telephone survey, 1985-1998.

Year	Bag and Possession Limit	Check Stations				Telephone Survey		
		Hunters	Birds	Birds Per Hunter Day	Hours Per Bird	Hunters	Birds	Birds Per Hunter Day
1985	2-2	2,153	1,290	0.60	7.4	1,788	2,513	0.76
1986	2-4	2,824	2,169	0.77	5.6	2,280	4,158	0.92
1987	2-4	2,359	1,961	0.73	5.3	2,526	6,743	1.18
1988	2-4	2,459	2,092	0.85	5.3	2,969	6,451	0.96
1989	2-4	2,018	1,580	0.69	5.5	2,107	4,548	0.64
1990	3-6	2,375	2,833	1.11	3.9	4,205	20,584	1.47
1991	3-6	2,429	1,525	0.57	7.5	4,121	8,239	0.69
1992	3-6	1,847	870	0.51	9.9	3,256	7,710	0.85
1993	3-6	1,709	729	0.35	11.3	5,288	6,672	0.43
1994	3-6	1,587	1,185	0.70	6.2	4,177	11,331	0.85
1995	3-6	1,313	520	0.38	11.1	4,285	8,062	0.59
1996	1-2, 2-4	936	548	0.56	6.6	6,615	8,269	2.81
1997	1-2, 2-4	1,012	408	0.38	11.7	ND	ND	ND
1998	1-2, 2-4	896	497	0.54	7.3	ND	ND	ND

Table 8. Chukar partridge harvest and hunter success obtained from the telephone survey in the Magic Valley Region, 1985-1998.

Year	Bag and Possession Limit	Telephone Survey		
		Hunters	Birds	Birds Per Hunter Day
1985	5-10	764	2,092	0.72
1986	8-16	919	3,125	0.95
1987	8-16	1,151	3,394	0.78
1988	8-16	973	1,805	0.64
1989	8-16	594	1,546	1.01
1990	8-16	1,383	4,312	1.11
1991	8-16	721	3,871	1.87
1992	8-16	857	1,487	1.18
1993	8-16	1,763	4,360	0.59
1994	8-16	1,105	3,371	0.88
1995	8-16	1,584	5,788	0.85
1996	8-16	1,408	7,273	1.19
1997	8-16	ND	ND	ND
1998	8-16	ND	ND	ND

Table 9. Gray partridge production on routes and hunter success from the telephone survey in the Magic Valley Region, 1985-1998.

Year	Production					Telephone Survey			
	Routes & Miles Counted	Birds Per Mile	No. Birds Counted	Brood Size	N	Bag and Possession Limit	Hunters	Birds	Birds Per Hunter-Day
1985	12 (530)	0.015	12	9.0	2	5-10	923	3,644	0.91
1986	13 (768)	0.20	156	11.8	13	8-16	1,223	4,012	0.67
1987	13 (789)	0.24	192	8.2	22	8-16	1,183	4,427	0.85
1988	14 (858)	0.18	149	8.9	13	8-16	757	2,578	0.73
1989	14 (854)	0.20	170	10.6	13	8-16	628	1,921	0.62
1990 ^a	14 (854)	0.19	157	10.1	15	8-16	1,773	9,361	1.07
	28 (575)	0.35	195						
1991	28 (575)	0.18	111	9.7	9	8-16	1,295	2,805	0.49
1992	28 (575)	0.22	123	7.5	11	8-16	1,038	3,932	0.76
1993	28 (575)	0.13	71	8.4	17	8-16	1,886	6,741	0.89
1994	28 (575)	0.21	112	11.2	10	8-16	1,555	5,188	0.72
1995	28 (575)	0.08	45	11.2	4	8-16	2,092	8,834	0.75
1996	28 (575)	0.41	244	14.6	16	8-16	3,050	22,053	1.12
1997	28 (575)	0.11	62	10.2	6	8-16	ND	ND	ND
1998	28 (575)	0.15	83	11.9	7	8-16	ND	ND	ND

^a Survey modified in 1990. Both the old and new surveys were conducted to allow continuity in trend data.

Table 10. Turkey transplant history for the Magic Valley Region, 1982-1998.

Year	Subspecies ^a	Release Site	Number Birds Released	New or Supplemental Release
1982	R	Niagara Springs (Unit 53)	20	N
1983	R, M	Almo (Unit 55)	18R, 1M	N
1984	R	Almo (Unit 55)	10	S
1988	R	Big Cottonwood (Unit 54)	17	N
1994	R	Big Cottonwood (Unit 54)	6	S
1995	R	Big Cottonwood (Unit 54)	14	S
1996	R	Big Cottonwood (Unit 54)	8	S
1998	R	Big Cottonwood (Unit 54)	55	S

^a E - Eastern; M - Merriams; R - Rio Grande.

Table 11. Turkey harvest in the Magic Valley Region, 1985-1998.

Hunt	Number of Hunts	Permits Available	Hunters	Birds Taken	Days Per Bird	Total Days Hunted
1985						
Controlled	2	10	10	4	5.0	20
1986						
Controlled	3	15	15	5	8.4	42
1987						
Controlled	6	21	21	4	15.3	61
1988						
Controlled	6	21	21	9	6.9	62
General	1		93	0	ND	56
1989						
Controlled	6	21	21	9	ND	ND
General	1		31	3	39.6	119
1990						
Controlled	3	6	6	2	3.2	19
General	1		18	1	39.0	39
1991						
General	1	0	58	3	62.7	118
1992						
General	1	0	8	2	4.0	8
1993						
General	1	0	10	0	0.0	118
1994						
	1	0	ND	0	ND	ND
1995						
	1	0	ND	0	ND	ND
1996						
	1	0	ND	0	ND	ND
1997						
Youth Controlled Hunt	1	3	3	3	ND	ND
1998						
(Youth Controlled Hunt Canceled)	0	0	0	0	0.0	0

Table 12. Mourning dove population trends and harvest in the Magic Valley Region, 1985-1998.

Year	Brood Routes		Telephone Survey			
	Routes/Miles Counted	Birds/Mile	Bag and Possession Limit	Hunters	Birds	Birds/Hunter Day
1985			15-30	1,593	21,505	2.89
1986	7/413	2.0	15-30	1,703	18,122	3.92
1987	13/788	2.5	10-20	1,384	15,121	2.02
1988	15/911	2.0	10-20	1,003	9,333	2.89
1989	14/854	2.4	10-20	1,273	10,424	3.11
1990 ^a	14/829	4.8	10-20	1,208	17,828	3.43
	28/575	3.1	10-20			
1991	28/575	2.0	10-20	1,290	17,983	3.12
1992	28/575	1.8	10-20	1,303	16,991	4.12
1993	28/575	1.8	10-20	3,680	33,644	1.66
1994	28/575	3.3	10-20	2,266	26,633	3.18
1995	28/575	1.8	10-20	2,802	26,238	2.29
1996	28/575	2.2	10-20	3,262	47,091	2.57
1997	28/575	2.2	10-20	ND	ND	ND
1998	28/575	2.4	10-20	ND	ND	ND

^a Survey was modified in 1990. Both the old and new surveys were conducted to allow continuity in trend data.

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Upland Game Surveys and</u>
PROJECT:	<u>W-170-R-23</u>		<u>Inventories</u>
SUBPROJECT:	<u>5</u>	STUDY NAME:	<u>Upland Game and</u>
STUDY:	<u>II</u>		<u>Waterfowl Population</u>
JOB:	<u>1</u>		<u>Status and Trends</u>

PERIOD COVERED: April 1, 1998 to March 31, 1999

UPLAND GAME - SOUTHEAST REGION

PHEASANT

Abstract

Population, hunter effort, and harvest information collection efforts for pheasant have been reduced somewhat from recent years. Subjective evaluation of pheasant numbers indicates relatively stable populations in parts of the southeast region, and gradual increases in others. A telephone harvest survey to provide estimates of total regional harvest, effort, and participation was not conducted. Two check stations operating opening weekend suggested increased hunter participation and success compared to 1997.

Population Surveys

Brood routes and winter sex ratio counts were not conducted for pheasants in the Southeast Region in 1998 (Table 1). Due to limited sample sizes and infrequent data collection efforts, little trend information has been provided by winter sex ratio counts or brood route surveys. Breeding territory surveys, conducted for several years in conjunction with pheasant research, were discontinued with the termination of the southeast region portion of that project.

Harvest Characteristics

A slight increase in hunter numbers (+6%), and a larger increase in birds harvested (+59%), was seen at the American Falls and Tilden Bridge check stations in 1998 compared to 1997 (Table 2). Birds harvested per hunter day increased (+25%), and hours expended per bird decreased (-19%) compared to the previous year.

No regional telephone harvest survey was conducted; therefore, there are no estimates for total regional participation, effort, or harvest.

Analysis of trend information from both check station and telephone survey data in recent years suggests pheasant populations have remained at levels lower than those of 10 to 20 years ago. Check station results, hunter reports, incidental sightings, and other anecdotal information suggest gradual increases over the last 4 to 5 years in areas of good habitat in southeast Idaho.

Climatic Conditions

Precipitation during the critical months of nesting was near average through June 1998; however, cooler than average temperatures and small frequent rainstorms may have impacted early nest success.

Precipitation for the 1998-1999 winter was above average, with snowpack measurements 116% of the 30-year mean for the eastern portion of the southeast region. The western portion was significantly below the average, with 74% of the 30-year mean for the area. The entire region averaged 95% of normal snowfall compared to the past 30-year period; however, there was considerable variation in local areas, with most of the snow accumulating on the upper foothills and mountains. Significant accumulations of snow were present on the valley floors in the higher elevation southeast corner of the state.

Release of Pen-Reared Pheasants

There were 1,300 fully-grown game farm cocks released on the Sterling WMA during fall 1998. Of this total, 80 were released for a Youth Pheasant Hunting Day. Game farm birds have been released on the WMA historically to provide hunters with additional opportunity. Bag limit for pheasants on the WMA was 2 birds, compared with 3 elsewhere in the region, in order to be consistent with other WMAs, and to more equitably distribute harvest. Permits were required to hunt on WMAs during 1998.

Management Implications

Declining habitat quality due to changes in farming practices has resulted in a decline in pheasant numbers in the Southeast Region from levels of 10 to 20 years ago. Until the quantity and quality of available habitat increases, pheasant numbers will likely remain below historical levels. The U.S. Department of Agriculture's Conservation Reserve Program (CRP) enrolled over 400,000 acres in the Southeast Region during 1985-1995 (25% have potential as pheasant habitat), but its effect on pheasant production is unclear at this time. The CRP program was extended for another 10 years beginning in 1997. During the initial 1997 enrollment period, 288,978 acres in the Southeast Region were accepted. It is currently unknown what impact a decrease in CRP acreage in the Southeast Region will have on pheasant populations. The Department's Habitat Improvement Program, begun in 1987, is also contributing toward increasing available cover and forage locally by capitalizing on private land development. A series of average or mild winters has probably contributed to increases in pheasants in favorable habitats over the past 4 to 5 years.

Research

A research project to evaluate effects of intensive habitat management and predator removal on pheasants was initiated in 1995 within selected Bingham County sites (Connelly et. al. 1995). That program was moved to south-central and southwest Idaho in 1998.

Literature Cited

Connelly, J. W., S. Antrim, G. Nohrenberg, and K. P. Reese. 1995. Upland game ecology. Job Prog. Rpt. W-160-R-22. Idaho Dept. Fish and Game, Boise. 30 pp.

FOREST GROUSE

Abstract

No regional telephone harvest survey was conducted; therefore, estimates for total harvest, participation, or effort are not available. Limited wing barrel data suggested possible increased blue grouse and decreased ruffed grouse harvests.

Population Surveys

Data on sex and age characteristics of forest grouse populations are collected in the Southeast Region from voluntary wing drop barrels placed during hunting season. Fourteen wing barrels were placed throughout the region during 1998. Wide variations in numbers of wings collected make it difficult to draw conclusions about individual years' harvest or populations based on this data.

Sixty-four blue grouse wings were collected in 1998, a 78% increase from 1997, but a 10% decrease from the previous 5-year average of 71 wings (Table 3). Juvenile:100 adults ratio for blue grouse was not available.

Two hundred thirty-eight ruffed grouse wings were collected in 1998, 47% more than in 1997 (Table 3). The juvenile:100 adults ratio was 170, which is average.

Harvest Characteristics

In recent years harvest data on forest grouse has been collected from two sources, the telephone survey and voluntary wing drop barrels. Telephone survey data provides information on numbers of hunters, birds harvested, and hunter success. Wing barrels provide more immediate feedback to managers, and information on sex and age of birds harvested.

No telephone harvest survey was conducted in 1998-99. Refer to the statewide summary for other available information regarding statewide estimates of participation, effort, and harvest.

Climatic Conditions

See Pheasant Section.

Management Implications

Management of forest grouse consists largely of data collection and analysis of impacts to habitat. Indications from harvest and production data over the last 14 years suggest a trend in more hunters harvesting a greater number of birds. Populations of forest grouse can vary widely from year to year, based on annual production.

SAGE GROUSE

Abstract

Estimates of sage grouse production in 1998 indicated a continuation of decreases throughout southeast Idaho compared to 1997 levels; however, sample sizes were small. Lek attendance generally was similar to 1997 throughout the region. No regional telephone harvest survey was conducted.

Population Surveys

Lek count routes in recent years have included 4 leks in Bingham and Power Counties, 35 leks in Butte and Blaine Counties, 3 leks in Bear Lake County, 3 leks in Caribou County, and 10 leks in Oneida County (Tables 5, 6, 7, 8, 9). Overall, lek counts have been declining for a period of years.

Ground and helicopter searches identified several previously unknown leks in the west Bear Lake and Malad/Curlew Valley areas.

Reproductive information for sage grouse was derived from wing collections on the Curlew National Grasslands (N=22) and Bear Lake (N=8). Due to a closure of hunting on the Big Desert in 1996, no wings were collected from that area. Wings collected from Caribou County were included in the Bear Lake data set. Wing barrels were located in the Curlew at Stone Reservoir, East Juniper, and Daniels Reservoir; and in Bear Lake at Pegram and Bear Lake Hot Springs.

A total of 30 sage grouse wings were collected in 1998 (Table 10). Overall juvenile:100 adults ratio was 88, below the most recent 5-year average of 135 (Table 10). Decreases in production were detected for both the Curlew National Grasslands (Table 12) and Bear Lake (Table 13) populations.

Harvest Characteristics

Since the Big Desert was closed to sage grouse harvest, no check station was operated at American Falls.

No regional telephone harvest survey was conducted. See statewide summary for estimates of statewide harvest, effort, and participation.

Climatic Conditions

See Pheasant Section.

Management Studies

Inactive during this report period.

Management Implications

Production of sage grouse appeared to decline for the third year during 1998. Hunter harvest, success, and/or lek count data suggest populations at low levels. Persistent drought during the late 1980s and early 1990s and long-term declines in habitat quantity/quality may partially explain the downward trend of populations over the years.

An advisory group consisting of representatives of several interest groups and government agencies was formed during 1998 to examine the status and trend of sage grouse and their habitat in the greater Curlew Valley area, and to offer suggestions for future management.

SHARP-TAILED GROUSE

Abstract

Age ratio data of wings indicated a decrease in sharp-tailed grouse production during 1998 compared to 1997. Five lek routes are established in the region to better monitor long-term population trends, although not all were checked in 1999. No regional telephone harvest survey was conducted.

Population Surveys

Wing barrels (see Forest Grouse and Sage Grouse sections) placed throughout the region provide the majority of wings collected. Data analysis of sharp-tailed grouse wings (N=379) indicated a decrease in juvenile:100 adult ratio (130:100) from 1997 levels (163:100, Table 15). The 1998 ratio was 3% higher than the previous 5-year average.

Three of five established lek routes in the region were surveyed during 1999 (Table 16).

Harvest Characteristics

No regional telephone harvest survey was conducted. See statewide summary for estimates of statewide harvest, effort, and participation.

Climatic Conditions

See Pheasant Section.

Management Implications

Currently, the single most important factor affecting sharp-tailed grouse populations in the Southeast Region is believed to be the Conservation Reserve Program (CRP). During 1985 to 1997, over 400,000 acres of cropland have been planted with various grass/forb mixtures within present sharp-tailed grouse range. During the 1997 reenrollment period, 288,978 acres were accepted for another 10 years. Much of this acreage lies within sharp-tailed grouse range. Recent harvest data suggest a substantial increase in populations has occurred in the last decade.

Trapping and Transplanting

Eighty-eight (45 males, 43 females) sharp-tailed grouse were trapped between the Southeast and Magic Valley Regions during spring 1998. Sixty-three (32 male, 31 females) were translocated to the South Hills near Twin Falls. Twenty-five (13 males, 12 females) were translocated to Washington. Both translocation efforts were part of ongoing reestablishment programs.

GRAY PARTRIDGE

Abstract

No data were collected on gray partridge populations. No regional telephone harvest survey was conducted.

Population Surveys

Some gray partridge wings are collected in voluntary hunter wing barrels; however, sample sizes are generally small, and have not been analyzed for several years in the Southeast Region.

Harvest Characteristics

Harvest information on gray partridge in the past was collected via the telephone survey. Estimates vary widely from year to year, due primarily to small sample sizes from the region (Table 18). No regional telephone harvest survey was conducted during 1998. See statewide summary for estimates of statewide harvest, effort, and participation.

Climatic Conditions

See Pheasant Section.

Management Implications

Management of these populations will be incidental to other upland game bird species. The Conservation Reserve Program has had a positive effect on habitat suitability and presumably gray partridge populations. The telephone harvest data and incidental reports suggest a stable or increasing population over the past decade.

CHUKAR PARTRIDGE

Abstract

Limited data were collected on chukar partridge populations. No regional telephone harvest survey was conducted.

Population Surveys

Few, if any, chukar partridge wings are collected in voluntary hunter wing barrels. Chukars are occasionally sighted incidental to deer and elk surveys during winter. Little suitable habitat and restricted populations exist within the Southeast Region. Areas known to support chukar populations at present are the northeast corner of Unit 70 near Pocatello; the Blackrock area in Unit 71; and several portions of Unit 73 near Malad, including east of Interstate Highway 15 and the Samaria Mountains. Private, unauthorized releases of pen-raised chukars are frequent occurrences. Survival of those birds is believed to be extremely low, with no evidence of self-supporting populations resulting.

Harvest Characteristics

Harvest information on chukar partridge in past years has been collected via the telephone survey. Estimates vary widely from year to year, due primarily to small sample sizes from the region (Table 18). No regional telephone harvest survey was conducted during 1998. See statewide summary for estimates of statewide harvest, effort, and participation.

Climatic Conditions

See Pheasant Section.

Management Implications

Management of these populations will be incidental to other upland game bird species. The main source of information on status of populations is currently incidental sightings and reports.

Although variable, the telephone harvest data suggests an increasing population over the last 10 years. Lack of suitable habitat will continue to limit populations.

WILD TURKEY

Abstract

Eight hunts with a total of 175 permits resulted in an estimated harvest of 86 turkeys. Hunter success varies annually. No ground surveys were conducted.

Population Surveys

Wild turkeys have been transplanted into two general areas in the southeast region during the last two decades - the Snake River bottoms upstream from American Falls Reservoir, and the Bear River in Franklin County.

Winter distribution surveys were conducted along the Snake River during the winters of 1987-1988, 1988-1989, and 1992-1993. These surveys indicated that good quality turkey habitat was limited and that populations had not continued to grow at rates documented earlier, following the initial introduction. Comments from local landowners during the surveys and declining hunter success rates indicated that a decrease in total population size probably occurred after 1984 with little or no recovery to date. No surveys were conducted during 1998. Even under good snow conditions, surveys provide limited useful data.

Incidental reports indicate increasing numbers and expanded range of turkeys in Franklin County, due in part to unauthorized releases of turkeys of unknown origin.

Harvest Characteristics

Following introductions of wild turkeys from South Dakota, 3 consecutive spring hunts with 5 permits each were initiated in Franklin County in 1995, and increased to 10 permits in 1997. In 1998 permits were increased to 20 for each hunt, and 2 fall either-sex hunts with 50 permits each were initiated. The hunt area was also expanded.

Three consecutive spring hunts (68A-1, 68A-2, 68A-3) with 15 permits each, increased from 10 per hunt in 1998, were conducted along the Snake River in Unit 68A in 1999. The 1998-1999 harvest, as estimated by the telephone harvest survey, showed a total of 107 birds estimated taken in the region (Table 19).

Climatic Conditions

See Pheasant Section.

Management Implications

The telephone survey of hunters and incidental field reports provide the data on populations in the Southeast Region. To obtain additional information, increased emphasis has been placed on landowner input and sportsmen contacts.

Trapping and Transplanting

In response to a damage/depredation complaint on Cub River in Franklin County, 41 turkeys of unknown origin were trapped during winter 1999. Fifteen were released on Deep Creek (Bear River), and 26 were transported to the Big Lost River near Mackay and released (Table 20).

MOURNING DOVE

Abstract

Results from mourning dove coo counts in 1998 were 29% below the previous 5-year average. No regional telephone harvest survey was conducted.

Population Surveys

Wing barrels provide only a limited amount of data on mourning doves. Sample sizes are generally too small for analysis.

Coo counts are conducted on 3 established routes in the southeast region, in conjunction with the U.S. Fish and Wildlife Service. Routes are located in Oneida, Caribou, and Bear Lake Counties.

Harvest Characteristics

Harvest information on mourning doves is collected via the telephone survey. No regional telephone harvest survey was conducted during 1998. See statewide summary for estimates of statewide harvest, effort, and participation.

Climatic Conditions

See Pheasant Section.

Management Implications

Management decisions rely heavily on population and harvest statistics collected nationwide by the U.S. Fish and Wildlife Service.

RABBITS AND HARES

Abstract

No population surveys are conducted for rabbits or hares in the Southeast Region. No regional telephone survey of rabbit hunters was conducted during 1998.

Population Surveys

No population surveys were conducted in 1998.

Harvest Characteristics

Harvest information for the region has been based on the telephone survey. Sample size tends to be small and estimates of participation and harvest are widely variable. No regional telephone survey was conducted during 1998. See statewide summary for statewide information on harvest, effort, and participation.

Climatic Conditions

See Pheasant Section.

Management Implications

In the past, limited data on rabbits and hares have been collected in the Southeast Region. It is unlikely that this situation will change; however, continued efforts will be made to consider the habitat requirements of rabbits and hares in land use management.

Table 1. Pheasant population characteristics and production in the Southeast Region, 1984-1998.

Year	Winter Sex Ratio ^a	N ^b	Brood Routes					Average Brood Size
			Routes & Miles Counted	Birds Per Mile	Percent Unsucc. Females	Juv.:100 Adult Females	N	
1984	2.5	2,388	c	c	c	c	7	5.7
1985	3.8	453	c	c	c	c	c	c
1986	4.0	436	c	c	c	c	12	5.2
1987	1.4	81	c	c	c	c	c	c
1988	c	c	c	c	c	c	c	c
1989	c	c	c	c	c	c	c	c
1990	1.9	264	10/200	0.04	50	650	7	3.7
1991	c	c	10/200	0.09	83	180	2	5.5
1992	c	c	10/200	0.28	55	400	5	8.8
1993	1.5	10	10/200	0.01	0	500	1	5.0
1994	1.5	10	10/200	0.005	0	0	0	0.0
1995	c	c	8/160	0.06	0	500	2	5.0
1996	c	c	10/200	0.11	0	566	3	5.7
1997	c	c	c	c	c	c	c	c
1998	c	c	c	c	c	c	c	c
Previous 5-year Average	1.5	10	--	0.05	0	392	1.5	3.9
Percent Change From Previous 5-year Avg.	--	--	--	--	--	--	--	--

^a Hens per cock.

^b Sample size for winter sex ratio determination.

^c No data available.

Table 2. Pheasant hunter success and harvest in the Southeast Region, 1984-1998. Check stations were operated on opening weekend only at American Falls and Tilden Bridge.

Year	Bag and Possession Limit	Check Station				Telephone Survey		
		Hunters	Birds	Birds Per Hunter Day ^a	Hours Per Bird	Hunters	Birds	Birds Per Hunter Day
1984	3/6	1,234	565	0.5	8.5	907	2,565	0.7
1985	3/6	897	350	0.4	9.5	7,169	18,293	0.5
1986	3/6	495	107	0.2	17.0	5,043	8,133	0.5
1987	3/6	480	161	0.3	10.8	3,319	9,089	0.6
1988	3/6	276	87	0.3	11.7	3,561	11,532	0.6
1989	3/6	456	243	0.5	7.9	2,290	6,688	0.7
1990	3/6	222	141	0.6	6.2	3,485	12,526	0.6
1991	3/6	287	149	0.5	7.5	3,525	15,839	0.8
1992	3/6	263	188	0.7	4.9	4,520	20,368	1.0
1993	3/6	232	76	0.3	11.6	2,628	11,967	0.6
1994	3/6	232	91	0.4	8.6	2,884	10,245	0.7
1995	3/6	240	107	0.5	8.1	2,092	9,402	0.6
1996	3/6	308	177	0.6	6.1	^b	^b	^b
1997	3/6	282	102	0.4	9.8	^b	^b	^b
1998	3/6	300	162	0.5	7.9	^b	^b	^b
Previous 5-year Average		259	111	0.4	8.8	2535	10,538	0.6
Percent Change From Previous 5-year Average		+16	+46	+25	-10	--	--	--

^a Total birds checked over total hunter days.

^b No data available.

Table 3. Forest grouse production in the Southeast Region based on wing collection, 1984-1998.

Year	Blue Grouse			Ruffed Grouse		
	N	Juv.:100 Adult Females	Juv.:100 Adults	Percent Unsucc. Females	N	Juv.:100 Adults
1984	a	a	a	a	a	a
1985	15	a	a	a	215	a
1986	31	a	182	a	242	235
1987	74	a	87	a	505	158
1988	67	291	156	a	204	152
1989	79	a	243	a	186	110
1990	60	a	155	a	170	128
1991	92	268	93	25	119	358
1992	157	368	142	80	216	65
1993	45	520	137	a	29	93
1994	64	717	205	a	340	227
1995	52	a	117	a	97	64
1996	157	915	313	a	461	271
1997	36	a	227	a	162	195
1998	64	a	a	a	238	170
Previous 5-year Average	71	--	--	--	218	170
Percent Change From Previous 5-year Average	-10	--	--	--	+9	0

^a No data available.

Table 4. Forest grouse hunter success and harvest in the Southeast Region obtained from hunter report cards and the telephone survey, 1984-1998.

Year	Bag and Possession Limit	Hunter Report Cards				Telephone Survey		
		Hunters	Birds	Birds Per Hunter	Hours Per Bird	Hunters	Birds	Birds Per Hunter Day
1984	4/8	^a	^a	^a	^a	1,621	2,889	0.6
1985	4/8	70	105	1.5	1.3	2,041	7,650	0.7
1986	4/8	142	176	1.2	2.1	2,284	15,739	1.2
1987	4/8	286	450	1.6	2.0	1,986	13,890	1.6
1988	4/8	141	172	1.2	2.7	3,037	16,962	1.0
1989	4/8	107	119	1.1	2.9	2,763	10,490	0.7
1990	4/8	206	276	1.3	2.4	2,916	12,556	0.8
1991	4/8	271	298	1.1	2.4	2,943	14,800	0.9
1992	4/8	481	691	1.4	2.6	4,398	24,897	0.9
1993	4/8	94	57	0.6	6.1	6,927	18,275	0.6
1994	4/8	^a	^a	^a	^a	4,664	22,363	0.7
1995	4/8	^a	^a	^a	^a	3,232	11,860	0.6
1996	4/8	^a	^a	^a	^a	^a	^a	^a
1997	4/8	^a	^a	^a	^a	^a	^a	^a
1998	4/8	^a	^a	^a	^a	^a	^a	^a
Previous 5-year Average		--	--	--	--	4,941	17,499	0.6
Percent Change From Previous 5-year Average		--	--	--	--	--	--	--

^a No data available.

Table 5. Maximum number of male sage grouse counted on leks in Bingham and Power Counties, Southeast Region, 1984-1998.

Year	Herriott Lake	Jugalard Lake	Rock Lake	Mosby Well #2
1984	18	0	41	0
1985	31	28	48	0
1986	19	55	66	0
1987	78	96	118	3
1988	71	112	92	0
1989	47	69	68	a
1990	57	88	93	a
1991	41	72	60	a
1992	a	a	a	a
1993	18	24	39	a
1994	a	a	a	a
1995	41	0	49	0
1996	5	0	49	a
1997	0	0	23	0
1998	15	0	17	0
Previous 5-year Average	16	6	40	--
Percent Change From Previous 5-year Average	-6	-100	-58	--

^a No data available.

Table 6. Maximum number of male sage grouse counted on leks in Bear Lake County, Southeast Region, 1984-1998.

Year	Geneva Cemetery	Cow Creek #1	Utah Line	Cow Creek #2
1984	11	a	a	a
1985	14	a	a	a
1986	16	a	a	a
1987	26	a	a	a
1988	17	a	a	a
1989	9	70	8	a
1990	4	80	14	a
1991	a	a	a	a
1992	0	32	a	6
1993	a	a	a	a
1994	0	12	a	0
1995	0	0	a	0
1996	0	0	a	0
1997	a	a	a	a
1998	0	0	a	a
Previous 5-year Average	0	--	--	--
Percent Change From Previous 5-year Average	--	--	--	--

^a No data available.

Table 7. Maximum number of male sage grouse counted on leks in Caribou County, Southeast Region, 1984-1998.

Year	Wooley Valley	Trail Creek	Slug Creek #1	Slug Creek #2	Sage Valley	Corral Creek
1984	2	33	17	a	a	a
1985	0	24	12	a	a	a
1986	0	31	15	a	a	3
1987	0	38	15	a	a	a
1988	0	24	11	a	a	a
1989	a	27	8	a	a	a
1990	a	32	8	10	a	a
1991	a	22	7	26	a	a
1992	a	28	8	24	a	a
1993	a	20	8	5	a	a
1994	a	13	6	10	a	a
1995	a	8	1	0	a	a
1996	a	6	0	0	a	a
1997	a	6	2	3	a	a
1998	a	12	3	4	a	a
Previous 5-yr Average	--	11	3	4	--	--
Percent Change From Previous 5-yr Average	--	+9	-100	-100	--	--

^a No data available.

Table 8. Maximum number of male sage grouse counted on lek routes^a in Butte and Blaine Counties, Southeast Region, 1987-1998.

Year	Route #1	Route #2	Route #3	Route #4	Route #5
1987	185	102	155	191	237
1988	137	129	166	145	246
1989	61	52	75	93	92
1990	92	54	96	99	79
1991	51	31	84	103	137
1992	47	11	62	41	63
1993	31	6	30	12	42
1994	20	29	53	8	55
1995	61	10	47	11	54
1996	54	13	39	4	22
1997	54	14	38	2	19
1998	74	15	37	1	19
Previous 5-year Average	44	14	41	7	38
Percent Change From Previous 5-year Average	+68	7	-10	-86	-50

^a Route 1 leks: Frenchmans, Detmers Dugout, Watertank, Quaking Aspen Airstrip, Detmers, West Big Lake, South Big Lake.
Route 2 leks: East Big Lake, McCarty, Big Lake, Dugout, Rocky Lake.
Route 3 leks: Sunset Lake, Ryegrass, Prairie, South Crossroads, Crossroads.
Route 4 leks: Reynolds, Lava Bluff, Osborne, Pitfall, Wakkinen, Firebomb, Turnaround, Weather Station.
Route 5 leks: Rattlesnake, Coxs Well, South Coxs Well, East Coxs Well, Silvertank, Antelope Lake, Houghlands Well, South Antelope Lake, Hill #1, Hill #2.

Table 9. Maximum number of male sage grouse counted on lek routes^a in Oneida County, Southeast Region, 1995-1998.

Year	Curlew Route	Rockland Route
1995	^b	^b
1996	18	20
1997	18	6
1998	11	17
Previous 5-year Average	--	--
Percent Change From Previous 5-year Average	--	--

^a Curlew Route leks: South 13, Baker, Little Rock Spring, Ketchum, Meadow Divide.

Rockland Route leks: Marble, Exchange, West Jacobson, Watertower, Cederhill.

^b No data available.

Table 10. Sage grouse production in the Southeast Region based on wing collections, 1984-1998. Big Desert harvest season closed 1996.

Year	N ^a	Juv.:100 Females ^b	Juv.:100 Adults ^c	N ^d	Percent Unsuccessful Females ^b
1984	124	268	202	31	52
1985	942	360	232	183	60
1986	1601	289	184	^e	49
1987	480	199	125	^e	42
1988	934	115	81	362	42
1989	^e	235	151	^e	60
1990	581	256	161	156	41
1991	^e	98	70	^e	72
1992	367	121	79	134	82
1993	163	190	126	30	53
1994	454	305	199	173	79
1995	279	90	60	126	58
1996	46	375	188	^e	100
1997	51	186	104	^e	14
1998	30	140	88	^e	60
Previous 5-year Average	199	229	135	110	61
Percent Change From Previous 5-year Average	-85	-39	-35	--	-2

^a Sample size for total wings collected.

^b Females = adults + yearlings.

^c Adults = adults + yearlings.

^d Sample size for total adult and yearling female wings collected.

^e No data available.

Table 11. Sage grouse production in the Power/Bingham (Big Desert) unit of the Southeast Region based on wing collections, 1984-1998.

Year	N ^a	Juv.:100 Females ^b	Juv.:100 Adults ^c	N ^d	Percent Unsuccessful Females ^b
1984	124	268	202	31	52
1985	852	344	224	171	60
1986	^e	302	190	^e	49
1987	^e	200	125	^e	41
1988	818	108	77	331	^e
1989	^e	230	149	^e	^e
1990	378	267	164	88	6
1991	^e	91	62	^e	78
1992	127	84	57	55	84
1993	77	162	103	19	47
1994	307	291	198	60	80
1995	240	85	56	109	60
1996	^e	^e	^e	^e	^e
1997	^e	^e	^e	^e	^e
1998	^e	^e	^e	^e	^e
Previous					
5-year					
Average	80	179	119	63	62
Percent Change					
From Previous					
5-year					
Average	--	--	--	--	--

^a Sample size for total wings collected.

^b Females = adults + yearlings.

^c Adults = adults + yearlings.

^d Sample size for total adult and yearling female wings collected.

^e No data available.

Table 12. Sage grouse production in the Holbrook (Curlew) unit of the Southeast Region based on wing collections, 1984-1998.

Year	N ^a	Juv.:100 Females ^b	Juv.:100 Adults ^c	N ^d	Percent Unsuccessful Females ^b
1984	e	e	e	e	e
1985	90	575	329	12	e
1986	e	154	216	e	37
1987	e	165	109	e	44
1988	78	152	95	25	e
1989	e	277	161	e	e
1990	77	183	133	24	e
1991	e	186	130	e	86
1992	135	127	82	48	85
1993	60	138	94	8	63
1994	112	380	211	14	64
1995	20	70	47	10	40
1996	28	229	133	e	100
1997	30	200	114	e	0
1998	22	143	83	e	71
Previous 5-year Average	50	203	120	--	53
Percent Change From Previous 5-year Average	-56	-30	-31	--	+34

^a Sample size for total wings collected.

^b Females = adults + yearlings.

^c Adults = adults + yearlings.

^d Sample size for total adult and yearling female wings collected.

^e No data available.

Table 13. Sage grouse production in the Bear Lake unit of the Southeast Region based on wing collections, 1986-1998.

Year	N ^a	Juv.:100 Females ^b	Juv.:100 Adults ^c	N ^d	Percent Unsuccessful Females ^b
1986	e	59	93	e	e
1987	e	216	146	e	15 ^e
1988	38	383	153	6 ^e	e
1989	e	334	191	e	e
1990	126	282	168	28	e
1991	e	135	93	e	57
1992	105	177	110	31	74
1993	26	767	767	8	33
1994	35	244	169	5	80
1995	19	186	144	7	43
1996	18	1,400	350	e	100
1997	14	200	133	e	25
1998	8	133	100	e	33
Previous 5-year Average	22	559	313	--	56
Percent Change From Previous 5-year Average	-64	-76	-68	--	-41

^a Sample size for total wings collected.

^b Females = adults + yearlings.

^c Adults = adults + yearlings.

^d Sample size for total adult and yearling female wings collected.

^e No data available.

Table 14. Sage grouse hunter success and harvest in the Southeast Region obtained from check stations and the telephone survey, 1984-1998.

Year	Bag and Possession Limit	Check Station				Telephone Survey		
		Hunters	Birds	Birds Per Hunter	Hours Per Bird	Hunters	Birds	Birds Per Hunter Day
1984	1/1	53	21	0.4	7.7	733	1,817	0.9
1985	3/6	274	113	0.4	11.3	1,550	4,630	1.0
1986	3/6, 2/4 ^a	264	177	0.7	7.6	1,848	7,082	1.3
1987	3/6, 2/4	341	450	1.3	3.4	2,002	6,076	1.3
1988	3/6, 2/4	393	491	1.2	4.3	1,862	7,962	1.1
1989	3/6, 2/4	402	283	0.7	7.1	1,922	4,118	0.7
1990	3/6	344	498	1.4	3.2	2,073	6,004	0.8
1991	3/6	314	153	0.5	9.7	2,063	3,743	0.6
1992	3/6	168	52	0.3	15.1	2,242	5,077	0.6
1993	3/6	112	13	0.1	40.7	3,123	4,332	0.4
1994	3/6	167	109	0.6	7.6	2,528	4,401	0.5
1995	3/6	122	35	0.3	15.5	1,462	2,559	0.5
1996	2	^b	^b	^b	^b	^b	^b	^b
1997	2	^b	^b	^b	^b	^b	^b	^b
1998	2	^b	^b	^b	^b	^b	^b	^b
Previous 5-year Average		227	52	0.3	21.3	2,371	3,764	0.5
Percent Change From Previous 5-year Average		--	--	--	--	--	--	--

^a From 1986 to 1989, bag and possession limits for areas off the Big Desert were smaller than those on the Desert.

^b No data available.

Table 15. Sharp-tailed grouse production in the Southeast Region based on wing collections, 1986-1998^{a,b}.

Year	Juv.:100 Adults	N
1986	97	130
1987	99	238
1988	76	147
1989	118	219
1990	69	210
1991	105	187
1992	96	382
1993	110	187
1994	173	289
1995	58	190
1996	126	224
1997	163	227
1998	130	379
Previous 5-year Average	126	223
Percent Change From Previous 5-year Average	+3	+70

^a Data not available prior to 1986.

^b Included data from Malad City Area and Pocatello Creek.

Table 16. Maximum number of sharptail grouse counted on lek routes^a in Oneida, Power and Bannock Counties, Southeast Region, 1995-1998.

Year	Arbon Route	Curlew Route	Pocatello V. Route	Rockland Route	Downey Route
1995	92	23	78	50	^b
1996	43	46	31	53	84
1997	36	57	46	24	68
1998	^b	40	46	^b	72
Previous 5-year Avg.	5742	52	42	76	
Percent Change From Previous 5-year Avg.	--	+5	-12		-5

^a Arbon route leks: Symantha=s, Ag, Howe, Cow, 1994.

Curlew route leks: Duffin, Vanderhoff, Hill, Bowen, N-13.

Pocatello Valley route leks: Thorpe, Davis, Jensen, N. Peterson, Peterson, Marble.

Rockland route leks: No Name, Roy, Benson, Quiet, Daryl.

Downey route leks: 1B021, 1B026, 1B027, 1B028, 1B033, 1B036, 1B039

^b No data available.

Table 17. Sharp-tailed grouse hunter success and harvest in the Southeast Region, 1984-1998.

Year	Bag and Possession Limit	Hunter Report Cards				Telephone Survey		
		Hunters	Birds	Birds Per Hunter	Hours Per Bird	Hunters	Birds	Birds Per Hunter Day
1984	1/1 ^a	b	b	b	b	307	285	0.4
1985	3/6 ^a	b	b	b	b	219	456	1.0
1986	2/2	b	b	b	b	331	495	0.9
1987	2/2	117	157	1.3	2.9	64	2,118	2.0
1988	2/4	99	133	1.3	3.0	361	2,286	1.1
1989	2/4	144	166	1.2	3.1	573	1,448	0.8
1990	2/4	167	238	1.4	2.5	1,152	4,632	1.2
1991	2/4	162	198	1.2	3.2	1,127	4,864	1.1
1992	2/4	284	408	1.4	3.4	1,601	6,198	1.2
1993	2/4	158	184	1.2	3.4	2,721	5,071	0.5
1994	2/4	b	b	b	b	2,042	4,570	0.6
1995	2/4	b	b	b	b	1,706	3,899	0.6
1996	2/4	b	b	b	b	b	b	b
1997	2/4	b	b	b	b	b	b	b
1998	2/4	b	b	b	b	b	b	b
Previous 5-year Average		--	--	--	--	--	--	--
Percent Change From Previous 5-year Average		--	--	--	--	--	--	--

^a In aggregate with sage grouse.

^b No data available.

Table 18. Gray and Chukar partridge harvest information in the Southeast Region, 1984-1998. Results are from telephone surveys.

Year	Gray Partridge			Chukar Partridge		
	Hunters	Birds	Birds Per Hunter Day	Hunters	Birds	Birds Per Hunter Day
1984	a	a	a	a	a	a
1985	564	2,416	0.1	339	463	0.3
1986	414	1,257	0.4	400	1,164	0.7
1987	445	933	0.5	139	243	1.9
1988	582	4,938	1.1	266	854	0.8
1989	388	933	1.1	374	366	0.5
1990	944	3,854	0.8	400	1,164	0.7
1991	1,200	8,622	1.4	294	822	0.8
1992	1,204	6,500	1.1	430	2,540	1.0
1993	1,946	6,308	0.7	835	2,010	0.6
1994	1,180	4,814	0.9	656	1,592	0.6
1995	1,076	3,737	0.7	568	1,442	0.5
1996	a	a	a	a	a	a
1997	a	a	a	a	a	a
1998	a	a	a	a	a	a
Previous 5-year Average	--	--	--	--	--	--
Percent Change From Previous 5-year Average	--	--	--	--	--	--

^a No data available.

Table 19. Turkey harvest information in the Southeast Region obtained from telephone survey, 1984-1998^a.

Hunt	No. of Hunts	Permits	Hunters	Birds Taken	Total Days Hunted	Success Rate	Days per Bird
1984							
Controlled	2	20	20	4	84	20%	21
1985							
Controlled	2	20	15	3	106	20%	35
1986							
Controlled	6	20	14	2	35	14%	69
1987							
Controlled	9	45	45	11	132	24%	12
1988							
Controlled	9	45	32	6	139	13%	23
1989							
Controlled	9	45	39	5	b	11%	b
1990							
Controlled	5	30	20	6	154	20%	26
1991							
Controlled	2	10	10	3	45	30%	15
1992							
Controlled	2	10	10	4	40	40%	10
1993							
Controlled	2	10	10	1	45	10%	45
1994							
Controlled	2	20	20	6	72	30%	8
1995							
Controlled	6	30	30	6	100	20%	6
1996							
Controlled	6	30	30	15	100	50%	12
1997 ^c							
Controlled	6	60	44	32	110	73%	3
1998							
Controlled	8	175	154	107	573	70%	3

^a No turkey hunts were held in the Southeast Region prior to 1984.

^b No data available.

^c No data for Hunt #68A-3.

Table 20. Turkey transplant history for the Southeast Region, 1982-present.

Year	Subspecies ^a	Release Site	Number Birds Released	New or Supplemental Release
1982	R	Snake River	36	New
1984	R	Snake River	28	New
1990	M	Snake River	14	Supplemental
1993	M	Bear River	20	New
1994	M	Snake River	64	Supplemental
	M	Bear River	32	Supplemental
1999	Unknown	Deep Creek, Bear River	15	Supplemental

^a E - Eastern; M - Merriams; R - Rio Grande.

Table 21. Mourning dove population trends and harvest, Southeast Region, 1984-1998.

Year	Coo Count Routes		Telephone Survey		
	Routes	No. Doves Heard/Mile	Hunters	Doves	Doves/Hunter Day
1984	3	1.5	455	824	1.8
1985	2	0.4	452	1,358	0.7
1986	3	0.4	221	453	1.3
1987	2	0.6	292	1,030	1.0
1988	3	0.9	97	122	1.5
1989	2	1.0	266	708	1.4
1990	1	0.8	908	9,865	1.8
1991	2	0.8	397	1,733	1.9
1992	3	2.0	882	15,061	2.1
1993	3	0.7	2,628	25,326	2.2
1994	3	0.9	2,060	16,313	2.7
1995	3	0.6	1,848	15,150	2.1
1996	3	0.4	^a	^a	^a
1997	3	0.7	^a	^a	^a
1998	3	0.5	^a	^a	^a
Previous 5-yr. Avg.	3.0	0.7	2,179	18,930	2.3
Percent Change From Previous 5-yr. Avg.	0	-29	--	--	--

^a No data available.

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Upland Game Surveys and</u>
PROJECT:	<u>W-170-R-23</u>		<u>Inventories</u>
SUBPROJECT:	<u>6</u>	STUDY NAME:	<u>Upland Game and</u>
STUDY:	<u>II</u>		<u>Waterfowl Population</u>
JOB:	<u>1</u>		<u>Status and Trends</u>

PERIOD COVERED: April 1, 1998 to March 31, 1999

UPLAND GAME - UPPER SNAKE REGION

PHEASANT

Population Surveys

General observations suggest pheasant populations remain extremely low in the region. Three pheasant brood routes were reestablished in the region in 1990. The routes were located in some of the region's best pheasant habitat; however, no pheasant were ever counted on the routes (Table 1). Several habitat improvement projects (HIP) have also been established along the routes. The routes have not been counted since 1995. Given the inherent variability caused by numerous factors in the brood route survey technique, it is doubtful any meaningful population density estimates can be attained from these counts.

Two pheasant rooster crowing routes were established in 1996 (Table 2). One route is within the region's special pheasant habitat management area (Lewisville-Menan area) and the other route is in the Labelle area. The Labelle route is used as a control to monitor changes in breeding pheasant density resulting from habitat improvements within the special pheasant habitat management area. Methodology follows Trautman (1982 pg. 70-71). Routes were counted three times at approximately weekly intervals from 45 minutes before sunrise to 30 minutes after sunrise. Each route has 20 stops approximately one mile apart. At each stop, the number of rooster pheasant heard crowing during a 2-minute listening period is recorded. Table 2 presents the average number of crows heard per stop for the peak count.

Harvest Characteristics

Two pheasant hunters were checked at the Sage Junction check station during the opening weekend of the pheasant season in 1998; neither hunter had harvested a pheasant (Table 3).

The statewide telephone survey provided data on pheasant harvest and hunting effort from 1983 through 1996. No telephone survey has been conducted since the 1996 season. (Table 3).

Habitat Conditions

Pheasants are distributed at low densities on and around agricultural land in the Upper Snake Region. Pheasant habitat is marginal due to periodic severe winters and agricultural practices inconsistent with quality pheasant habitat. There are patches of habitat supporting a few pheasants scattered throughout the area including Howe, Montevue, Mud Lake WMA, Market Lake WMA, and the agricultural lands associated with the Snake River Plain. Habitat is restricted to fence rows, irrigation ditches, riparian areas, and waste areas. A common practice is to burn these patches of cover in the spring prior to nest initiation. Hence, available nesting cover occurs as widely dispersed small patches of residual cover, hay fields, and fall-seeded small grain.

Three corn food plots of approximately 4-5 acres each were contracted in the special pheasant habitat management area in the spring of 1998 and allowed to stand until March 1999.

Release of Pen-Reared Pheasants

Two hundred twenty-five game farm pheasant cocks were released at Mud Lake WMA and 225 were released at Market Lake WMA in 1998. There were four releases during the hunting season starting October 19 and continuing through November 9. An additional 60 pheasants were released at Market Lake WMA for a special youth pheasant hunt held October 3 and 4, 1998. Hunters hunting on WMAs where game farm pheasants were released were again required to obtain a WMA pheasant permit in 1998. Two hundred fifty-seven permits were sold by vendors in Bonneville, Butte, Clark, Fremont, Jefferson, Madison, and Teton Counties in 1998 and 249 in 1997. The Department requested that hunters return the cards after the season closed; however, the return rate was too low to estimate harvest on released pheasants. Hunters returning cards in 1994 reported harvesting 108 (42%) of the pheasants released at Market Lake and 30 (12%) released at Mud Lake WMA.

Management Implications

Periodic severe winters and low recruitment restrict pheasant numbers in the Upper Snake Region. Although winter habitat improvement projects are being implemented in the region, little has been done to improve nesting habitat.

Pheasant populations have been low since 1983. Harsh winters in 1983-84 and 1984-85 started the decline. Although several winters since then have been unusually mild, populations have not recovered. Low recruitment, winter mortality, and limited habitat are the most likely factors holding densities to low levels. Research needs to be done in the Upper Snake Region to identify what can be done to increase recruitment.

FOREST GROUSE

Population Surveys

Forest grouse populations are not intensively sampled in the Upper Snake Region because populations are patchy in distribution, making it difficult to efficiently obtain adequate sample sizes from enough areas to be meaningful.

An estimate of forest grouse production could be obtained by examining wings. However, adequate sample sizes have not been collected at check stations.

Harvest Characteristics

Harvest information has been collected from the statewide telephone survey and from check stations operated during the opening weekend of the sage grouse season. Most of the forest grouse checked are taken in conjunction with sage grouse hunting. Drastic reductions in sage grouse hunting opportunity has occurred beginning in 1996 as a result of research-induced regulation changes. Consequently, 1998 hunter numbers were only a fraction of historical levels (29% of 1988-1995 average). Yet, 47 blue grouse and 3 ruffed grouse were checked in 1998 (Table 4). Check station data have been used to calculate an index of blue grouse per 100 hunters checked on the opening weekend of sage grouse season. The number of blue grouse in the bag of sage grouse hunters provides a rough index to their abundance in or near areas inhabited by sage grouse. The number of blue grouse per 100 hunters in 1998 was well above the ten-year average. Historical telephone survey harvest data are presented in Table 4. However, no telephone survey was conducted on the 1997 or 1998 seasons.

Climatic Conditions

Spring weather conditions during 1998 were cool and wet. Precipitation was well above average from March through May. Favorable brood rearing conditions should have been available for chicks surviving the early cool wet conditions. Limited wing data indicated only fair production, which appeared to be spottily distributed around the region.

Management Implications

The forest grouse harvest has fluctuated widely in the past 10 years (Table 4). The number of birds checked has varied between 8 and 70 with a mean of 32. Both the check station and telephone survey (prior to 1997) data indicate that forest grouse numbers fluctuate; however, the two data sets do not correspond in annual fluctuations (Table 4).

SAGE GROUSE

Distribution Surveys

Sage grouse are distributed throughout the Upper Snake Region in sagebrush grasslands. In 1994 the region set up a schedule to begin conducting lek distribution surveys. That portion of the Sand Creek desert between the Egin-Hamer Road and the north boundary of the U.S. Sheep Experiment Station was surveyed in 1994 and 18 leks were located. Most of the Birch Creek drainage was surveyed in 1995 and 3 leks were located in the upper end of the valley. In 1997 the lower Big Lost River Valley south of Antelope Creek between Champagne Creek and Highway 93 was surveyed with a Bell G47 helicopter and 3 leks were found. Additionally, ground surveys in the Big Lost River valley documented sage grouse still occupying the Wood Canyon lek and 3 leks in the Nichols Reservoir-Champagne Creek area. However, leks found in the Appendicitis Hills-Timber Creek area in the early 1980s were not occupied in 1997. Three new leks were also found in the Antelope Creek drainage. Ground survey efforts in the upper Big Lost River valley were conducted in 1997 and 1998.

Population Trend

Fifteen lek routes were counted in 1998. Three of these routes were new in 1997 and 2 were new in 1998. Of the nine traditional routes, four had more grouse than 1997 (Table 5); however, 10-year averages continue to decline. The number of grouse counted on routes fluctuates from year to year due to previous year's production and other factors relative to counting. Two routes, lower Birch Creek and upper Birch Creek, have consistently had fewer grouse than historical counts. The reduced number of grouse counted on the Birch Creek routes may be due to a reduction in winter habitat caused by land conversion to agricultural crops in the Reno Point to Montevue area. Since 1988 the Medicine Lodge route has also had fewer grouse than in previous years. This may be due to the extensive acreage of sagebrush manipulation that occurred in the 1980s. The Lidy route is also being impacted by agricultural encroachment. Eight of the 16 leks on the Lidy route have been cleared of sagebrush since the early 1980s; the leks are now in alfalfa or fallow. The Jacoby route, which lost all the leks that existed in 1983, has had an increase of grouse since 1994. This suggests that the sagebrush habitat in the area lost in the extensive 1982 Sheep Station wildfire is beginning to meet sage grouse nesting/brood rearing needs.

Production

The juvenile to adult female ratio is determined from hunter harvested sage grouse wings. These data indicate good, but below average production again in 1998 (Table 6); however, sample size since 1996 has been inadequate to get a good estimate of production.

Seasons

The sage grouse season was changed in 1996 from what had existed the previous 5 years; since 1996 the season has remained the same. Beginning in 1990 the sage grouse season was 30 days

long with a 3-sage grouse bag limit and 6-sage grouse possession limit. In 1996 three different season structures occurred in the region. Area 1: Bonneville County west of Interstate 15, Butte County south of US Highways 20/26 and 22/33 between Mud Lake and the Arco-Minidoka Road, the entire Birch Creek drainage, Clark County within the Birch Creek Drainage, Jefferson County west of Interstate 15 and south of State Highway 33, and Lemhi County within the Birch Creek drainage were closed to all sage grouse hunting; Area 2: Bonneville County east of Interstate 15, Clark County EXCEPT that portion within the Birch Creek drainage, Fremont County, Jefferson County east of Interstate 15 and that part north of State Highway 33 and west of Interstate 15, Madison County and Teton County had a seven-day season with a 1-sage grouse bag and 2-sage grouse possession limit; and Area 3: Butte County south of Highway 20/26 and west of the Arco-Minidoka Road, Butte County north of US Highway 20/26 and State Highway 33 not within the Birch Creek drainage and Custer County EXCEPT that portion within the Salmon River drainage upstream from and including Valley Creek had a 23-day season with a 2-sage grouse bag and 4-sage grouse possession limit.

The reasons for these season changes were to (1) implement research to evaluate whether hunting mortality is compensatory or additive, (2) evaluate the effects of habitat fragmentation on recruitment, (3) identify causes for low recruitment, and (4) address public concern about declining sage grouse numbers.

Harvest Characteristics

Three check stations monitor harvest characteristics. Wing barrels in the Tex Creek area have not collected an adequate sample from this harvest area. Check station data since 1995 reflects the reduced bag/possession limits with fewer hunters afield and fewer grouse harvested on opening weekend (Table 7). Birds per hunter day increased a little and hours per bird harvested decreased a little from 1997, indicating better hunting conditions in 1998 (Table 7).

Climatic Conditions

The spring weather conditions in 1998 were wetter and cooler than normal. Above normal precipitation occurred through June with near normal precipitation throughout the rest of the summer. This weather pattern provided better than average nesting and brood rearing conditions. Moisture and forage conditions prior to and during the hunting season resulted in birds being widely distributed.

Habitat Conditions

Sage grouse habitat continues to be lost to agriculture, wildfire, prescribed fire, and herbicide treatments throughout the region. Extensive acreage of sagebrush was lost to wildfires on and around the Idaho National Engineering and Environmental Laboratory (INEEL) during the summer of 1996. Reduced numbers of sage grouse resulting from these habitat losses are expected to occur for the next several years. Wildfires were not a problem in 1998.

Management Studies

A research project was initiated in August 1997 to identify and evaluate causes of juvenile sage grouse mortality. Information gained from this research will be published in a research progress report.

Management Implications

Sage grouse populations fluctuate from year to year relative to weather conditions and, on longer term, from habitat alterations. Harvest is dependent upon hunting conditions on opening weekend, bag and possession limits, season length, and grouse populations. Although lek distribution surveys had not been conducted in the region for several years, a schedule to begin surveying sagebrush habitats was started in 1994; however, limited funding has prevented continuing these on an annual basis. The Bureau of Land Management and Forest Service have been able to contribute some money for these surveys through challenge cost-share dollars. Long-term monitoring trends show population declines throughout the region, with the greatest declines in Birch Creek, Clark County, and the Sand Creek desert. Both quantity and quality of habitat have declined due to agriculture encroachment, sagebrush manipulation, loss of wetlands, and livestock grazing. Regional personnel are actively involved with other agencies and private landowners in planning sagebrush manipulation projects to minimize impacts to sage grouse habitat; however, continued population declines indicate more needs to be done to reduce sagebrush conversion and fragmentation and to improve grazing management.

A Local Working Group of agency personnel, sportsman, ranchers, and landowners from the Upper Snake Region was formed in November 1998 to address sage grouse declines. Fifty to sixty members have been meeting on a bi-weekly or monthly basis. To date meetings have been educational, addressing topics relative to sage grouse ecology, seasonal habitat needs, population trends and seasonal movements within the Upper Snake Region, and sagebrush ecology.

SHARP-TAILED GROUSE

Population Surveys

Wings were collected at wing barrels from the Sand Creek and Tex Creek areas throughout the season. Analysis of wings indicated that the 1998 production was slightly below the 5-year average (Table 8).

Population Trend

Two sharp-tailed grouse lek routes are surveyed in the Upper Snake Region (Table 9). The number of grouse attending leks in 1998 increased sharply compared to 1997 and was above the 10-year average for both routes.

Harvest Characteristics

Check Stations

Trends in harvest of sharp-tailed grouse have historically been monitored through the Red Road check station on opening weekend of the sage and sharp-tailed grouse seasons (Table 10). However, in 1998 the sharptail opener was delayed by two weeks to October 1. Consequently, no check station-derived harvest data was obtained on sharp-tailed grouse in 1998. In addition, the telephone survey was not conducted to survey upland game hunters again in 1998. The only harvest data available for sharptails came from the wing barrels in the Sand Creek and Tex Creek areas. This effort resulted in the collection of 25 wings from Sand Creek WMA and an additional 52 wings collected in wing barrels around the Tex Creek Wildlife Management Area (similar to the 59 in 1997 and 56 in 1996).

Telephone Survey

Telephone survey data (Table 10) were not collected on the 1997 or 1998 seasons.

Climatic Conditions

Weather conditions during the 1998 production season were cool and wet but should have provided for good brood rearing conditions for those chicks surviving the cool, wet nesting season.

Habitat Conditions

Lands enrolled in the Conservation Reserve Program (CRP) in Bonneville, Bingham, Teton, Madison, and Fremont Counties may be providing some benefits to sharp-tailed grouse.

Management Implications

Sharp-tailed grouse production and/or recruitment were very low from 1992 through 1994. Unfavorable weather conditions may have been responsible. Drought conditions prevailed throughout the spring and summer in 1992, while 1993 and 1994 were abnormally cool and wet. Production, based on wing analysis, improved markedly from 1995 through 1998. Birds attending leks on the Sand Creek and Grassy routes increased markedly in 1998, up from the extremely low numbers observed in 1997. The current lack of any meaningful harvest data is a concern.

Additions to Department-owned parcels of habitat are being sought for the Sand Creek and Tex Creek WMAs. Lands enrolled in CRP may continue to provide additional habitat in the future; however, population response has not been dramatic as noted in some other regions.

CHUKAR PARTRIDGE

Population Surveys

No production data were collected during this reporting period. However, good chukar and gray partridge numbers were observed while conducting 1998 big game winter surveys in the lower Big and Little Lost River valleys and Willow Creek.

Harvest Characteristics

Table 11 presents the chukar harvest through opening weekend check stations (check stations are operated primarily for sage grouse hunters) for the past ten years. A telephone survey was not conducted on the 1997 or 1998 seasons.

Management Implications

Chukar partridge are not numerous in the Upper Snake Region. Habitat is limited by snow depth, duration of snow cover, and water availability. Chukar have been more numerous and widely distributed in the past, but severe winters have reduced populations and restricted distribution to the most favorable sites. Remnant populations occur in the lower Big Lost, lower Little Lost, and lower Birch Creek valleys. These populations are well established but are susceptible to periodic weather-related declines, particularly in the Big Lost River valley.

Although operated primarily to check sage grouse hunters, opening weekend check stations also provide trend information on chukar harvest (Table 11). Results indicate that relatively few chukars are harvested in the Upper Snake Region. In mid-September birds are often well dispersed and difficult to find. Early winter snowstorms can concentrate birds along roads and around ranches, creating social problems with continued hunting. For this reason the chukar partridge season has closed in mid-December since 1986.

GRAY PARTRIDGE

Population Surveys

No population trend data were collected for this reporting period. However, hunters reported good gray partridge hunting around the agriculture land west of Interstate 15 between Idaho Falls and Roberts in 1998, and good numbers of gray partridge were observed during 1998 big game winter surveys. The trend in gray partridge populations is indexed by the number harvested per hunter on the opening weekend, measured at check stations designed to sample sage grouse harvest. Seven gray partridge were checked in 1998 (Table 12).

Harvest Characteristics

Harvest information is gathered from check stations operated at Sage Junction, Highway 20, and Red Road during opening weekend of the sage grouse season. Table 12 shows the trend in gray

partridge checked in the Upper Snake Region. However, it should be noted that there was a dramatic reduction in hunter participation in 1996 through 1998 as a result of severely restricted sage grouse hunting opportunity in the region.

Habitat Conditions

Gray partridge are distributed throughout the Upper Snake Region at lower elevations, but densities are relatively low. In drier years the birds concentrate around moist areas and hay fields, but have a more general distribution in years with normal precipitation. Nesting occurs in and around hay or grain fields. Although gray partridge are capable of surviving winter conditions better than chukar partridge, severe winters cause increased mortality.

Management Implications

Habitat improvement projects sponsored through the HIP program and Pheasants Forever indirectly benefit gray partridge. Cost-share seeding of grass/forb mixtures provided by the CRP also benefit gray partridge in some locations.

WILD TURKEY

Population Surveys

There were no population surveys done in 1998 and no landowner or sportsmen reports of turkey observations.

Harvest Characteristics

There was no hunt in the region in 1998.

Climatic Conditions

The 1998-1999 winter was relatively mild with near normal snow accumulation in the area where turkeys have been released along the Snake River cottonwood habitat. Spring 1998 river flows were below normal, which should have provided good nesting conditions.

Habitat Conditions

Turkey habitat in the region may be marginal for winter foraging, but no studies have been done to evaluate habitat quality.

Management Implications

The Archer flock did well following the initial release in 1984. Landowner, sportsmen, and Department personnel reports indicated good production and the flock grew both in number of birds and area occupied. However, since 1987 the population appears to have declined and may

no longer exist. Landowners do not report seeing turkeys anymore and no broods have been observed since 1988. The reasons for this decline are largely unknown.

The initial release in the Deer Park area in 1984 failed. A supplemental release of 12 turkeys was made in 1988. This release maintained the original release number for a few years, but appears to no longer exist.

Fifty-nine turkeys were released on the Big Lost River below Mackay in February and March 1999.

Turkey habitat in the Upper Snake Region was evaluated relative to establishing transplant priorities throughout the state in 1991. Riparian turkey habitat in the Upper Snake Region ranked 11 through 14 relative to statewide priority.

Research is critically needed on the ecology, recruitment, habitat needs, and movements of the introduced river bottom turkeys in southeast Idaho. Several of the introduced populations have shown similar trends of not establishing viable populations or increasing for a few years and then becoming extinct. Without investment into research to determine the reasons for the poor performance, it is unlikely that huntable populations can be sustained in the region.

MOURNING DOVE

Population Characteristics

Data from dove coo count routes are reported directly to the U.S. Fish and Wildlife Service.

Harvest Characteristics

Eleven doves were checked at the Sage Junction, Red Road, and Highway 20 check stations on the opening weekend of the 1998 sage grouse season. A telephone survey was not done on the 1997 or 1998 dove seasons.

Management Implications

The mourning dove is one of the most common nesting game birds in the Upper Snake Region. However, in most years the majority of birds have left the area prior to the season opening on September 1.

Management efforts are aimed at reducing sportsmen/landowner conflicts, and improving habitat indirectly through HIP windbreaks, guzzlers, and CRP seedings. We will continue to take advantage of harvest opportunities as allowed by federal regulations.

RABBITS AND HARES

Rabbits are a low priority species in the Upper Snake Region. No telephone survey was conducted on the 1997-1998 or 1998-1999 rabbit seasons. In addition to the recreational opportunity provided by hunting, rabbits also serve as a prey base for predators. No production or population information is collected on rabbit or hare populations.

CROWS

Crows are not managed in the Upper Snake Region. No population, production, or harvest data are collected. Hunting pressure is virtually nonexistent.

LITERATURE CITED

Trautman, Carl G. 1982. History, ecology and management of the ring-necked pheasant in South Dakota. Bulletin No. 7. South Dakota Department of Game, Fish and Parks, Pierre. 118 pp.

Table 1. Pheasant population and production in the Upper Snake Region, 1990-1998.

Year	Winter Sex Ratio ^a	N ^b	Brood Routes				
			Routes & Miles Counted	Birds Per Mile	Percent Unsucc. Females	Juv.:100 Adult Females	Average Brood Size
1990	N/C		3/60	0			
1991	N/C		3/60	0			
1992	N/C		3/60	0			
1993	N/C		3/60	0			
1994	N/C		3/60	0			
1995	N/C		3/60	0			
1996	N/C		N/C	-			
1997	N/C		N/C	-			
1998	N/C		N/C	-			

^a Hens per cock.

^b Sample size.

Table 2. Peak pheasant crow count comparison trend for the Lewisville and Labelle routes.

Year	Average Number of Calls/Stop	
	Lewisville	Labelle
1996	0.50	0.50
1997	1.20	0.40
1998	0.95	0.45

Table 3. Pheasant hunter success and harvest in the Upper Snake Region obtained from the Sage Junction check station (opening weekend) and the telephone survey, 1989-1998.

Year	Check Station				Telephone Survey ^a		
	Hunters	Birds	Birds Per Hunter Day ^b	Hours Per Bird	Hunters	Birds	Birds Per Hunter Day ^b
1989	47	9	0.19	15.5	1,502	2,023	0.37
1990	20	5	0.25	11.2	1,561	4,325	0.60
1991	10	0	-	-	765	1,441	0.57
1992	18	2	0.11	27.8	856	273	0.21
1993	8	0	-	-	588	928	0.43
1994	3	0	-	-	356	487	0.33
1995	2	0	-	-	487	487	0.26
1996	0	0	-	-	450	0	0.00
1997	7	0	-	-	- ^c	-	-
1998	2	0	-	-	- ^c	-	-
10-Year Average	12	2	-	-	-	-	-

^a Data from Bonneville, Butte, Clark, Fremont, Jefferson, Madison, and Teton Counties.

^b Total birds checked over total hunter days.

^c Telephone survey data not collected on the 1997 or 1998 seasons.

Table 4. Forest grouse hunter success and harvest in the Upper Snake Region obtained from check stations on opening weekend of the sage grouse season and the telephone survey 1989-1998.

Year	Check Stations				Blue Grouse Per 100 Hunters	Telephone Survey ^a		
	Hunters	Number of Grouse				Hunters	Birds	Birds Per Hunter Day
		Blue	Ruffed	Total				
1989	2,150	67	3	70	2.95	1,688	9,295	1.00
1990	2,303	40	4	44	1.74	1,930	6,378	0.71
1991	2,250	38	0	38	1.69	1,917	7,102	1.28
1992 ^b	1,561	7	7	14	0.45	2,055	12,914	0.89
1993 ^c	1,565	4	4	8	0.26	4,639	12,029	0.55
1994	1,634	14	12	26	0.86	4,027	16,239	0.75
1995	1,048	20	0	20	1.91	3,432	11,474	0.52
1996	364	24	2	26	6.59	1,642	4,927	0.58
1997	455	15	5	20	3.30	- ^d	- ^d	- ^d
1998	524	47	3	50	8.97	- ^d	-	-
10-Yr. Avg.	1,385	28	4	32	2.02	-	-	-

^a Data from Bonneville, Butte, Clark, Fremont, Jefferson, Madison, and Teton Counties.

^b A toxic chemical spill on I-15 on opening day 1992 resulted in some hunters being rerouted and missed by the Sage Junction check station.

^c New telephone survey methodology employed beginning in 1993 (results not directly comparable to previous results).

^d Telephone survey data not collected on the 1997 or 1998 seasons.

Table 5. Male sage grouse counted on Upper Snake Region lek routes 1989-1998.

Route	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	10-Yr. Avg.
L. Birch Cr.	42	43	56	28	18	29	18	6	16	25	28
Red Road	75	77	61	106	34	53	40	69	74	52	64
Jacoby	14	N/C	38	35	49	71	77	90	67	159	67
Med. Lodge	53	42	71	67	25	67	50	35	32	96	54
Little Lost	102	90	126	87	57	57	79	48	77	67	79
Lidy	N/C	183	230	67	100	80	62	26	72	71	99
Plano	151	181	296	182	144	79	106	48	106	131	142
U. Birch Cr.	13	26	3	0	0	0	4	8	13	11	8
Crooked Cr.	59	85	106	90	58	120	105	61	120	112	92
Market Lake	N/C	31	N/C	N/C	N/C	N/C	N/C	N/C	26	31	29
Table Butte ^a									70	185	128
Stibal Road ^a									57	96	77
INEEL ^a									26	58	23
Lower B.Lost ^b										62	62
Antelope Cr. ^b										31	31
Totals	509	758	987	662	485	556	541	401	756	1,187	684
Avg. per route counted	64	84	110	74	54	62	60	45	58	79	66

^a New routes established in 1997.

^b New routes established in 1998.

Table 6. Sage grouse production in the Upper Snake Region based on wing collections, 1989-1998.

Year	Juveniles:100 Females	Juveniles:100 Adults
1989	239	162
1990	279	173
1991	168	103
1992	155	106
1993	224	150
1994	200	136
1995	138	106
1996 ^a	673	246
1997 ^a	212	164
1998 ^a	281	178
5-Year Average	301	166
Percent Change From Last Year	+33	+9

^a Inadequate sample sizes.

Table 7. Sage grouse hunter success and harvest in the Upper Snake Region obtained from check stations and the telephone survey, 1989-1998.

Year	Check Station					Telephone Survey		
	Bag and Possession Limit	Hunters	Birds	Birds Per Hunter Day	Hours Per Bird	Hunters	Birds	Birds Per Hunter Day
1989	3-6	2,150	2,202	1.02	4.63	3,541	10,521	1.35
1990 ^a	3-6	2,303	2,812	1.22	3.95	4,650	16,862	1.19
1991 ^a	3-6	2,250	1,944	0.86	5.51	4,385	10,593	1.07
1992 ^{a,b}	3-6	1,561	1,121	0.72	7.10	3,660	4,990	0.63
1993 ^a	3-6	1,565	889	0.57	8.66	6,586	10,979	0.58
1994 ^a	3-6	1,634	1,131	0.69	7.22	3,765	8,728	0.76
1995 ^a	3-6	1,133	492	0.43	10.74	3,148	5,422	0.60
1996 ^c	1-2 & 2-4	432	202	0.47	7.56	1,543	2,536	0.59
1997 ^c	1-2 & 2-4	455	248	0.55	7.28	- ^d	-	-
1998 ^e	1-2 & 2-4	524	336	0.64	6.53	- ^d	-	-
10-Yr. Avg.		1,401	1,138	0.81	6.92	-	-	-

^a Season extended from 16 to 30 days.

^b A toxic chemical spill on I-15 on opening day 1992 resulted in some hunters being missed at the Sage Junction check station.

^c Season closed area 1; 7-day season area 2, bag-possession limits 1-2; 23-day season area 3, bag-possession limits 2-4. Refer to Appendix I for area description.

^d Telephone survey data not collected on the 1997 or 1998 seasons.

^e Numbers do not include sharptail hunters because the sharptail season opened later (October 1) than the sage grouse season.

Table 8. Sharp-tailed grouse production in the Upper Snake Region based on wing collections, 1989-1998.

Year	Juveniles:100 Adults	N
1989	167	72
1990	173	227
1991	270	122
1992	39	124
1993	39	38
1994	103	59
1995	285	50
1996	242	65
1997	338	92
1998	221	77
5-Year Average	238	69
Percent Change From Prior Year	-35	-16
Percent Change From Previous 5-Year Average	+10	+27

Table 9. Sharp-tailed grouse lek route counts, Upper Snake Region, 1989-1998.

Year	Route – Maximum Count	
	Sand Creek	Grassy
1989	N/C	N/C
1990	25	12
1991	22	11
1992	N/C	26
1993	17	5
1994	24	5
1995	18	4
1996	22	4
1997	5	3
1998	39	13
10-Year Average	22	9

Table 10. Sharp-tailed grouse hunter success and harvest in the Upper Snake Region obtained from the Red Road check station and the telephone survey, 1989-1998.

Year	Check Station					Telephone Survey		
	Bag and Possession Limit	Hunters	Birds	Birds Per Hunter Day	Hours Per Bird ^a	Hunters	Birds	Birds Per Hunter Day
1989	2-4	696	65	0.09	9.1	362	953	1.4
1990	2-4	772	112	0.15	5.4	366	2,905	2.3
1991	2-4	826	94	0.11	6.4	555	653	0.6
1992	2-4	645	65	0.10	8.8	393	967	1.4
1993 ^b	2-4	537	8	0.01	23.2	2,041	1,856	0.2
1994	2-4	496	22	0.04	7.9	1,423	1,723	0.4
1995	2-4	406	28	0.07	11.7	1,239	1,076	0.3
1996	2-4	199	6	0.03	9.3	1,543	1,433	0.3
1997	2-4	213	33	0.15	7.2	- ^c	-	-
1998 ^d	2-4	-	-	-	-	-	-	-
10-Yr. Avg.		-	-	-	-	-	-	-

^a All species (not just sharp-tailed grouse).

^b New telephone survey methodology employed beginning in 1993 (results not directly comparable to previous results).

^c Telephone survey data not collected on the 1997 or 1998 seasons.

^d No check station data collected because the sharptail season opened later (October 1) than the sage grouse season.

Table 11. Trend in chukar partridge checked at Upper Snake Region check stations (Sage Junction, Red Road, and Highway 20) on opening weekend of sage grouse season, 1989-1998.

Year	Hunters	Chukar Partridge
1989	2,150	15
1990	2,303	5
1991	2,250	29
1992 ^a	1,561	10
1993	1,565	0
1994	1,634	9
1995	1,133	13
1996	432	9
1997	455	10
1998	524	19
10-Year Average	1,401	12

^a A toxic chemical spill on I-15 on opening day 1992 resulted in some hunters being rerouted and missed by the Sage Junction check station.

Table 12. Trend in gray partridge checked at Upper Snake Region check stations (Sage Junction, Highway 20, and Red Road) on opening weekend of sage grouse season, 1989-1998.

Year	Hunters	Gray Partridge	Birds Per Hunter
1989	2,150	7	.0033
1990	2,303	33	.0143
1991	2,250	28	.0124
1992 ^a	1,561	18	.0115
1993	1,565	7	.0045
1994	1,634	13	.0080
1995	1,133	2	.0018
1996	432	7	.0162
1997	455	11	.0242
1998	524	7	.0134
10-Year Average	1,401	13	.0093

^a A toxic chemical spill on I-15 on opening day 1992 resulted in some hunters being rerouted and missed by the Sage Junction check station.

**PROGRESS REPORT
SURVEYS AND INVENTORIES**

STATE:	<u>Idaho</u>	JOB TITLE:	<u>Upland Game Surveys and</u>
PROJECT:	<u>W-170-R-23</u>		<u>Inventories</u>
SUBPROJECT:	<u>7</u>	STUDY NAME:	<u>Upland Game and</u>
STUDY:	<u>II</u>		<u>Waterfowl Population</u>
JOB:	<u>1</u>		<u>Status and Trends</u>

PERIOD COVERED: April 1, 1998 to March 31, 1999

UPLAND GAME - SALMON REGION

PHEASANT

Population Surveys

Inactive. Pheasant populations in Custer and Lemhi Counties are restricted to small areas along major river bottoms. The limited populations have not been systematically surveyed in the past.

Harvest Characteristics

Telephone Survey

In addition to low overall numbers, pheasants exist primarily on private lands with limited public hunting access so harvest rates are low (Table 1). The data in Table 1 are based on small sample sizes so confidence intervals are large. Since 1996 telephone surveys have estimated only statewide harvests.

Check Stations

Inactive.

Climatic Conditions

The spring of 1998 through May had above average precipitation and average temperatures. Summer and early fall 1998 had slightly above normal precipitation and normal temperatures. Precipitation during the 1998-1999 winter was average, and temperatures were above normal.

Habitat Conditions

Pheasant habitat in Custer and Lemhi Counties exists along the lower Lemhi and Pahsimeroi Rivers and the main Salmon River near Challis and Salmon. The habitat complex consists

primarily of riparian areas, cattails, hay meadows, and cattle pastures. Cereal cropland is uncommon. This habitat complex has been stable from year to year and relatively unaffected by annual weather variations or changes in grain commodity markets. Rural residential housing has been increasing, resulting in increased land clearing and more feral pets.

Management Implications

Pheasants in the Salmon Region occur in limited geographic areas with stable habitat conditions and they receive light hunting pressure. Although opportunities exist for minor habitat improvements, overall pheasant distribution and numbers are not likely to change significantly in the foreseeable future. Harvest is currently limited by restricted access to private land, which is also unlikely to change.

Abstract

Small populations of pheasants exist in limited but stable habitats in the Salmon Region. Hunting pressure and harvest are relatively light.

QUAIL

Population Surveys

Inactive.

Harvest Characteristics

Hunting season is closed.

Climatic Conditions

The spring of 1998 through May had above average precipitation and average temperatures. Summer and early fall 1998 had slightly above normal precipitation and normal temperatures. Precipitation during the 1998-1999 winter was average, and temperatures were above normal.

Habitat Conditions

Little is known of Gambel's quail habitat in the region. However, there does not appear to be any major land use changes occurring which might threaten current quail habitat conditions.

Management Implications

A small, introduced population of Gambel's quail exists in isolated pockets within a few miles of the town of Salmon, Idaho. Little is known about this population. It is not currently hunted. A few broods are usually reported each year; the population appears stable. We do not anticipate

establishing a season on this population because it is relatively small, very unique, and has high nonconsumptive value.

Abstract

The small Gambel's quail population near Salmon appears to be stable but is not now, nor is it expected to become, large enough to support a harvest.

FOREST GROUSE

Population Surveys

No systematic surveys such as established brood routes or drumming counts are maintained for any of the forest grouse species. Information on forest grouse production has been obtained in the past from incidental brood counts made by Department personnel. However, sample sizes were small, plus the effort expended and areas sampled varied considerably between personnel and years. The resulting data had little management value and was discontinued during 1988.

Harvest Characteristics

Telephone Survey

As a group, forest grouse account for more hunters, more hunter days, and more birds harvested than any other upland game species (Table 2). Since 1996 telephone surveys have estimated only statewide harvests.

Check Stations

No check stations are maintained specifically for forest grouse. A few birds are checked incidentally in the field and at big game check stations.

Climatic Conditions

The spring of 1998 through May had above average precipitation and average temperatures. Summer and early fall 1998 had slightly above normal precipitation and normal temperatures. Precipitation during the 1998-1999 winter was average, and temperatures were above normal.

Habitat Conditions

Although forest grouse habitat may be altered by natural (fire, forest diseases) or human-related (logging, mining, and grazing) forces, the scale of such changes in the Salmon Region is generally not large enough to significantly impact overall grouse populations.

Management Implications

Forest grouse populations in the Salmon Region are primarily controlled by weather conditions rather than by habitat changes or hunter harvest. During 1986 the hunting season length was increased from 72 to 100 days. Despite 28 days more recreational opportunity, the forest grouse harvest declined from 1985 to 1986. After the mild winter and spring of 1987, the harvest increased by 50%, suggesting a substantial population increment apparently unaffected by the 1986 increase in season length.

Given that populations are relatively unaffected by harvest, management strategy should emphasize maximum recreational opportunity and minimal data collection efforts.

Abstract

Forest grouse populations, hunter effort, and harvest are primarily controlled by weather conditions during nesting and brood rearing. Minimal effort is therefore expended on production, habitat, or harvest data collection.

SAGE GROUSE

Population Surveys

Salmon Region personnel have significantly increased sage grouse lek data collection efforts in recent years, increasing the number of leks visited from one in 1979 through 1981 to a peak of 21 leks in 1988 (Figure 1). The data from individual leks or groups of leks show no clear pattern in terms of maximum male sage grouse attendance (Figs. 2-5). Spring lek counts in and of themselves are apparently not good indicators of the fall harvest.

Ten radio collars were attached to sage grouse at leks in the upper Lemhi River valley in the spring of 1997. Data collected on 4 female and 6 male sage grouse revealed high mortality rates in yearlings and adults. This may, however, be an artifact of small sample size. Female home ranges were smaller than male home ranges. In January two females left their winter ranges after a severe winter storm, one migrated 39 km to Lemhi, Idaho, and the other 80 km to the northern edge of the Snake River Plain. Both females showed high lek fidelity and successfully nested in spring 1998.

No sage grouse brood route counts have been conducted since 1988.

Sage grouse production in the Salmon Region is highly variable depending upon spring weather conditions (Table 3).

Harvest Characteristics

Telephone Survey

Hunter days and harvest reached a recent low in 1997 (Table 4). Since 1996 telephone surveys have estimated only statewide harvests.

Check Stations

Some hunters and birds from the Salmon Region are checked through the Howe and Sage Junction check stations (Table 4). In addition, roving field checks are made of sage grouse hunters during opening weekend (Table 5). The data from both types of field checks and from the telephone survey are somewhat correlated.

Climatic Conditions

The spring of 1998 through May had above average precipitation and average temperatures. Summer and early fall 1998 had slightly above normal precipitation and normal temperatures. Precipitation during the 1998-1999 winter was average, and temperatures were above normal.

Habitat Conditions

Documented loss of sage grouse habitat in the Salmon Region has been minimal in recent years. Habitat losses that do occur generally are caused by sagebrush conversion on private lands, via desert land entry on public lands, or via wildfire.

Management Implications

The Lemhi and Pahsimeroi Valleys are the most productive sage grouse areas in the region. The Lemhi Valley summer population is comprised of resident grouse and birds that migrate from wintering/breeding areas in lower Birch Creek to summer range in the Lemhi Valley (Canaille, J. W. 1982). We do not know if a similar condition exists in the Pahsimeroi Valley.

During 1986 and 1987, 196 sage grouse were transplanted into the Sawtooth Valley where populations had declined but there was no apparent significant habitat loss. Reproduction has been documented from these transplanted birds. No further transplants are planned for this area. Isolated reports of sage grouse were received during the summers of 1994 and 1996, and the fall of 1997, but the Sawtooth population does not appear to be thriving.

Sage grouse production is strongly dependent upon spring weather. Cold and wet conditions during hatching and brooding can significantly decrease production. Most sage grouse nesting habitat throughout the Salmon Region can be subject to severe spring weather. This is a normal phenomenon for relatively high elevation sage grouse range. A one- to two-year decline in productivity (indicated by harvest and lek counts) due to weather is not indicative of a declining population. Harvest management has little direct impact on populations.

Abstract

Sage grouse lek counts and harvest were down in 1992, and continued a downward trend through 1996. Harvest has continued to remain low through 1998. Several leks showed an increase in the number of birds in attendance in 1997 and 1998.

CHUKAR PARTRIDGE

Population Surveys

Inactive.

Harvest Characteristics

Telephone Survey

Chukar harvest and hunter participation varies dramatically from year to year depending upon weather conditions and the real or perceived availability of birds (Table 6). Since 1996 telephone surveys have estimated only statewide harvests.

Check Stations

Inactive.

Climatic Conditions

The spring of 1998 through May had above average precipitation and average temperatures. Summer and early fall 1998 had slightly above normal precipitation and normal temperatures. Precipitation during the 1998-1999 winter was average, and temperatures were above normal.

Habitat Conditions

Chukar habitats in the Salmon Region are generally stable. Some habitats may be threatened by spotted knapweed (*Centaurea maculosa*) invasion. Other habitats may be created or altered by wildfire. In areas where water may be limiting, Idaho Department of Fish and Game personnel have cooperated with the Bureau of Land Management and Forest Service to install guzzlers, primarily directed at other wildlife species but probably benefiting chukars as well.

The drought years of 1988-1994 may have exacerbated problems with domestic livestock grazing in riparian areas used for chukar brood rearing. The Department is continuing to work on cooperative agreements to fence such sites on public lands.

Management Implications

Chukar populations in the Salmon Region are primarily weather-dependent. Hunting pressure varies dramatically depending upon chukar population levels. However hunting has little, if any, direct impact on chukar populations.

Management direction should be to offer maximum recreational opportunity with minimal population monitoring efforts. Some habitat enhancement may be possible by fencing livestock out of selected riparian areas.

Abstract

Chukar numbers and hunting pressure are strongly weather dependent. Some potential still exists for habitat enhancement by fencing selected riparian brood-rearing areas.

GRAY PARTRIDGE

Population Surveys

Inactive.

Harvest Characteristics

Telephone Survey

Gray partridge represent a minor portion of the upland game hunter effort and bag in the Salmon Region (Table 7). Since 1996 telephone surveys have estimated only statewide harvests.

Check Stations

Inactive.

Climatic Conditions

The spring of 1998 through May had above average precipitation and average temperatures. Summer and early fall 1998 had slightly above normal precipitation and normal temperatures. Precipitation during the 1998-1999 winter was average, and temperatures were above normal.

Habitat Conditions

Although widely distributed, gray partridge habitat is not abundant in the Salmon Region. Nor is it likely to significantly increase since most agricultural lands are marginal for cereal crops and are better suited for livestock pasture or hay meadows.

Management Implications

Information on the distribution, population numbers, and harvest of gray partridge in the Salmon Region is minimal. Extensive efforts to collect more data are probably not justified.

Abstract

Gray partridge comprise a minor portion of the Salmon Region's upland game bird numbers. Due to limited, scattered habitat, gray partridge are not expected to increase significantly.

WILD TURKEY

Population Surveys

Small populations of turkeys have become established along the Lemhi and Salmon Rivers near the towns of Salmon and Challis. However, no systematic trend counts or brood route counts are conducted.

Harvest Characteristics

No season exists in the Salmon Region.

Climatic Conditions

The spring of 1998 through May had above average precipitation and average temperatures. Summer and early fall 1998 had slightly above-normal precipitation and normal temperatures. Precipitation during the 1998-1999 winter was average, and temperatures were above normal.

Habitat Conditions

Enough potential turkey habitat exists to support modest populations in the deciduous river bottoms along the Salmon River in the vicinity of the towns of Salmon, Challis, and North Fork. Virtually all of this habitat is privately owned.

Depredations

None reported.

Trapping and Transplanting

Merriam's turkeys were released in the Wagonhammer area of Unit 21A in 1970 and 1973. Although some production was reported, the transplant apparently failed and no turkeys survived this introduction. Twenty-five Merriam's turkeys (12 females, 13 males) were released in the Fourth of July drainage of Unit 21A on February 20, 1993. Since the release turkeys have been reported in Unit 21A from Gibbonsville to Carmen Creek with some broods produced.

Rio Grandes were first released on March 2, 1983, near the Shoup Bridge in Unit 28. Sixteen Rio Grande females were released but no males were included. On March 31, 1983, 2 male and 3 female Merriam's turkeys were also released in this area because male Rio Grandes could not be obtained. This population was supplemented by a transplant of 5 male Rio Grandes on March 7, 1985. An additional 15 Merriam's turkeys (12 females, 3 males) were also released in the area on January 31, 1991. There are consistent sightings from the release site and a small flock has been reported on the lower Lemhi.

Also, on January 31, 1991, 25 Merriam's turkeys (21 females and 4 males) were released along the Salmon River in Unit 36B three miles northeast of Challis. An additional 10 Merriam's turkeys (4 females, 6 males) were released in the area on February 20, 1993. This population appears to be maintaining itself and may be slowly expanding.

In January 1999, 50 Merriam's (unsexed) turkeys were released along the Salmon River in Unit 37, 3 miles southeast of Challis. Fourteen (unsexed) Merriam's turkeys were also released along the Salmon River in Unit 28, four miles south of Salmon.

Management Studies

Inactive.

Management Implications

Current population levels cannot yet sustain recreational harvest.

Abstract

Small populations of turkeys have become established near Challis and south of Salmon but they are not yet hunted. Forty Merriam's turkeys were released in 1991 to supplement the existing population near Salmon and to initiate a new population near Challis. An additional 35 birds were released in 1993 to supplement the Challis population and establish a population in Unit 21A. In 1999 an additional 50 birds were released near Challis and 14 near Salmon to supplement existing populations.

MOURNING DOVE

Population Surveys

The Salmon Region contains a breeding population of mourning doves. The only population information is obtained from a coo count in the southern portion of the Lemhi Valley. During 1985, 1986, and 1987, a total of 4 mourning doves were seen or heard along the coo count route (Table 8). In 1988 the southern half of the route was relocated three miles to the east. The 1988 count on the old route was 1 mourning dove call and on the new route the count was 4 calls plus 9 birds seen. However, only eight birds have been seen or heard in the years since 1988.

Harvest Characteristics

Telephone Survey

During years in which mourning doves delay their migration slightly, Salmon Region hunters are able to harvest moderate numbers of birds. In most years the harvest is low (Table 8). Due to small sample sizes, the telephone survey harvest data is very imprecise. Since 1996 telephone surveys have estimated only statewide harvests.

Check Stations

Inactive.

Climatic Conditions

The spring of 1998 through May had above average precipitation and average temperatures. Summer and early fall 1998 had slightly above normal precipitation and normal temperatures. Precipitation during the 1998-1999 winter was average, and temperatures were above normal.

Habitat Conditions

Mourning doves are common but not abundant throughout the region, indicating that perhaps suitable habitat is limited. Most habitats are associated with riparian willow in cattle ranching operations and are relatively stable.

Management Implications

The extended season (60 days) from 1983 to 1986 had little effect on harvest, since many doves move out of the area soon after the September 1 opening date. Similarly, the 30-day season initiated in 1987 due to a general decline in mourning dove numbers in the western U.S. probably did not affect harvest in our area.

Abstract

Mourning doves breed in moderate numbers in the Salmon Region but are usually only lightly harvested here due to migration timing.

RABBITS AND HARES

Population Surveys

Inactive.

Harvest Characteristics

Telephone Survey

The Salmon Region contains huntable populations of both cottontail and pygmy rabbits. However, they appear to be of only incidental interest to sportsmen. Harvest apparently varies greatly from year to year, depending upon rabbit populations (Table 9). Due to small sample sizes, the telephone survey harvest data is very imprecise. Since 1996 telephone surveys have estimated only statewide harvests.

Check Stations

Inactive.

Climatic Conditions

The spring of 1998 through May had above average precipitation and average temperatures. Summer and early fall 1998 had slightly above normal precipitation and normal temperatures. Precipitation during the 1998-1999 winter was average, and temperatures were above normal.

Habitat Conditions

Little is known of habitat conditions across the region. There may be a slight downward trend as overall range conditions improve and sagebrush is converted to grassland.

Management Implications

Rabbits and hares are generally of low interest to sportsmen - recreational opportunity still greatly exceeds demand. Very little management data is collected nor is it anticipated this effort will increase.

Abstract

Rabbits and hares receive little emphasis from sportsmen or wildlife managers in the Salmon Region.

Table 1. Pheasant hunter success and harvest in the Salmon Region obtained from the telephone survey, 1986-1998.

Year	Bag and Possession Limit	Hunters	Hunter Days	Birds	Birds/Hunter Day
1986	3/6*	315	528	387	0.7
1987	3/6*	339	797	497	0.6
1988	3/6*	175	340	244	0.7
1989	3/6*	289	642	231	0.4
1990	3/6	235	570	284	0.5
1991	3/6	155	985	200	0.2
1992	3/6	286	442	490	1.1
1993	3/6	340	1,422	804	0.6
1994	3/6	225	1,180	1,555	1.3
1995	3/6	223	569	223	0.4
1996	3/6	ND			
1997	3/6	ND			
1998	3/6	ND			

*2/2 First five days.

Table 2. Forest grouse hunter success in the Salmon Region obtained from the telephone survey, 1986-1998.

Year	Bag and Possession Limit	Hunters	Hunter Days	Birds	Birds/Hunter Day
1986	4/8	835	3,354	3,086	0.92
1987	4/8	907	3,329	4,628	1.39
1988	4/8	956	5,411	4,762	0.88
1989	4/8	962	5,004	4,356	0.87
1990	4/8	930	5,453	3,708	0.68
1991	4/8	803	3,150	2,205	0.70
1992	4/8	1,378	10,042	9,647	0.96
1993	4/8	2,350	12,864	5,566	0.43
1994	4/8	3,184	21,277	11,557	0.54
1995	4/8	3,574	20,775	12,834	0.62
1996	4/8	ND			
1997	4/8	ND			
1998	4/8	ND			

Table 3. Sage grouse production in the Salmon Region based on wing collections, 1986-1998.

Year	Juv.:100 Females	Juv.:100 Adults	Percent Unsuccessful Females
1986	247	159	45
1987	126	61	53
1988	143	72	ND
1989	177	98	ND
1990	175	116	ND
1991	168	100	69
1992	150	70	70
1993	149	100	56
1994	133	83	57
1995	78	40	ND
1996	320	155	47
1997	257	189	43
1998	520	347	60
5-year Ave.	262	163	ND
Percent Change From Last Year	+102	+84	ND
Percent Change From Previous 5-year Average	+39	+43	ND

Table 4. Sage grouse hunter success and harvest in the Salmon Region obtained from check stations and the telephone survey, 1986-1998.

Year	Bag and Possession Limit	Check Station*				Telephone Survey			
		Hunters	Birds	Birds/ Hunter Day	Hours/ Bird	Hunters	Hunter Days	Birds	Birds/ Day
1986	3/6	106	147	1.4	4.5	390		911	1.89
1987	3/6	117	265	2.3	3.0	625		2,852	2.01
1988	3/6	120	276	2.3	3.0	727		2,326	0.84
1989	3/6	125	192	1.5	3.6	560		974	0.69
1990	3/6	155	167	1.1	3.9	519		1,842	1.13
1991	3/6	91	153	1.7	4.1	760	2,588	2,122	0.82
1992	3/6	93	105	1.1	7.0	913	2,188	941	0.43
1993	3/6	84	48	0.6	13.1	1,670	4,731	2,620	0.55
1994	3/6	74	64	0.9	7.1	1,236	4,795	4,327	0.90
1995	3/6	79	25	0.3	23.9	1,117	4,874	2,132	0.44
1996	2/4	68	31	0.5	9.2	ND			
1997	2/4	42	19	0.5	11.1	ND			
1998	2/4	62	29	0.5	7.5	ND			

*Howe and Sage Junction check stations.

Table 5. Opening weekend field checks of sage grouse hunters in the Salmon Region.

Area	Hunters	Sage Grouse	Birds/Hunter	Hours/Bird
Lemhi				
Long-term average ^a	120±51	174±111	1.3±0.5	3.5±1.8
1986	104	120	1.2	4.3
1987	97	134	1.4	4.2
1988	67	94	1.4	3.9
1989	34	30	0.9	5.1
1990	23	31	1.3	2.7
1991	--	--	1.3	3.6
1992	101	77	0.8	6.2
1993	--	--	-	-
1994	59	58	1.0	4.6
1995	18	12	0.7	5.2
1996				
1997	6	0	-	-
1998	18	11	1.6	7.2
Pahsimeroi				
Long-term average	36±24	44±33	1.2±0.5	3.6±2.5
1986	22	43	2.0	3.1
1987	44	57	1.3	-
1988	25	21	0.8	1.7
1989	33	38	1.2	1.7
1990	15	12	0.8	4.7
1991	--	--	-	-
1992	21	16	0.8	3.0
1993	--	--	-	-
1994	19	8	0.4	8.0
1995	2	1	0.5	6.0
1996	0	0	0	0
1997	13	5	0.4	4.4
1998	2	4	2.0	3.5

^a Mean ± standard deviation for 1967 through 1993.

Table 6. Chukar partridge hunter success in the Salmon Region obtained from the telephone survey, 1986-1998.

Year	Bag and Possession Limit	Hunters	Hunter Days	Birds	Birds/Hunter Day
1986		166		263	1.06
1987		569		2,097	1.59
1988		529		2,548	1.09
1989		444		1,139	0.78
1990		499	1,460	4,964	3.46
1991		276	1,435	1,837	0.86
1992		713	3,725	7,809	2.11
1993	8/16	495	3,216	1,886	0.59
1994	8/16	862	3,765	4,027	1.07
1995	8/16	812	4,346	3,980	0.92
1996	8/16	ND			
1997	8/16	ND			
1998	8/16	ND			

Table 7. Gray partridge hunter success in the Salmon Region obtained from the telephone survey, 1986-1998.

Year	Bag and Possession Limit	Hunters	Hunter Days	Birds	Birds/Hunter Day
1986		49		35	1.84
1987		112		848	0.91
1988		38		38	0.58
1989		64		125	2.72
1990		89		96	0.76
1991		100		275	0.48
1992	8/16	45		0	0
1993	8/16	278	1,051	278	0.27
1994	8/16	318	1,704	1,292	0.76
1995	8/16	426	1,868	508	0.27
1996	8/16	ND			
1997	8/16	ND			
1998	8/16	ND			

Table 8. Mourning dove population trends and harvest in the Salmon Region.

Year	Coo Counts		Telephone Survey			
	Routes/Miles Counted	Birds/Mile	Hunters	Hunter Days	Birds	Birds/Hunter Day
1986	1/20	0.00	114		1,037	3.6
1987	1/20	0.10	42		943	10.0
1988	1/20	0.05	68		431	3.2
1988	1/20*	0.55				
1989	1/20	0.10	0		0	0
1990	1/20	0.05	31		4	1.0
1991	1/20	0.00	0		0	0
1992	1/20	0.05	0		0	0
1993	1/20	0.05	186		3,092	3.1
1994	1/20	0.05	150	524	1,274	2.4
1995	1/20	0.10	223	853	833	1.0
1996	1/20	0.00	ND			
1997	ND	ND	ND			
1998	1/20	0.00	ND			

*Route relocated.

Table 9. Cottontail rabbit harvest in the Salmon Region obtained from the telephone survey, 1986-1998.

Year	Bag and Possession Limit	Hunters	Hunter Days	Harvest	Bag per Hunter Day
1986		126		38	0.53
1987		0		0	-
1988		19		75	1.34
1989		0		0	-
1990		117		757	6.47
1991		59		203	1.00
1992	8/16	64	11	31	2.84
1993	8/16	928	6,679	18,894	2.83
1994	8/16	880	4,851	23,150	4.77
1995	8/16	670	4,833	4,366	0.90
1996	8/16	ND			
1997	8/16	ND			
1998	8/16	ND			

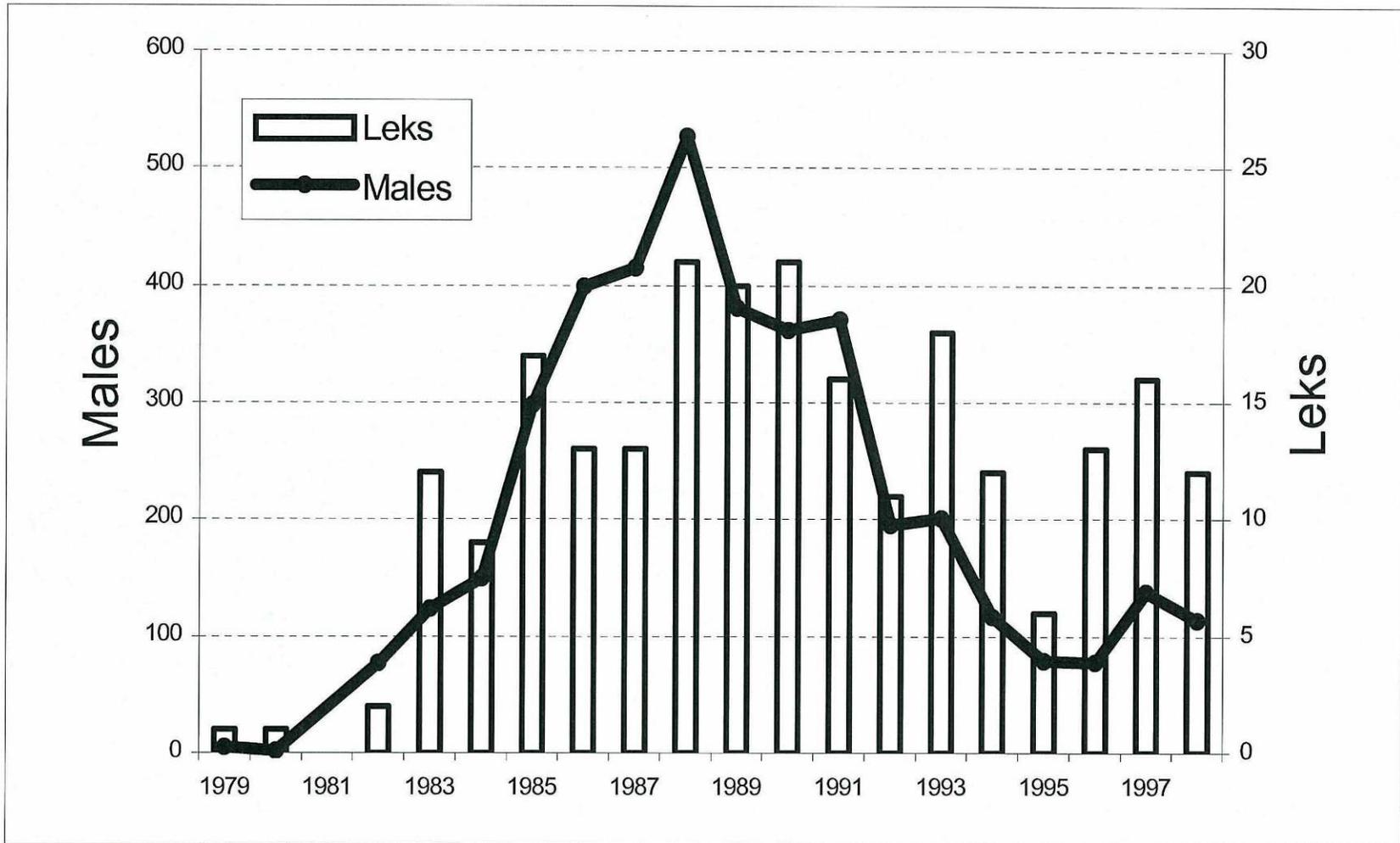


Figure 1. Peak male sage grouse counts and leks counted in the Salmon Region.

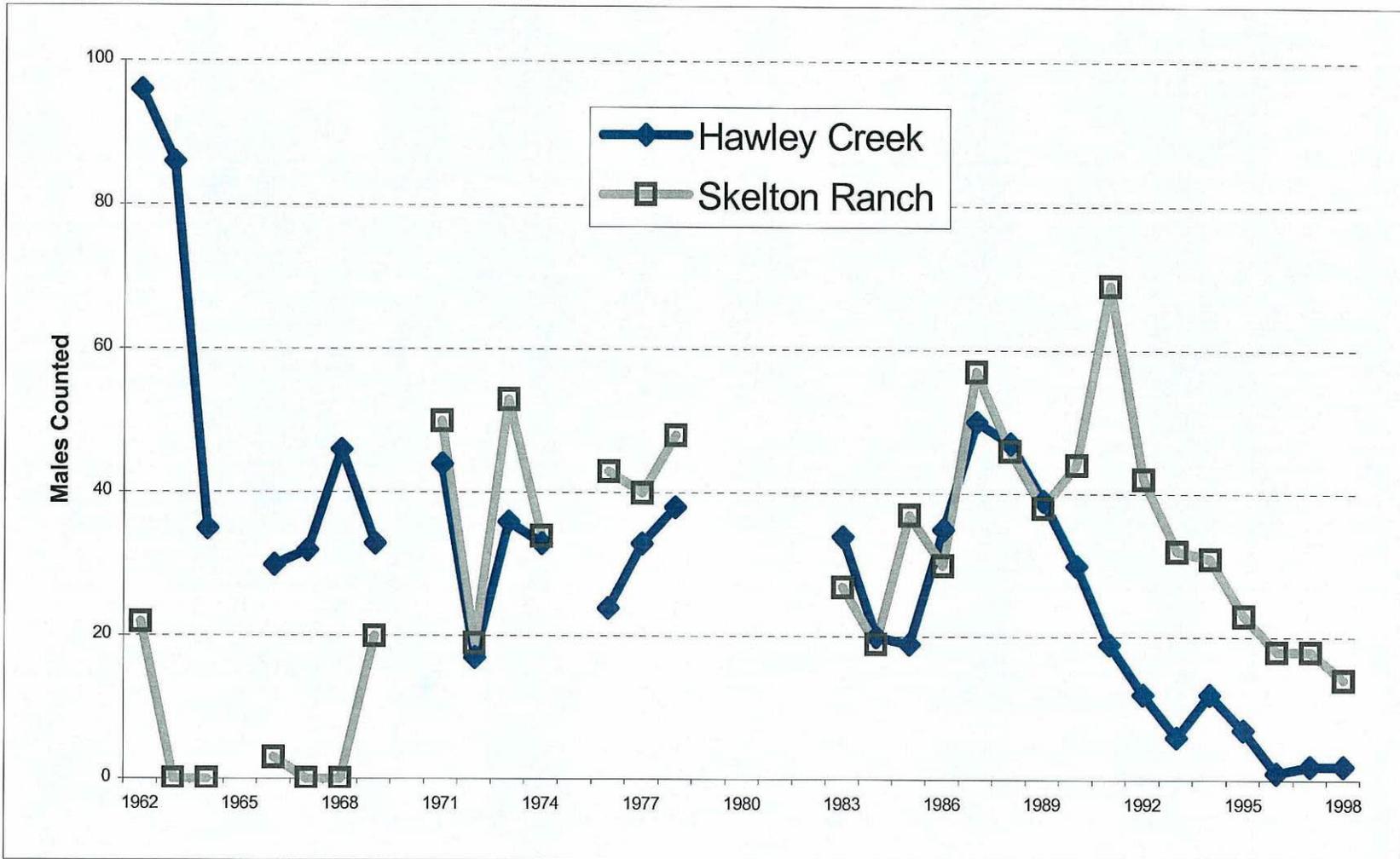


Figure 2. Peak male sage grouse counts on south Lemhi leks.

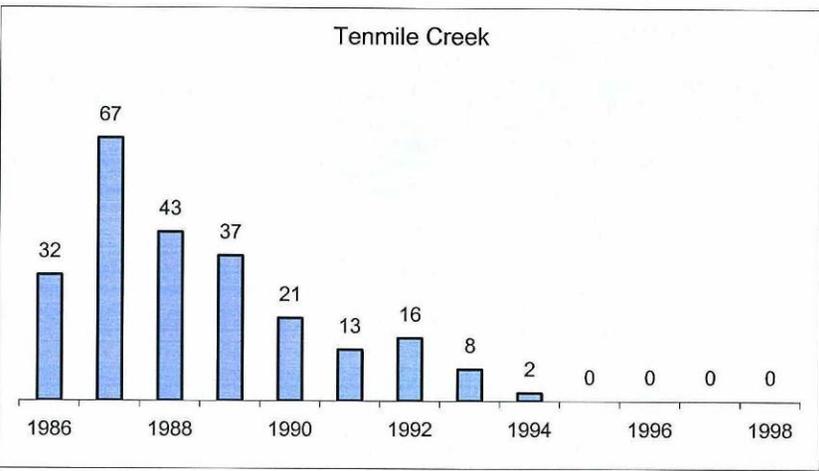
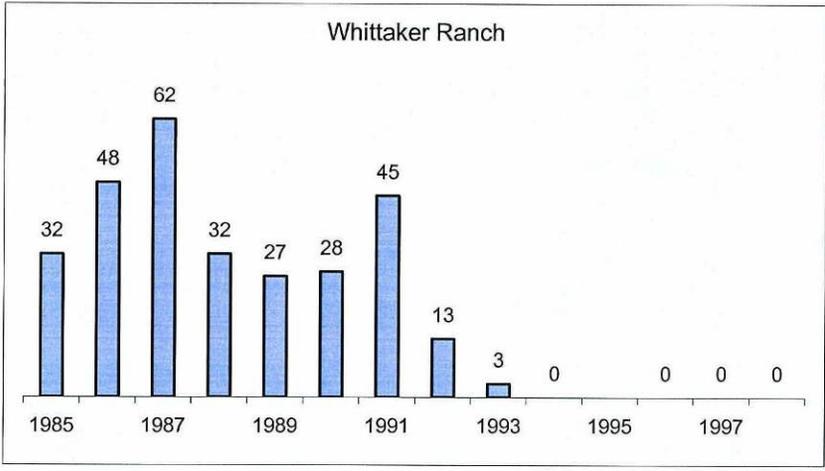
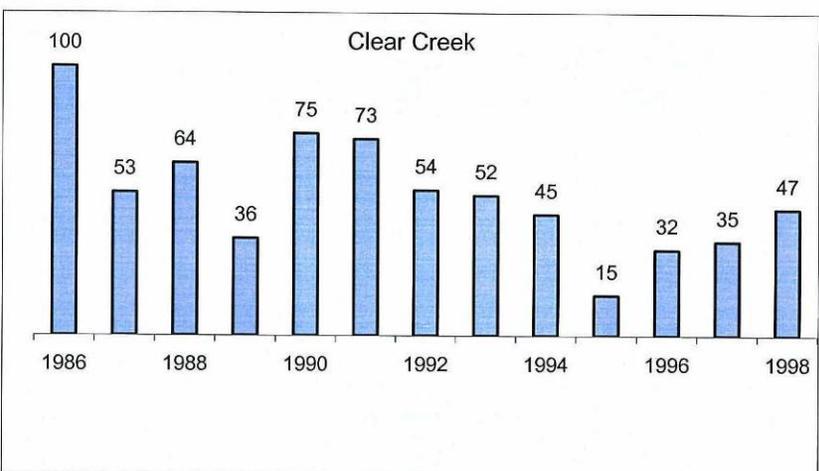
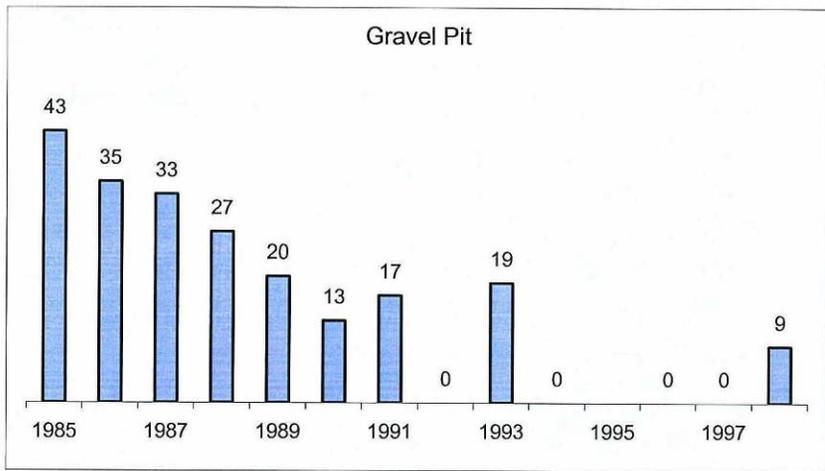


Figure 3. Peak male sage grouse counts on new south Lemhi leks.

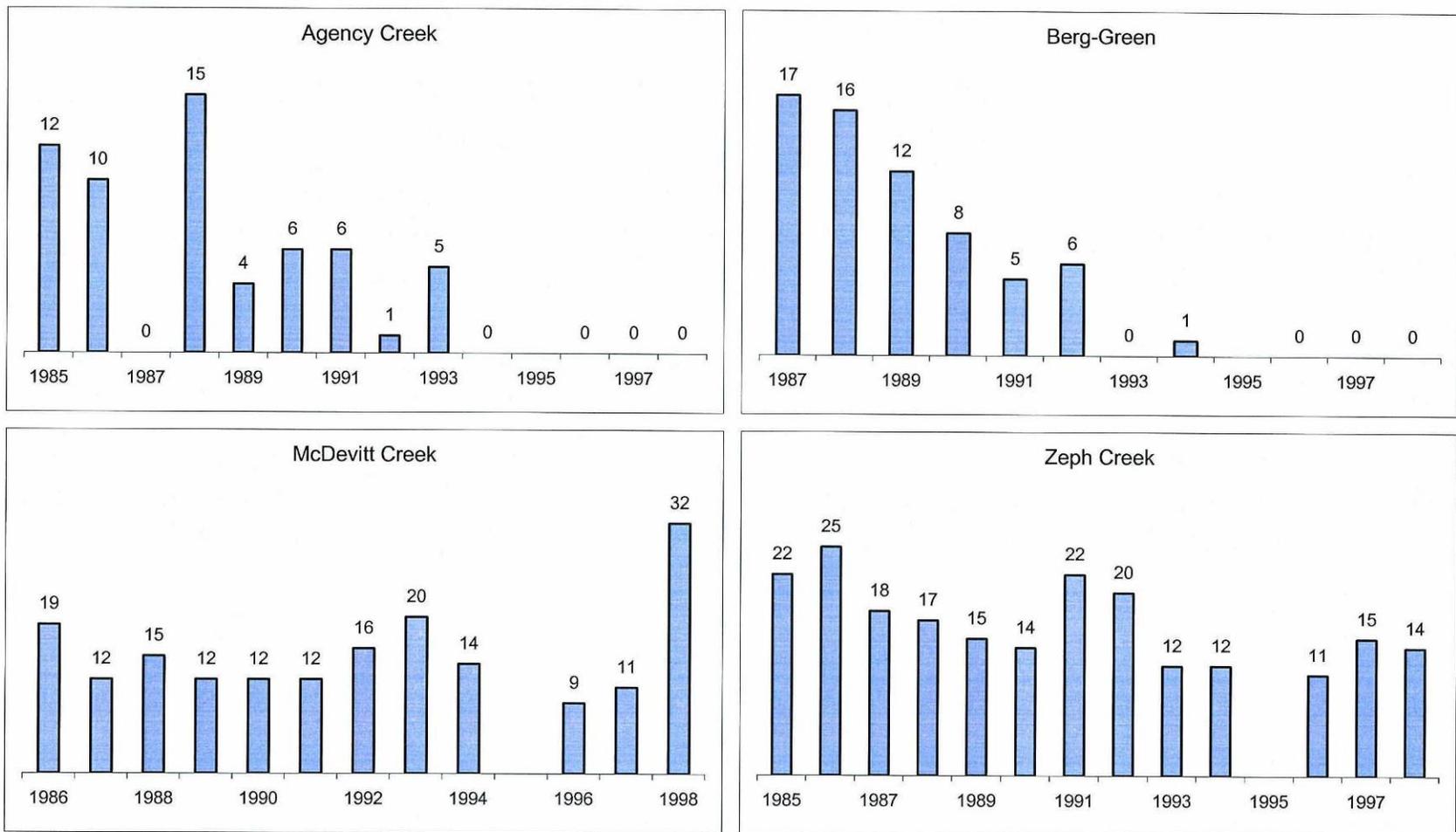


Figure 4. Peak male sage grouse counts on mid-Lemhi leks.

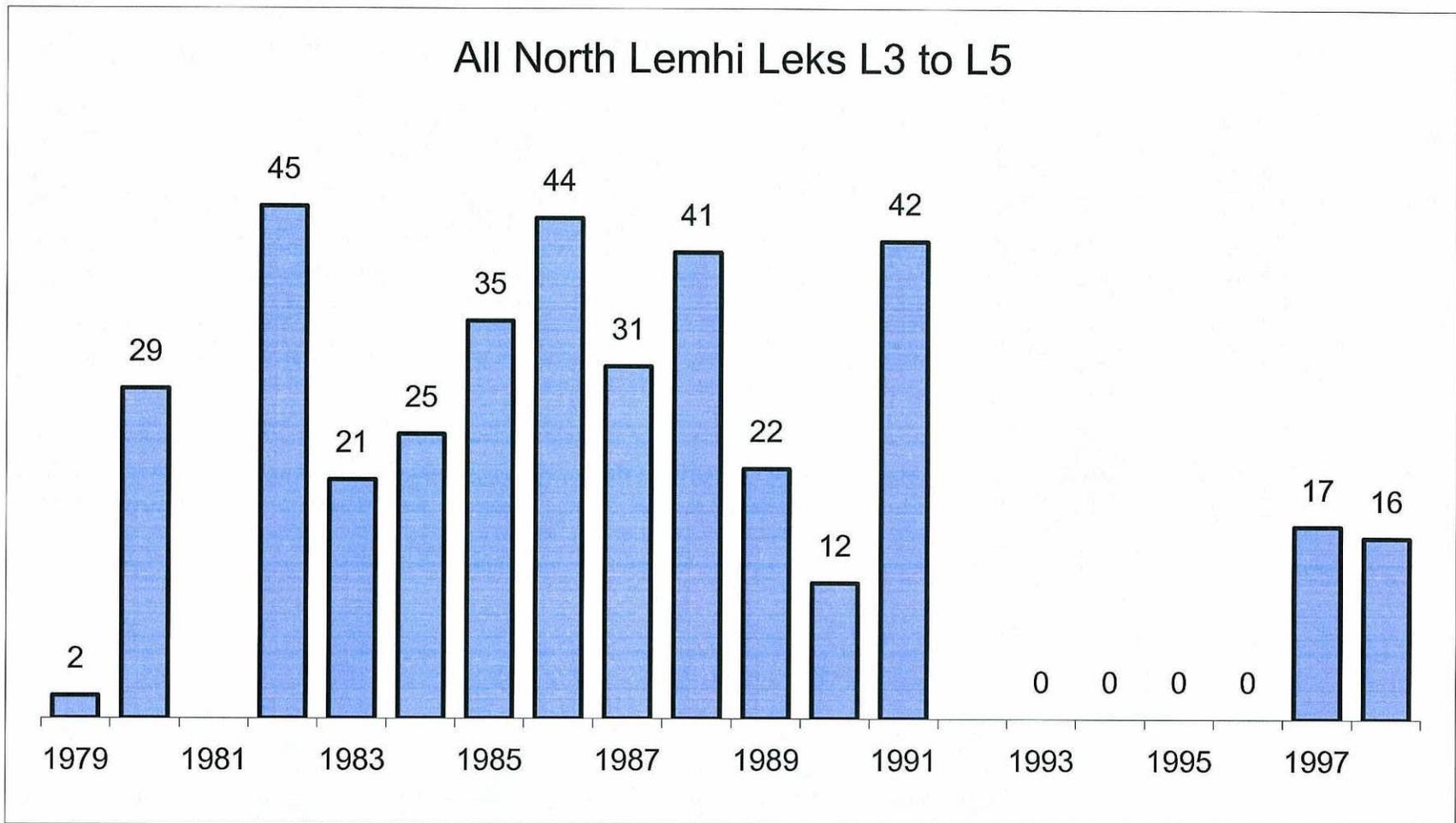


Figure 5. Peak male sage grouse counts – north Lemhi leks.

APPENDIX I

PHEASANTS — All Varieties



AREA 1

Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone Counties.

Seasons

1998 — October 10 through December 31

1999 — October 9 through December 31

Daily Bag Limit **3 cocks**

Possession Limit After First Day of Season ... 6 cocks

AREA 2

Bannock, Bear Lake, Bingham, Blaine, Bonneville, Butte, Camas, Caribou, Cassia, Clark, Custer, Franklin, Fremont, Gooding, Jefferson, Jerome, Lemhi, Lincoln, Madison, Minidoka, Oneida, Power, Teton, and Twin Falls Counties.

Seasons

Area 2 seasons begin at noon on opening day and are as follows:

1998 — October 17 through November 30

1999 — October 16 through November 30

Daily Bag Limit **3 cocks**

Except Market Lake and Mud Lake WMA's in Jefferson County and Sterling WMA in Bingham County ... **2 cocks**

Possession Limit After First Day of Season 6 cocks

Except Market Lake and Mud Lake WMA's in Jefferson County and Sterling WMA in Bingham County ... **4 cocks**

AREA 3

Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley, and Washington Counties (including all islands in the Snake River except Patch and Porter Islands).

Seasons

Area 3 seasons begin at noon on opening day and are as follows:

1998 — October 17 through December 31

1999 — October 16 through December 31

Except Patch and Porter Islands: Seasons begin on the dates shown above. Closing dates will correspond with those set by the Oregon Fish and Game Commission. Check with Southwest Region Office, (208) 465-8465, or see Oregon small game regulations.

Daily Bag Limit **3 cocks**

Except Fort Boise WMA (including Gold Island) in Canyon County, C.J. Strike WMA in Owyhee County, Kennedy-Keifer segment of the Payette River WMA in Payette County and Montour Management Area in Gem County **2 cocks**

Possession Limit After First Day of Season ... 6 cocks

Except Fort Boise WMA (including Gold Island) in Canyon County, C.J. Strike WMA in Owyhee County, Kennedy-Keifer segment of the Payette River WMA in Payette County and Montour Management Area in Gem County **4 cocks**

WMA Pheasant Permit Requirement: Any person hunting for or having a pheasant in his or her possession on any of the Wildlife Management Areas where game farm pheasants are released (i.e., Market Lake, Mud Lake, Sterling, Fort Boise, C.J. Strike, Kennedy-Keifer segment of Payette WMA, or Montour) must have a valid WMA Pheasant Permit in his or her possession. See page 10.

Bag Limit: The annual bag limit under this permit is ten (10) cocks. The daily bag limit on these WMAs continues to be two (2) cocks, with a four (4) cock possession limit.

Reporting: Any person issued a WMA Pheasant Permit must file a hunting report with IDFG not later than December 31 of the year that the permit is issued. See page 10.

YOUTH PHEASANT SEASON

The Youth Pheasant Season is open statewide and begins on the first weekend of October and lasts 2 days. In Areas 2 and 3 the season begins at noon. It is open for all licensed hunters fifteen years of age or younger. All youth hunters must be accompanied by an adult eighteen years or older. The daily bag limit is 1 cock. The possession limit after the first day of the season is 2 cocks.

Distribution and Habitat Use: Shaded area(s) show general distribution of this species. The ring-necked pheasant is widely distributed in agricultural areas. Important habitat needs are grassy areas or other dense nesting cover at least 18 inches high, permanent cover that provides protection from winter weather, and abundant water and food (especially grain). Pheasants are common in this type of habitat along the Snake River Plain from the Oregon border to central Idaho. They are present in lower densities in agricultural habitats below 5,000 feet in eastern Idaho and below 4,000 feet in northern Idaho from Benewah County south to Whitebird.





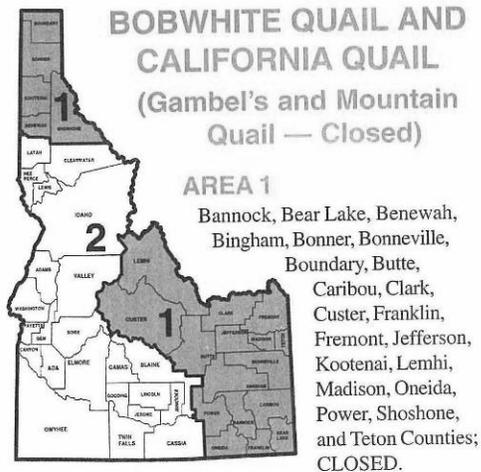
Seasons

1998 — September 1 through December 31
1999 — September 1 through December 31

Daily Bag Limit 4 of any kind
Possession Limit After First Day of Season
..... 8 of any kind

Distribution and Habitat Use: Shaded area(s) show general distribution of this species. Idaho's three species of forest grouse are all native to the state. In northern Idaho, ruffed grouse are the most common forest grouse. Good populations are also found in the mountains of central and eastern Idaho and southeastern Idaho west to the Sublett Mountains. Riparian habitats and other moist mountain brush areas are commonly used by these birds.

Blue grouse are more common than other grouse in most southern Idaho mountains. They favor high elevation sagebrush and mountain shrub areas for nesting, springs and stream banks for rearing young and rely heavily on Douglas fir for fall and winter food and cover. The sparsely-distributed spruce grouse are found in dense conifer forests, generally from the Salmon and Payette river drainages north.



AREA 2

Ada, Adams, Blaine, Boise, Camas, Canyon, Cassia, Clearwater, Elmore, Gem, Gooding, Idaho, Jerome, Latah, Lewis, Lincoln, Minidoka, Nez Perce, Owyhee, Payette, Twin Falls, Valley, and Washington Counties.

Seasons

1998 — September 19 through December 31
1999 — September 18 through December 31

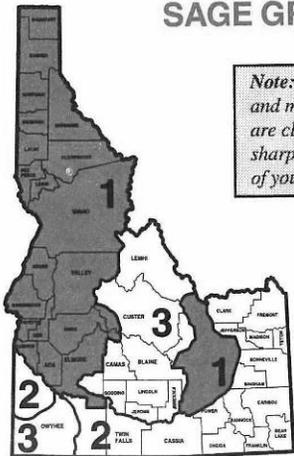
Daily Bag Limit 10 of any kind
Possession Limit After First Day of Season
..... 20 of any kind

Distribution and Habitat Use: Shaded area(s) show general distribution of this species. There are three introduced and one native species of quail in Idaho. The California (valley) quail, which occurs from Twin Falls west to the Oregon border and north to the Palouse Prairie, is the most common. Good populations live along rivers, streams and other areas of abundant water and brushy cover below about 3,500 feet elevation. The bobwhite quail was introduced to Idaho in the 1880s and still exists in small, scattered populations in agricultural areas of the Boise Valley. The Gambel's quail was introduced near Salmon in 1917, and a small population still exists there. The season is CLOSED on Gambel's quail.

The mountain quail, a native bird, exists in small, scattered populations in dense mountain brush fields usually associated with riparian areas. It is found primarily in the mountains from Boise to Bennett Mountain, the Owyhee Mountains, and along the Little Salmon River, Main Salmon, and lower Snake River. The season is CLOSED on mountain quail.



SAGE GROUSE



Note: Twin Falls County and most of Cassia County are closed to the hunting of sharp-tailed grouse. Be sure of your target!

AREA 1

Ada, Adams, Bannock County north of Interstate 86 and west of Interstate 15, Benewah, Bingham and Bonneville Counties west of Interstate 15, Blaine County within the Salmon River drainage and east of the Arco-Minidoka Road, Boise, Bonner, Boundary, Butte County that part south of US Highways 20/26 and 22/33 between Mud Lake and Craters of the Moon National Monument and the entire Birch Creek drainage, Canyon, Clark County within the Birch Creek drainage, Clearwater, Custer County within the Salmon River drainage upstream from and including Valley Creek, Elmore County EXCEPT that portion south and east of US Highway 20 and north of Interstate 84, Gem, Idaho, Jefferson County west of Interstate 15 and south of State Highway 33, Kootenai, Latah, Lemhi County within the Birch Creek drainage, Lewis, Nez Perce, Payette, Power County north of Interstate 86, Shoshone, Valley, and Washington Counties; CLOSED.

AREA 2

Bannock County except that portion north of Interstate 86 and west of Interstate 15, Bear Lake, Bingham and Bonneville Counties east of Interstate 15, Caribou, Cassia, Clark County EXCEPT that portion within the Birch Creek drainage, Franklin, Fremont, Jefferson County east of Interstate 15 and that part north of State Highway 33 and west of Interstate 15, Madison, Oneida, Owyhee County north of the Juniper Mountain/Mud Flat/Poison Creek roads and Highway 78 to Grandview and the Snake River, Owyhee County east of the Bruneau River, Power County south of Interstate 86, Twin Falls and Teton Counties.

Seasons

1998 — September 19 through September 25
1999 — September 18 through September 24

Daily Bag Limit 1
Possession Limit After First Day of Season 2

AREA 3

Blaine County EXCEPT that part within the Salmon River drainage and that part east of the Arco-Minidoka Road, that part of Butte County north of US Highway 20/26 and State Highway 33 not within the Birch Creek drainage, Camas, Custer County EXCEPT that portion within the Salmon river drainage upstream from and including Valley Creek, Elmore County south and east of US Highway 20 and north of Interstate 84, Gooding, Jerome, Lemhi County EXCEPT that portion within the Birch Creek drainage, Lincoln, Minidoka, Owyhee County south of the Juniper Mountain/Mud Flat/Poison Creek roads and Highway 78 to Grandview and the Snake River and west of the Bruneau River.

Seasons

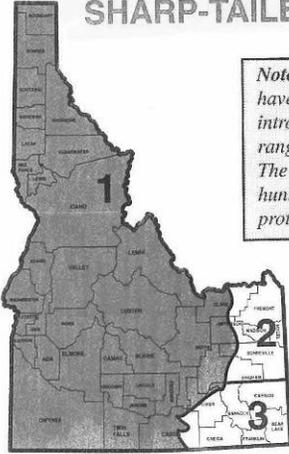
1998 — September 19 through October 11
1999 — September 18 through October 10

Daily Bag Limit 2
Possession Limit After First Day of Season 4

Distribution and Habitat Use: Shaded area(s) show general distribution of this species. This native grouse is widely distributed in areas with large blocks of sagebrush habitat throughout southern Idaho. Sagebrush is a crucial winter food for sage grouse and also provides them with nesting and roosting cover during the rest of the year. Wet places, including agricultural lands, are important feeding areas for hens with young chicks and are heavily used by sage grouse during the fall in dry years.



SHARP-TAILED GROUSE



Note: Sharp-tailed grouse have recently been introduced into historic range south of Twin Falls. The area remains closed to hunting for sharp-tails to protect this population.

Distribution and Habitat Use: Shaded area(s) show general distribution of this species. Columbian sharp-tailed grouse were once distributed in grassland/mountain brush habitats throughout southern and western Idaho north to the Palouse Prairie. Habitat changes due to agricultural development and livestock grazing, however, have reduced this grouse's range to scattered areas in southeastern Idaho. Good populations still exist from Fremont County south to Utah in grasslands associated with chokecherry, sagebrush, hawthorn, serviceberry, bitterbrush and other brushy cover. The season is closed on a small remnant population north of Weiser and a newly transplanted population in Shoshone Basin, south of Twin Falls.



AREA 1

Ada, Adams, Bannock County west of Interstate 15 and north of Interstate 86, Benewah, Bingham County west of Interstate 15, Blaine, Boise, Bonner, Bonneville County west of Interstate 15, Boundary, Butte, Camas, Canyon, Cassia County west of Interstate 84 north of the Malta-Sublett Road and west of the Malta-Strevell Road, Clark County west of Interstate 15, Clearwater, Custer, Elmore, Gem, Gooding, Idaho, Jefferson County west of Interstate 15, Jerome, Kootenai, Latah, Lemhi, Lewis, Lincoln, Minidoka, Nez Perce, Owyhee, Payette, Power County north of Interstate 86, Shoshone, Twin Falls, Valley, and Washington counties; CLOSED.

AREA 2

Bannock County east of Interstate 15, Bonneville County east of Interstate 15, Clark County east of Interstate 15, Franklin, Fremont, Jefferson County east of Interstate 15, Madison, and Teton counties.

Seasons

1998 — October 1 through October 16

1999 — October 1 through October 16

Daily Bag Limit 2
Possession Limit After First Day of Season 4

AREA 3

Bannock County east of Interstate 15 and south of Interstate 86, Bear Lake, Caribou, Cassia County east of Interstate 84 and that portion west of Interstate 84 south of the Malta-Sublett Road and east of the Malta-Strevell Road, Clark County east of Interstate 15, Franklin, Oneida, and Power County south of Interstate 86.

Seasons

1998 — October 1 through October 31

1999 — October 1 through October 31

Daily Bag Limit 2
Possession Limit After First Day of Season 4



Gray partridge, another introduced species, are most common in agricultural regions, but can also be found in sagebrush/ grassland areas. They are hardy birds able to withstand severe winter weather if adequate food is available. Gray partridge are widely distributed, but are most common in the state's agricultural valleys.



AREA 1

Ada, Adams, Benewah, Blaine, Boise, Bonner, Boundary, Camas, Canyon, Cassia, Clearwater, Elmore, Gem, Gooding, Idaho, Jerome, Kootenai, Latah, Lewis, Lincoln, Minidoka, Nez Perce, Owyhee, Payette, Shoshone, Twin Falls, Valley, and Washington Counties.

Seasons

1998 — September 19 through January 15, 1999
 1999 — September 18 through January 15, 2000

Daily Bag Limit 8 Chukar and 8 Gray Partridge
Possession Limit After First Day of Season
 16 Chukar and 16 Gray Partridge

AREA 2

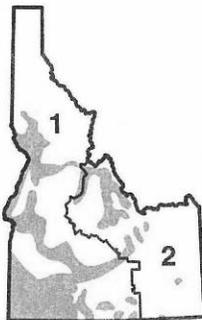
Bannock, Bear Lake, Bingham, Bonneville, Butte, Caribou, Clark, Custer, Franklin, Fremont, Jefferson, Lemhi, Madison, Oneida, Power, and Teton Counties.

Seasons

1998 — September 19 through December 15
 1999 — September 18 through December 15

Daily Bag Limit 8 Chukar and 8 Gray Partridge
Possession Limit After First Day of Season
 16 Chukar and 16 Gray Partridge

Distribution and Habitat Use: Shaded area(s) show general distribution of this species. Chukar partridge were introduced into Idaho from Asia. They are common in suitable habitat along the Salmon, Snake and Boise rivers, and along other river drainages of southern and central Idaho up to an elevation of about 5,000 feet. Chukar habitat consists of steep, rocky canyons with grassy and brushy vegetation.

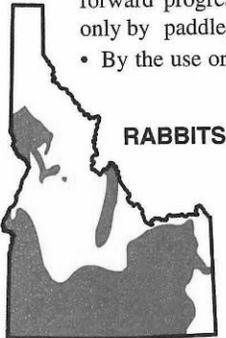


UPLAND GAME ANIMALS — COTTONTAIL AND PYGMY RABBITS, AND SNOWSHOE HARES

UNLAWFUL METHODS OF TAKE

No person shall take upland game animals:

- From one-half hour after sunset to one-half hour before sunrise.
- With a trap, snare, net, or shotgun using shotgun shells exceeding three and one-half (3 1/2) inches in length.
- From boats or other craft having a motor attached UNLESS the motor is completely shut off and forward progress has ceased, or the boat is drifting naturally, or it is propelled only by paddle, oars, or pole, or it is beached, moored, or resting at anchor.
 - By the use or aid of any electronic call.



RABBITS



HARES

Shaded area(s) show general distribution of these species.

AREAS CLOSED TO HUNTING

Hunting, killing, or molesting upland game animals is prohibited in the following areas:

- Craters of the Moon National Monument in Blaine and Butte counties.
- Harriman State Park Wildlife Refuge in Fremont County.
- Idaho National Engineering Laboratory site in Bingham, Bonneville, Butte, Clark and Jefferson Counties.
- Nez Perce National Historical Park in Clearwater, Idaho and Nez Perce Counties.
- That portion of Ada County within Veterans Memorial Park and the area between State Highway 21 and the New York Canal from the New York Canal Diversion Dam downstream to the Boise City limits.
- Yellowstone National Park in Fremont County.
- On any of those portions of federal refuges, State game preserves, State wildlife management areas, bird preserves, bird refuges, and bird sanctuaries for which bird hunting closures have been declared by legislative or Commission action.

SEASONS, BAG AND POSSESSION LIMITS - STATEWIDE			
Species	Season	Daily Bag Limit	Possession Limit (After 1st day of season)
Cottontail and Pygmy Rabbits	1998: September 1, 1998 through February 28, 1999.	8 of any kind.	16 of any kind.
	1999: September 1, 1999 through February 28, 2000.		
Snowshoe Hares	1998: September 1, 1998 through March 31, 1999.	8	16
	1999: September 1, 1999 through March 31, 2000.		

Submitted by:

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Jay Crenshaw
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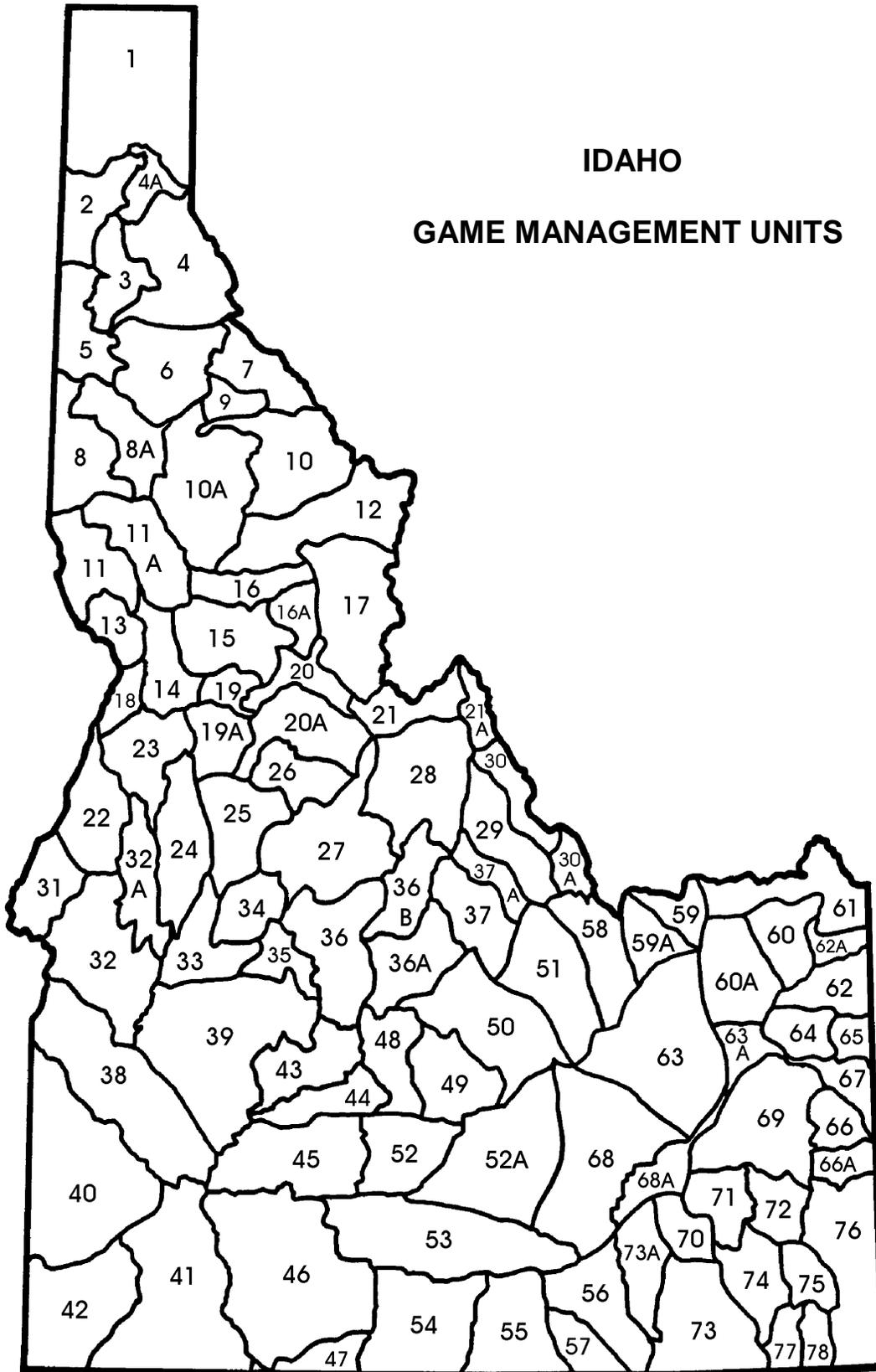
Approved by: IDAHO DEPARTMENT OF FISH AND GAME

Wayne Melquist
Wayne Melquist
State Nongame Wildlife Manager
Federal Aid Coordinator

Steven M. Huffaker
Steven M. Huffaker, Chief
Bureau of Wildlife

IDAHO

GAME MANAGEMENT UNITS



FEDERAL AID IN WILDLIFE RESTORATION

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

