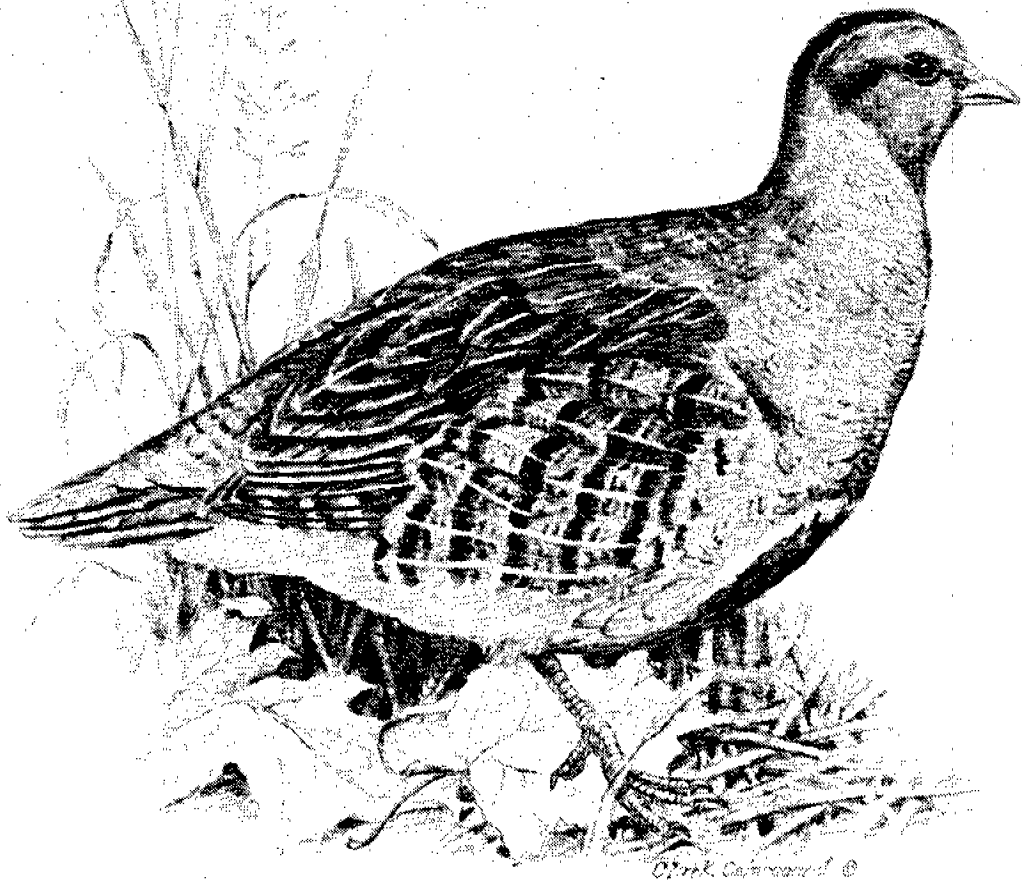


Utah Upland Game Annual Report 1987



Utah Department of Natural Resources
Division of Wildlife Resources
Publication 88-7

U T A H
U P L A N D G A M E

Annual Report

1987

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Annual Performance Report for Federal Aid Project W-65-R-35 Job A-4

Utah Department of Natural Resources

DIVISION OF WILDLIFE RESOURCES

An Equal Opportunity Employer

William H. Geer
Director

"FINDING OUT HOW MANY THERE ARE LEFT IS
THE LEAST OF THE PURPOSES OF GAME CENSUS.
MEASURING THE RESPONSE OF GAME POPULATIONS
TO CHANGES - DELIBERATE OR ACCIDENTAL -
IN THEIR ENVIRONMENT IS THE BIG PURPOSE.
CONTINUOUS CENSUS IS THE YARDSTICK OF
SUCCESS OR FAILURE IN CONSERVATION."

ALDO LEOPOLD 1932

TABLE OF CONTENTS

	<u>Page</u>
Abstract	1
Objectives	1
Procedures	1
Recommendations	2
Introduction	3
Pheasants	8
Migratory Upland Game Birds	29
Mourning Dove	30
Band-tailed Pigeon	47
Chukar Partridge	50
Sage Grouse	67
Forest Grouse	93
Quail	120
Hungarian Partridge	134
Wild Turkey	150
Sharp-tailed Grouse	165
White-tailed Ptarmigan	168
Rabbits and Hares	174
Cottontail Rabbit	175
Snowshoe Hare	190
Appendix A: Weather Conditions	199
Appendix B: License Sales	203
Appendix C: DWR Summer Survey Effort	207
Appendix D: Season Dates, Bag Limits, Areas Open - 1987	212
Appendix E: Summary Harvest Questionnaire Returns	215

JOB PERFORMANCE REPORT
RESEARCH PROJECT SEGMENT
(Inventory)

State: U T A H Project Title: Statewide Wildlife
Project No.: Management Inventory
W-65-R-35
Job Title: Statewide Upland Game
Job No.: A-4 Inventory and Management

Period Covered: December 15, 1986 to April 30, 1988

Abstract: This report includes upland game inventory and harvest data relating to the 1987-88 hunting seasons. Results of annual inventory and harvest surveys and long-term trends of indices derived by each method are included. Data obtained in 1987 are compared to 1986 and long-term averages.

Objectives: To conduct annual inventories and determine the population trend and annual harvest of upland game.

Procedures: Annual inventory procedures for ring-necked pheasants included winter sex ratio counts and summer roadside counts. The winter sex ratio counts were conducted from December 15, 1986 through February 10, 1987, as snow cover conditions allowed. Indices derived include hen-cock ratios and pheasants observed per 100 hours. Annual summer roadside counts (three or more per route) were conducted from July 23-August 18 on permanently established routes. Indices derived include pheasants per mile, young per mile, young per hen, mean brood and percent of hens with young.

Mourning dove breeding population trend was determined via the annual call count survey. This survey is part of a nationwide survey administered by the U. S. Fish and Wildlife Service. Call counts are conducted over 15 permanent, 20-mile routes. One count was made on each route between May 20-30.

Random brood counts were conducted on chukar and Hungarian partridge, forest grouse (ruffed and blue), sage grouse, sharp-tailed grouse, wild turkey and quail from June 15-August 26. Indices derived for each species include mean brood size, young per 100 adults and birds observed per 100 hours of effort.

Sage grouse strutting ground counts and sharp-tailed grouse dancing ground counts were conducted from March 15-May 15. Total cocks counted, average cocks per ground and percent change from 1986 for comparable grounds were determined on a county basis.

The Gambel's quail call count route in Washington County was discontinued in 1980. Long period waterhole counts were completed in July and August.

Cottontail rabbit roadside counts were conducted over pre-established routes between July 15 and August 5. Indices derived include rabbits per mile and young per 100 adults.

Harvest questionnaires were used to determine the harvest of upland game birds, cottontail rabbit, snowshoe hare, and wild turkey. A 9.6 percent sample of eligible licensees from the current year's (1987) resident small game license file and 1987 combination license file was selected for the game bird and rabbit and hare questionnaire. Separate questionnaires were mailed to all ptarmigan and wild turkey permittees. Indices derived include total hunters, hunter-days, total harvest and hunter success per day plus success for each season.

The upland game questionnaires were analyzed by the Division of Wildlife Resources information systems services subsection. Due to accumulated rounding errors associated with transferring data from the printout, some totals (columns and percentages) may not total exactly.

Beginning in 1978, the program was expanded to report total estimated hunter-days and harvest by species and county rather than just the percent of pressure and harvest. Wild turkey and ptarmigan questionnaires were analyzed separated by Game Management personnel.

Field bag checks of upland game hunters were made primarily at checking stations, with additional random field checks made during each hunting season. Indices derived include bag per hunter (per day), bag per 100 hours, average hours per hunter-day and average hours per bird bagged. Additional sex and age composition data were compiled for some species using wing samples collected at checking stations.

In 1987 a computerized pull apart mailer was again used to obtain harvest data. Data input and storage was entered on tape. This method was initiated in 1981.

Recommendations: This project should be continued for the purpose of determining trends of upland game populations and harvest statistics in Utah.

INTRODUCTION

The objective of Utah's upland game management program is to provide recreational hunting opportunity for sportsmen within the limits of the annual harvestable surplus for each species. It is based on the knowledge that populations of upland game experience relatively high rates of annual turnover. High reproductive rates are naturally compensated for by high death rates, whether hunting is allowed or not. Annual surveys are conducted to measure the production, trend and harvest of each upland game population hunted.

This is the seventeenth edition of this annual Upland Game Report. It is an annual performance report of information compiled during inventory and harvest surveys conducted under Federal Aid Project W-65-R, Job A-4. Information contained herein was compiled by conservation officers, biologists, game managers and the upland game management staff of the Division of Wildlife Resources.

This report serves as a handbook of inventory and harvest data. It is designed primarily for the use of those concerned with the management of upland game in Utah. A separate section is devoted to each species of upland game hunted in Utah. Data are presented primarily in tabular form with limited narrative comment. The first page of each section provides a brief summary of population status and trend as indicated by inventory and harvest data.

During 1987, a total of 68,174 Utah sportsmen spent 438,892 days afield in pursuit of various upland game species (Table 1). The harvest of upland game totaled 452,636 animals. The proportion of the total upland game hunters which pursued each species is shown in Table 2 and the percentage failing to bag at least one bird of each species in Table 3. The regulations for 1987 upland game hunting seasons are shown in Appendix D.



Table 1. Summary of harvest statistics from the mail questionnaire for 1987.

Species	Hunters Afield	Total Harvest	Hunter Days	Bag per Hunter-day	Bag/Hunter For Season
Pheasant	57,118	119,236	199,470	0.60	2.09
Mourning dove	22,553	204,030	89,378	2.28	9.05
Chukar partridge	11,276	32,848	39,099	0.84	2.91
Sage grouse	7,060	12,673	14,242	0.89	1.80
Forest grouse	14,831	45,326	41,428	1.09	3.06
Quail	2,549	7,648	7,918	0.97	3.00
Hungarian partridge	2,010	5,711	5,246	1.09	2.53
Wild turkey	347	60	1,150	0.05	0.17
Band-tailed pigeon	--	--	--	--	--
Sharp-tailed grouse	0	0	0	--	--
Ptarmigan	9	8	9	0.89	0.89
Cottontail	20,322	110,411	77,047	1.43	5.43
Snowshoe	3,702	6,005	8,947	0.67	1.62
TOTAL	--	543,956	483,934	--	--

Total hunters afield for all species of upland game = 68,174

HARVEST QUESTIONNAIRE

Harvest statistics were obtained from a random sample of licensed hunters by their response to a hunter questionnaire. The combined upland game bird and rabbit-hare questionnaire was again used.

A total of 10,022 upland game bird questionnaires, a 9.6 percent sample, were mailed. Of the total, 993 (9.9%) questionnaires were undeliverable. Of the 9,029 questionnaires delivered, 4,272 (47%) usable upland game questionnaires were returned. Of those, 1,491 purchased a license but did not hunt upland game. By dividing the total of 104,724 eligible licensees by the usable returns (4,272), a projection factor of 24.514045 is derived.

The 1987 hunter questionnaire sample size decreased slightly from 1986, and a followup questionnaire was not sent to those who failed to return the first one. A high rate of return is desirable in order to obtain an adequate sample of harvest estimates in counties where hunting pressure and harvest are limited. Extremely small samples from these counties tend to over-estimate the harvest and thus bias the results. Although harvest, number of hunters and days-afield may be over-estimated where small samples are obtained, harvest per hunter-day should be relatively precise.

Table 2. Number and percent of total upland game hunters afield who reported hunting each game species during 1981-87.

Species	Number of Hunters							Percent of Total						
	1981	1982	1983	1984	1985	1986	1987	1981	1982	1983	1984	1985	1986	1987
Pheasant	83,408	85,368	77,847	76,840	69,889	59,987	57,118	86.7	87.4	85.9	86.9	86.2	84.2	83.8
Chukar	12,907	11,326	10,418	9,846	7,930	9,397	11,276	13.4	11.6	11.5	11.1	9.8	13.2	16.5
Mourning dove	30,060	31,756	28,258	30,573	28,183	26,583	22,553	31.2	32.5	31.2	34.6	34.7	37.3	33.1
Sage grouse	10,083	8,997	9,201	8,283	7,586	7,233	7,060	10.5	9.2	10.2	9.4	9.4	10.2	10.4
Forest grouse	14,329	12,384	13,414	11,511	12,645	12,117	14,831	14.9	12.7	14.8	13.0	15.6	17.0	21.8
Quail	4,946	4,368	4,012	3,654	3,065	2,432	2,549	5.1	4.5	4.4	4.1	3.8	3.4	3.7
Hungarian partridge	3,545	2,590	2,889	1,523	1,157	1,257	2,010	3.7	2.7	3.2	1.7	1.4	1.8	2.9
Wild turkey**	115*	23	118*	255*	270	335	347	0.1	0.02	0.1	0.3	0.3	0.5	0.5
Sharp-tailed grouse**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Band-tailed pigeon**	67	51	--	--	--	--	--	0.1	0.1	--	--	0.1	--	--
Ptarmigan**	--	19	13	20	14	14	9	--	0.02	0.01	0.02	0.02	0.02	0.01
Cottontail rabbit	25,906	26,714	22,467	18,616	14,059	13,992	20,322	26.9	27.3	24.8	21.1	17.3	19.6	29.8
Snowshoe hare	3,554	4,245	3,544	3,796	3,365	3,277	3,702	3.7	4.3	3.9	4.3	4.1	4.6	5.4
TOTAL HUNTERS***	96,196	97,705	90,592	88,431	81,119	71,259	68,174							

*Includes both spring and fall hunts.

**Although wild turkey, band-tailed pigeon, ptarmigan and sharp-tailed grouse harvest was determined by separate questionnaires, it is assumed that these hunters are derived from the same group of hunters who reported hunting other upland game bird species.

***Note: This is not the total of the columns because many upland game hunters hunted more than one species.

Table 3. Percent of hunter trips resulting in failure to bag at least one bird, 1961-87.

Year	Pheasant			Dove			Chukar			Sage Grouse			Forest Grouse			Quail			Huns		
	0 Bag	Hunt. Trips %	Trips	0 Bag	Hunt. Trips %	Trips	0 Bag	Hunt. Trips %	Trips	0 Bag	Hunt. Trips %	Trips	0 Bag	Hunt. Trips %	Trips	0 Bag	Hunt. Trips %	Trips	0 Bag	Hunt. Trips %	Trips
1961	714	3,204	22	51	583	9	318	539	59	--	--	--	109	383	28	72	123	59	72	123	59
1962	500	2,685	19	39	456	9	147	362	41	--	--	--	62	201	31	36	108	33	36	108	33
1963	795	3,317	24	53	691	8	248	550	45	220	468	47	188	281	67	71	177	33	59	177	33
1964	911	3,115	29	60	681	9	266	568	47	45	154	29	144	229	63	62	150	41	62	150	41
1965	1,165	4,009	29	--	--	--	486	851	57	82	168	49	225	311	72	93	233	40	93	233	40
1966	1,242	4,297	29	136	1,067	13	423	881	48	54	131	41	133	331	40	63	219	29	63	219	29
1967	1,353	4,833	28	153	1,319	12	477	915	52	138	266	52	194	475	41	116	315	37	116	315	37
1968	1,422	5,223	27	236	1,312	18	495	1,095	45	185	449	41	177	665	27	132	347	38	171	457	37
1969	1,897	5,335	36	214	1,568	14	647	1,250	52	241	648	37	273	646	42	148	292	51	148	292	51
1970	1,546	4,686	33	193	1,274	15	466	962	48	257	603	43	209	666	31	101	210	48	126	314	40
1971	1,783	5,049	35	210	1,333	16	464	934	50	234	625	37	223	673	33	87	210	41	162	385	42
1972	1,743	4,617	38	270	1,421	19	457	827	55	259	593	44	271	794	34	120	224	54	154	339	45
1973	1,659	4,699	35	209	1,596	13	414	824	50	226	553	41	329	1,019	32	97	196	49	128	311	41
1974	2,347	5,323	44	323	1,951	17	511	955	54	292	668	44	388	1,259	31	108	227	48	388	1,259	31
1975	2,472	5,604	44	329	2,554	13	607	1,105	55	374	901	42	535	1,354	40	121	220	55	535	1,354	40
1976	1,739	4,294	40	273	1,709	16	408	781	52	259	783	33	371	1,131	33	87	184	47	371	1,131	33
1977	1,874	5,175	36	295	1,967	15	511	943	54	397	972	41	528	1,388	38	106	247	43	528	1,388	38
1978	1,507	4,858	31	279	1,986	14	343	882	39	301	853	35	419	1,419	30	85	246	35	419	1,419	30
1979	2,222	7,024	32	343	2,671	13	528	1,150	46	400	1,215	33	585	1,691	35	119	243	49	585	1,691	35
1980	1,684	5,867	29	258	2,145	12	458	1,008	45	392	944	42	501	1,283	39	75	206	36	501	1,283	39
1981	1,305	4,637	28	239	1,558	15	302	669	45	184	493	37	297	741	40	57	172	33	297	741	40
1982	1,768	6,725	26	363	2,338	16	406	824	49	269	620	43	325	919	35	89	176	51	325	919	35
1983	1,645	7,153	23	348	2,381	15	362	880	41	294	729	40	300	1,118	27	82	225	36	300	1,118	27
1984	1,245	4,643	27	274	1,711	16	287	548	52	202	435	46	270	640	42	51	76	67	270	640	42
1985	1,207	4,017	30	221	1,500	15	208	426	49	161	376	43	228	656	35	35	54	65	228	656	35
1986	1,211	3,615	33	224	1,476	15	237	537	44	139	368	38	221	667	33	36	61	59	221	667	33
1987	863	2,837	30	140	1,047	13	194	537	36	90	307	29	143	671	21	34	97	35	143	671	21

AVERAGES
(1961-85)

31

13

49

41

40

37

44

The upland game questionnaire is designed to monitor statewide harvest trend from year to year. The more extensively a species is hunted, the more accurately the questionnaire measures the trend data. In an effort to improve the accuracy of indices for species which receive very little hunting pressure and harvest, and which have low densities and limited distribution, a unique questionnaire for that species is mailed to the permit holder. This method has been used for wild turkey, band-tailed pigeon, sharp-tailed grouse and white-tailed ptarmigan.

The annual harvest report is sometimes criticized for being inaccurate and without value. However, report users must recognize that the accuracy of the questionnaire is based on some basic assumptions. These assumptions are: (1) the returned useable sample is a completely random sample (2) respondents recorded data correctly, i.e., they clearly understood the questionnaire, (3) respondents recorded data accurately, did not guess or lie, and (4) respondents correctly identified species hunted. If these assumptions are not met, projections of harvest by county may be over-estimated due to nonrespondent or memory biases. Extreme caution should be used in the interpretation of estimated harvest and hunters for specific species in specific counties. Rather, the long term trend in these indices should be used in managing the populations.

Presently, the upland game annual report contains the best data available and therefore constitutes the basic facts of upland game management. Although this report has its limitations, the trend data is valuable in making professional judgements regarding upland game populations and harvest.

The annual report is used in wildlife planning. It can be used to establish relative importance among species and for developing new resources through transplants or habitat developments. It points out areas of needed research by indicating problems and possible causes. It documents population trends and it combines all this inventory information into one easily accessible publication. Thus it is used extensively by federal land management agencies in environmental impact statements and management plans. It will become increasingly more important in developing management plans, and assessing impacts on wildlife habitat.

RING-NECKED PHEASANT

SUMMARY

Based on the 1986 harvest data, the 1987 statewide breeding population, declined from the previous year. The effect of the 1983-84 winter and flooding is still being reflected by pheasant populations in northern Utah. Winter carry-over from 1986 was good in northern and central Utah on what suitable habitat remained.

Weather conditions during the nesting season were good in April and poor in May in 1987. Statewide monthly average temperatures were above normal, but average precipitation was also above normal across most climate subdivisions in May. More pheasants were observed, and more hens appeared to have young. Overall, production was down due to reduced breeding populations.

Harvest statistics compiled from the questionnaire indicated slightly better success compared to 1986. Hunter pressure was below average but total harvest increased and birds per hunter-day increased 9 percent from 1986. However, opening weekend success was down compared to the previous year based upon field bag check data.



Winter Sex Ratio Counts

Results of the survey for the winter of 1986-87 and long-term trends are shown in Tables 1 and 2 of this section. Statewide comparisons to the winter of 1985-86 and the 10-year average are as follows:

	<u>Winter of</u> <u>1986-87</u>	<u>Percent change from</u>	
		<u>1985-86</u>	<u>Average</u>
Total pheasants counted (roadside)	1,776	+51	-70
Hens per cock	3.7	-5	-3
Pheasants observed per 100 hours	673	+13	-50
Total hours effort (roadside)	243	+14	-43

Winter sex ratio counts indicated a 13 percent increase in pheasants observed per unit of effort. However, density estimates can be biased due to the non-random nature of the survey technique if effort is minimal. The hen-cock ratio decreased 5 percent from 1986 and was 3 percent lower than the long term average. Access was good but the lack of snow kept birds scattered and counting conditions were not as good as previous years. Less than average effort also reduced pheasant observations. No effort was expended in the Southeastern Region.

Roadside Counts

A summary of summer roadside pheasant counts for 1987 is shown in Table 3. Long-term trends of pheasants per mile, young per mile, young per hen, percent of hens with young and mean brood size are found in Tables 4-8. Summer 1987 survey results compared to 1986 and the previous 10-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total pheasants observed	2,370	+4	-10
Total miles driven	2,160	-15	-13
Pheasants per mile	1.10	+22	+4
Average brood size	5.1	+3	-4
Young per hen	4.08	-3	+2
Percent of hens with young	87	+5	+15

January through June temperatures were at or above normal. Precipitation was at or below normal November 1987 through April 1988. May, July and August had above normal precipitation. In the North Central and Uintah Basin climatic subdivisions (major pheasant distribution), 1.59 inches and 0.88 inches above normal precipitation fell in May. This was 99 percent and 113 percent above normal. However, average temperatures in both subdivisions was well above average February through June. In the South-Central and Southeast climatic subdivisions, 1.41 inches and 0.23 inches above normal precipitation fell in May. This was 50 percent and 34 percent above normal. April was warmer and drier than normal. May was warmer and much wetter than normal with July cooler and wetter than normal. June was warmer and drier than normal. Hatching success may have declined due to wet weather in May but warm, dry weather in June should have increased brood survival. Many pheasant chicks were reported killed in Utah County from a severe hail storm on July 21st.

Numerous cars were damaged and a couple people were treated for injuries caused by baseball size hail.

Pheasant production appears to have increased slightly from 1986 in Northern and Southeastern Utah. Production and hunter success were down in all other areas. However, the statewide density index (pheasants per mile) increased from 0.90 in 1986 to 1.10 in 1987, and is above the 10-year average (1.06).

High levels of the Great Salt Lake and Utah Lake continued to reduced both the quantity and quality of wintering, nesting and brood rearing habitat in Box Elder, Salt Lake, Davis, Weber and Utah counties.

Harvest

Hunter Questionnaire

Results of the hunter questionnaire for 1987 are shown in Table 9. Long-term trends of pheasants bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 10-12 and total statewide harvest statistics in Table 13. A comparison of 1987 harvest statistics to 1986 and the 39-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Pheasant hunters	57,118	-5	-30
Pheasants harvested	119,236	+4	-48
Hunter-days afield	199,470	-4	-13
Pheasants per hunter-day	0.60	+9	-42
Pheasants per hunter	2.09	+9	-25

In northern Utah, hunters were told to expect poor hunting with success up slightly compared to 1986. Low breeding populations were noted but production was fair for those birds which made it through the winter. Fair to poor success was predicted throughout the state. We predicted 60,000 hunters and 120,000 harvest.

Total hunters decreased 5 percent from 1986 and remained below the long-term (1948-86) average. However, total harvest increased 4 percent from 1986. Hunter success (pheasants per hunter-day) also increased 9 percent from 1986. Pheasants per hunter also increased 9 percent.

Long-term trends (1970-87) of total hunters, hunter-days, harvest and hunter success are shown in Figure 1. Generally, the trend is toward less hunter-days with declines in total pheasants harvested and hunter success. We believe this is the result of the accumulated effects of loss of quantity and quality of habitat due to urbanization, flooding, and modern agricultural practices.

Field Bag Checks

A summary of pheasant field bag check data for 1987 is shown in Table 14. The hunter success trend determined via bag checks since 1982 is found in Table 15. A comparison of 1987 data, on a statewide basis, to 1986 and the 10-year average follow:

	1987	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total hunters checked	2,580	-20	-42
Total hours hunted	6,562	-28	-53
Pheasants per hunter (complete hunts)	0.32	-18	-55
Pheasants bagged per 100 hours	13	+8	-26
Average hours per hunter-day (complete hunts)	2.5	-26	-36
Hours hunted per pheasant bagged (complete)	7.8	-9	+34

Checking Station Report

Rain fell throughout the better pheasant areas in the state on October 30th in amounts ranging from a trace to 0.68 inches. Weather was generally fair over the State Saturday and Sunday (October 31 and November 1, 1987). Sunny and fair weather prevailed over northern Utah on Saturday, and temperatures were in mid-50's. Hunting conditions were cold and wet during opening hunt hours.

Hunting pressure was down in Central and Northeastern Utah. Pressure was about the same in other areas of the state. This is attributed to decreasing pheasant populations and to less land being accessible to hunters. Statewide hunter success was also down from 1986 on opening weekend but success over the entire season was about the same or slightly higher than the previous year. Of 104 birds checked at the Corrine check station on October 31 (opening day), 4 were banded and raised by the Corrine Sportsman's club.

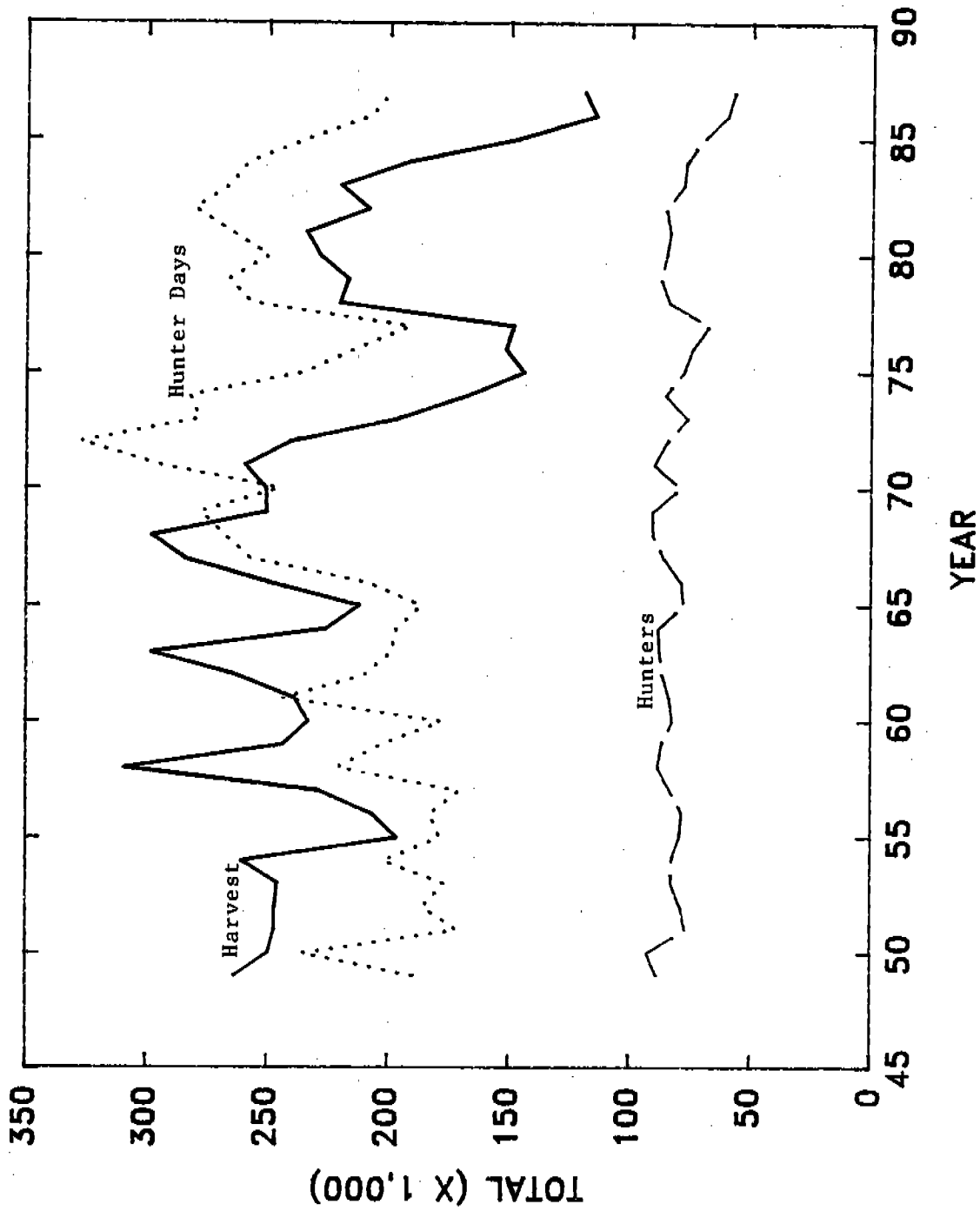


Figure 1. Statewide trend of pheasant harvest statistics.

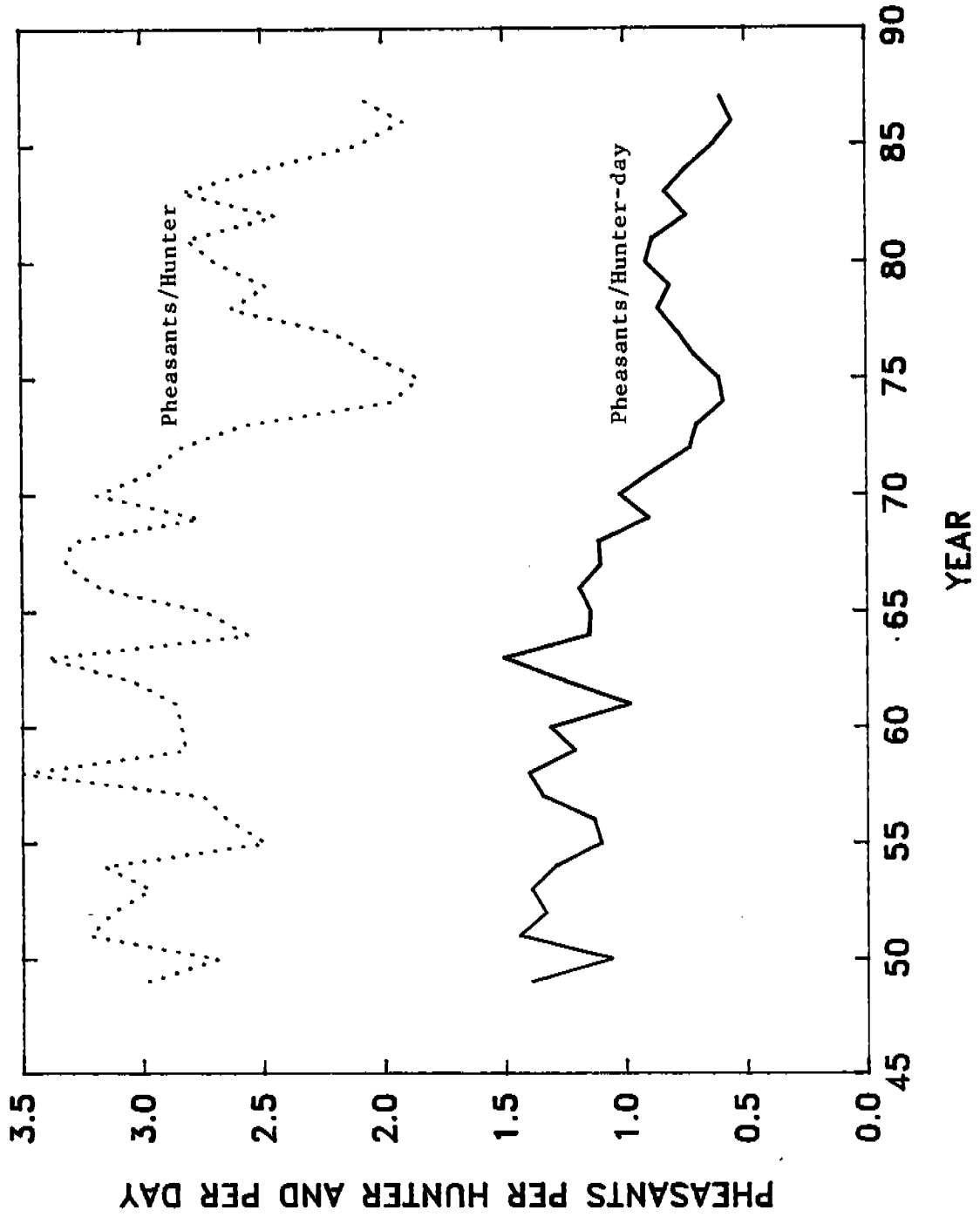


Figure 2. Statewide trend in pheasant hunter success rates, 1948-88.

Table 1. Summary of pheasant winter sex ratio counts, 1986-87.

Region and County	Roadside Observations			Flushing Observations			Effort Expended			Pheas. Obs./ 100 Hours of Road. Obs.					
	Cocks	Hens	Total	Hens/ Cocks/ 100	Cocks/ 100	Total	Hens/ Cocks/ 100	Vehicle Miles	Hours of Effort	Walk	Total				
Northern Region															
Box Elder	17	98	115	5.8	17	2	26	28	13.0	8	317	22	5	27	524
Cache	6	41	47	6.8	15	--	--	--	--	--	488	28	--	28	168
Davis	4	30	34	7.5	13	--	--	--	--	--	196	10	--	10	340
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	12	76	88	6.3	16	6	42	48	7.0	14	220	15	3	18	587
REGIONAL TOTALS	39	245	284	6.3	16	8	68	76	8.5	12	1,221	75	8	83	379
Central Region															
Juab	39	152	191	3.9	26	--	--	--	--	--	112	19	--	19	1,005
Salt Lake	10	45	55	4.5	22	--	--	--	--	--	--	--	--	--	--
Sanpete	11	67	78	6.1	16	--	--	--	--	--	9	2	--	2	3,900
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Utah	97	340	437	3.5	29	--	--	--	--	--	290	47	4	51	857
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	157	604	761	3.8	26	--	--	--	--	--	411	68	4	72	1,057
Southern Region															
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	96	331	427	3.4	29	--	--	--	--	--	133	30	0	10	4,270
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	36	155	191	9.6	23	7	14	21	2.0	50	100	10	1	11	209
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	132	486	618	3.7	27	7	14	21	2.0	50	233	20	1	21	2,943
Northeastern Region															
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	23	45	68	2.0	51	4	8	12	2.0	50	625	49	2	51	139
Uintah	28	17	45	0.6	165	3	5	8	1.7	60	310	31	6	37	145
REGIONAL TOTALS	51	62	113	1.2	82	7	13	20	1.9	54	935	80	8	88	141
Southeastern Region															
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	379	1,397	1,776	3.7	27	22	95	117	4.3	23	2,800	243	21	264	673

J Estimate

Table 2. Trend of pheasant winter sex ratio counts, 1981-87.

Region and County	1981-82		1982-83		1983-84		1984-85		1985-86		1986-87		Averages 1977-86	
	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr
Northern Region														
Box Elder	6.1	1,790	3.7	8,400	--	--	4.2	3,074	2.4	1,453	5.8	524	--	--
Cache	2.9	1,624	3.6	1,556	--	--	5.7	3,133	17.2	585	6.8	168	--	--
Davis	6.9	2,787	17.0	1,080	11.2	6,090	6.2	3,108	8.4	4,683	7.5	340	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	10.1	6,664	6.0	700	--	--	7.6	3,425	27.0	350	6.3	587	--	--
REGIONAL TOTALS	5.9	2,999	4.3	1,596	11.2	6,090	5.1	3,127	5.5	1,235	6.3	379	5.5	2,058
Central Region														
Juab	5.4	1,513	3.2	1,066	--	--	--	--	3.4	947	3.9	1,005	--	--
Salt Lake	3.8	1,205	1.3	973	--	--	--	--	0.0	0	4.5	--	--	--
Sanpete	8.2	5,445	7.7	4,328	--	--	--	--	0.0	0	6.1	3,900	--	--
Tooele	--	--	3.2	267	--	--	--	--	0.0	0	--	--	--	--
Utah	3.3	2,845	3.2	1,608	--	--	--	--	3.4	965	3.5	857	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	5.6	3,641	6.3	2,668	--	--	--	--	3.4	958	3.8	1,057	4.6	1,570
Southern Region														
Beaver	2.6	2,666	5.3	543	2.7	433	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	2.9	837	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	2.4	5,523	3.7	831	3.2	5,525	--	--	--	--	3.4	4,270	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	6.7	1,936	2.2	3,620	3.2	2,667	--	--	9.6	209	--	--
Washington	3.1	1,040	4.4	971	0.6	227	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	2.6	2,033	5.1	1,121	2.6	2,009	3.2	2,667	--	--	3.7	2,943	3.3	1,532
Northeastern Region														
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	1.9	600	1.5	553	1.7	1,113	1.4	145	1.5	241	2.0	139	--	--
Uintah	2.8	1,065	5.0	1,287	2.1	3,180	3.9	1,645	1.7	285	0.6	145	--	--
REGIONAL TOTALS	2.4	810	2.7	801	1.9	1,526	2.3	282	1.5	255	1.2	141	2.4	1,308
Southeastern Region														
Carbon	1.8	6,200	--	--	1.7	2,675	2.8	1,300	2.5	538	--	--	--	--
Emery	2.5	2,670	--	--	1.7	2,589	2.6	1,706	1.6	161	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	2.1	3,453	1.8	1,240	1.7	2,615	2.6	1,617	2.0	261	--	--	1.9	1,223
STATE TOTALS	4.6	2,838	5.5	1,900	2.6	2,104	3.8	1,116	3.9	594	3.7	673	3.8	1,437

Table 3. Pheasant summer inventory, 1987.

Region and County	No. Routes	Total Miles	Distinct Broods			Mixed Observ.			Adults w/o Young			Total Total Yng	Total Total Cocks	Total Total Hens	Total Total Pheas/ Mile	Yng/ Mile Brood	Mean Yng/ Ad Hens	% Hens w/Yng
			No.	Yng	Hens	Yng	Hens	Yng	Cocks	Hens	Yng							
Northern Region																		
Box Elder	2	170	14	84	4	22	8	6	24	106	8	138	0.81	0.62	6.0	4.42	75	
Cache	2	171	5	24	0	19	0	1	6	43	0	49	0.29	0.25	4.8	7.17	83	
Davis	1	91	16	71	8	18	2	3	27	89	2	118	1.30	0.98	4.4	3.30	89	
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Weber	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.0	0.00	0	
REGIONAL TOTALS	5	432	35	179	12	59	10	10	57	238	10	305	0.71	0.55	5.1	4.18	82	
Central Region																		
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Salt Lake	1	39	6	23	1	10	1	1	8	31	1	42	1.08	0.79	3.8	3.88	88	
Sanpete	2	145	23	110	24	69	3	8	55	179	3	237	1.63	1.23	4.8	3.25	85	
Tooele	1	60	1	4	0	0	0	0	1	4	0	5	0.08	0.07	4.0	4.00	100	
Utah	3	274	66	326	46	171	27	7	119	497	27	643	2.35	1.81	4.9	4.18	94	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	7	518	96	463	71	250	31	16	183	711	31	927	1.79	1.37	4.8	3.89	91	
Southern Region																		
Beaver	1	90	1	6	0	0	0	0	1	6	0	7	0.08	0.07	6.0	6.00	100	
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Iron	1	33	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0	
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Hillard	2	196	35	185	30	118	13	11	76	303	13	392	2.00	1.55	5.3	3.99	86	
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sevier	2	210	47	274	7	50	22	9	63	324	22	409	1.95	1.54	5.8	5.14	86	
Washington	1	45	2	10	0	0	2	7	9	10	2	21	0.47	0.22	5.0	1.11	22	
Wayne*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	7	574	85	475	37	168	37	27	149	643	37	829	1.44	1.12	5.6	4.32	82	
Northeastern Region																		
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	3	334	12	47	12	38	17	1	25	85	17	127	0.38	0.25	3.9	3.40	96	
Uintah	2	212	8	35	13	49	10	2	23	84	10	117	0.55	0.40	4.4	3.65	91	
REGIONAL TOTALS	5	546	20	82	25	87	27	3	48	169	27	244	0.45	0.31	4.1	3.52	94	
Southeastern Region																		
Carbon	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.0	0.00	0	
Emery	1	90	5	25	3	28	4	0	8	53	4	65	0.72	0.59	5.0	6.63	100	
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	1	90	5	25	3	28	4	0	8	53	4	65	0.72	0.59	5.0	6.63	100	
STATE TOTALS	25	2,160	241	1,224	148	592	109	56	445	1,814	109	2,370	1.10	0.84	5.1	4.08	87	

*Data collected by Southeastern Region, (included in S.E. regional totals).

Table 4. Trend of pheasants observed per mile during summer roadside counts, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	0.60	0.78	0.41	1.03	1.40	0.74	1.43	0.46	0.91	0.44	0.81	
Cache	0.22	0.71	0.34	0.08	0.92	0.17	0.04	0.19	0.03	0.01	0.29	
Davis	1.67	1.59	1.47	1.77	1.38	0.83	1.07	0.34	0.71	1.04	1.30	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	1.30	1.01	1.55	2.03	3.17	1.79	--	1.56	--	0.86	--	
REGIONAL TOTALS	0.85	0.96	0.76	1.23	1.56	0.78	0.63	0.48	0.50	0.43	0.71	0.82
Central Region												
Juab	0.54	0.09	0.13	0.94	0.89	0.61	0.44	0.77	0.48	0.71	--	
Salt Lake	0.29	0.09	0.64	0.60	1.09	1.24	--	1.80	0.46	2.10	1.08	
Sanpete	1.23	1.28	1.85	2.18	5.25	1.78	1.74	0.99	1.87	1.15	1.63	
Tooele	0.77	1.11	3.83	1.08	0.48	0.45	--	--	--	0.20	0.08	
Utah	0.98	1.96	4.14	1.90	2.19	3.89	1.95	2.21	--	2.13	2.35	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	0.93	1.40	2.83	1.68	2.01	2.15	1.72	1.49	1.35	1.61	1.79	1.72
Southern Region												
Beaver	0.49	0.71	1.01	0.47	0.63	0.66	0.23	0.11	0.63	0.23	0.08	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	0.30	0.49	0.97	0.67	1.24	0.07	0.31	--	0.06	0.01	0.00	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	0.49	1.38	1.11	0.88	2.85	1.15	1.28	1.09	2.27	0.98	2.00	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	0.88	1.72	1.10	1.13	0.87	1.37	1.27	1.52	0.62	1.82	1.95	
Washington	0.57	1.40	1.36	0.70	1.41	0.62	1.09	--	0.13	1.30	0.47	
Wayne	0.03	2.10	0.21	--	1.04	0.40	0.26	--	0.39	0.38	--	
REGIONAL TOTALS	0.57	1.29	1.08	0.86	1.65	1.05	0.94	1.09	1.25	1.07	1.44	1.09
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	0.39	0.68	0.38	0.56	0.84	0.73	0.72	0.68	0.16	0.44	0.38	
Uintah	1.15	1.75	1.90	1.60	1.05	1.27	2.97	1.33	0.35	0.46	0.55	
REGIONAL TOTALS	0.65	1.02	0.90	0.93	0.91	0.90	1.39	0.91	0.22	0.45	0.45	0.83
Southeastern Region												
Carbon	0.23	0.22	0.40	0.37	1.22	0.28	0.42	--	0.12	0.26	0.00	
Emery	0.61	0.53	0.39	0.49	0.74	0.74	0.32	0.66	0.83	0.73	0.72	
Grand	--	--	--	--	--	--	1.70	--	--	--	--	
San Juan	0.93	0.00	0.35	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	0.44	0.35	0.38	0.45	0.86	0.61	0.39	0.66	0.59	0.51	0.72	0.52
STATE TOTALS	0.71	1.02	1.37	1.10	1.46	1.19	1.06	0.94	0.81	0.90	1.10	1.06

Table 5. Trend of young observed per mile during summer roadside pheasant counts, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	0.41	0.55	0.03	0.69	1.07	0.44	0.63	0.26	0.65	0.29	0.62	
Cache	0.17	0.47	0.20	0.07	0.70	0.11	0.00	0.13	0.02	0.00	0.25	
Davis	1.17	1.26	0.99	1.27	0.81	0.43	0.78	0.16	0.35	0.85	0.98	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	0.84	0.62	1.22	1.53	2.38	1.38	1.27			0.76	0.00	
REGIONAL TOTALS	0.58	0.68	0.55	0.88	1.15	0.52	0.35	0.32	0.33	0.32	0.55	0.57
Central Region												
Juab	0.46	0.76	0.02	0.85	0.63	0.42	0.36	0.58	0.39	0.57	--	
Salt Lake	0.21	0.07	0.44	0.32	0.57	0.84	--	1.26	0.31	1.62	0.79	
Sanpete	0.98	1.06	1.53	1.72	4.40	1.44	1.44	0.76	1.54	0.90	1.23	
Tooele	0.45	0.72	2.95	0.76	0.28	0.22	--	--	--	0.08	0.07	
Utah	0.60	1.43	3.00	1.30	1.68	2.52	1.34	1.26	--	1.68	1.81	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	0.63	1.06	2.11	1.21	1.51	1.63	1.31	0.99	1.09	1.26	1.37	1.28
Southern Region												
Beaver	0.33	0.58	0.87	0.37	0.54	0.48	0.17	0.08	0.51	0.14	0.07	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	0.17	0.38	0.74	0.53	1.07	0.04	0.23	--	0.05	--	0.00	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	0.34	1.12	0.89	0.69	2.27	0.83	1.00	0.89	1.98	0.76	1.55	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	0.70	1.45	0.93	0.90	0.67	1.07	0.94	1.19	1.25	1.48	1.54	
Washington	0.37	1.08	1.02	0.49	0.89	0.43	0.68	--	--	0.86	0.22	
Wayne	0.00	1.76	0.15	--	0.87	0.21	0.12	--	0.28	0.19	--	
REGIONAL TOTALS	0.41	1.05	0.87	0.67	1.30	0.76	0.68	0.86	1.03	0.84	1.12	0.85
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	0.25	0.53	0.27	0.37	0.52	0.54	0.55	0.46	0.07	0.29	0.25	
Uintah	0.79	1.41	1.50	1.20	0.83	0.95	2.25	1.12	0.29	0.33	0.40	
REGIONAL TOTALS	0.44	0.81	0.69	0.66	0.63	0.66	1.06	0.69	0.14	0.30	0.31	0.61
Southeastern Region												
Carbon	0.03	0.15	0.30	0.22	0.93	0.18	0.27	--	0.02	0.15	--	
Emery	0.33	0.35	0.28	0.35	0.52	0.45	0.18	0.45	0.63	0.56	0.59	
Grand	--	--	--	--	--	--	1.10	--	--	--	--	
San Juan	0.40	--	0.00	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	0.18	0.24	0.26	0.31	0.65	0.68	0.23	0.45	0.42	0.34	0.59	0.38
STATE TOTALS	0.47	0.78	1.04	0.80	1.10	0.87	0.77	0.68	0.63	0.69	0.84	0.78

Table 6. Trend of young per adult hen ratios found during summer roadside pheasant counts, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	3.68	3.64	3.92	2.60	4.09	3.00	1.41	2.44	3.63	2.38	4.42	
Cache	4.00	2.80	2.40	4.00	4.18	3.43	0.00	3.40	1.50	0.00	7.17	
Davis	3.18	4.71	2.30	2.78	1.81	1.25	3.31	1.67	1.26	5.92	3.30	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	2.12	1.81	4.13	3.97	3.38	4.70	--	5.50	--	7.33	--	
REGIONAL TOTALS	2.88	3.10	3.14	3.07	3.39	3.00	1.98	3.23	2.60	3.92	4.18	3.03
Central Region												
Juab	8.00	5.60	1.00	9.67	4.29	3.75	6.50	4.20	4.33	4.00	--	
Salt Lake	5.33	6.00	3.27	1.70	2.04	2.73	--	3.58	3.13	5.10	3.88	
Sarpete	5.09	6.03	5.91	4.97	6.71	5.48	5.85	5.38	6.10	3.98	3.25	
Tooele	1.93	2.69	3.93	2.88	2.43	2.17	--	--	--	1.50	4.00	
Utah	2.53	3.42	3.20	2.65	3.80	3.53	2.51	1.66	--	4.16	4.18	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	3.19	3.88	3.59	3.23	4.08	3.95	3.69	2.59	5.61	4.18	3.89	3.80
Southern Region												
Beaver	3.33	4.72	6.00	6.29	7.00	4.89	3.75	2.33	5.11	2.60	6.00	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	6.00	5.00	4.25	5.14	8.56	3.00	5.33	--	3.00	--	0.00	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	3.57	6.05	5.52	6.00	4.65	4.48	6.37	6.24	8.95	4.04	3.99	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	4.90	6.67	5.96	4.44	4.18	3.94	3.49	4.64	4.58	5.22	5.14	
Washington	2.47	4.52	4.95	5.50	2.69	3.46	2.23	--	--	2.78	1.11	
Wayne	--	7.57	5.00	--	8.75	1.67	3.33	--	3.17	2.43	--	
REGIONAL TOTALS	3.88	5.85	5.44	5.16	4.66	3.93	3.69	5.05	5.92	4.43	4.32	4.80
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	3.41	5.11	5.82	4.22	2.94	6.10	5.03	3.81	3.00	3.73	3.40	
Uintah	3.06	5.63	5.25	3.22	5.50	4.96	5.16	13.00	11.50	4.13	3.65	
REGIONAL TOTALS	3.18	5.39	5.39	3.52	3.73	5.54	5.11	6.38	5.83	3.88	3.52	4.80
Southeastern Region												
Carbon	0.42	3.00	4.80	5.00	7.91	5.67	3.13	--	0.50	3.00	--	
Emery	2.36	2.61	4.29	3.37	3.97	2.56	2.93	3.75	4.17	5.15	6.63	
Grand	--	--	--	--	--	--	5.50	--	--	--	--	
San Juan	1.20	0.00	0.00	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	1.62	2.70	3.00	3.65	4.98	4.93	3.21	3.75	3.80	4.04	6.63	3.57
STATE TOTALS	3.11	4.32	4.05	3.60	4.12	3.88	3.85	3.92	5.04	4.20	4.08	4.01

Table 7. Trend of the percent of hens observed with broods during summer roadside pheasant counts, 1977-1987.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	79	80	62	68	83	73	52	56	74	48	75	
Cache	100	60	60	100	77	71	0	100	50	--	83	
Davis	58	88	80	63	71	67	75	33	42	85	89	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	44	39	70	100	91	91	--	92	--	100	--	
REGIONAL TOTALS	58	64	71	76	80	76	57	66	60	62	82	67
Central Region												
Juab	100	100	--	100	100	100	100	80	100	100	--	
Salt Lake	100	100	64	71	57	62	--	79	63	90	88	
Sanpete	85	90	100	83	97	92	92	90	92	76	85	
Tooele	57	69	96	75	71	67	--	--	--	50	100	
Utah	61	69	57	64	66	71	60	63	--	86	94	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	67	74	66	82	72	76	71	70	56	84	91	72
Southern Region												
Beaver	56	73	77	71	86	89	50	33	89	80	100	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	100	86	83	86	100	100	100	--	100	--	0	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	68	85	88	87	83	73	94	100	84	98	86	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	90	97	96	96	82	83	76	91	88	87	86	
Washington	73	87	95	33	66	77	83	--	--	64	22	
Wayne	--	100	100	--	88	78	--	--	83	100	--	
REGIONAL TOTALS	76	89	90	87	81	80	83	91	85	88	82	85
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	81	83	88	77	68	66	82	67	75	73	96	
Uintah	61	95	87	92	100	86	75	86	75	73	91	
REGIONAL TOTALS	68	90	88	87	78	75	77	72	75	73	94	78
Southeastern Region												
Carbon	17	44	100	75	100	67	63	--	50	66	--	
Emery	55	48	43	68	72	58	64	65	67	92	100	
Grand	--	--	--	--	--	--	100	--	--	--	--	
San Juan	60	0	0	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	44	48	56	70	79	59	67	65	65	91	100	64
STATE TOTALS	65	76	73	77	79	75	74	75	62	83	87	74

Table 8. Trend of average brood size for pheasants, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	4.67	5.71	6.38	3.40	4.90	4.13	4.00	4.63	5.77	5.33	6.0	6.0
Cache	4.00	4.60	3.50	4.00	5.93	6.50	0.00	3.40	3.00	0.00	4.8	4.8
Davis	5.73	4.79	4.00	5.13	3.64	2.00	5.40	3.33	3.50	5.12	4.4	4.4
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	6.57	4.80	6.00	4.37	3.70	5.66	--	6.00	--	6.33	--	--
REGIONAL TOTALS	5.29	5.00	5.22	4.21	4.48	4.88	4.58	4.72	5.11	5.41	5.1	4.89
Central Region												
Juab	8.00	5.60	--	4.00	3.80	3.75	6.50	6.00	4.33	4.67	--	--
Salt Lake	5.33	6.00	5.13	3.33	4.67	4.44	--	4.75	5.00	5.70	3.8	3.8
Sanpete	4.92	6.56	5.98	5.43	7.24	5.93	6.39	6.38	8.28	5.10	4.8	4.8
Tooele	3.33	4.57	8.93	3.83	3.67	3.50	--	--	--	3.00	4.0	4.0
Utah	4.56	4.91	5.45	4.09	5.38	4.99	4.02	2.95	--	4.75	4.9	4.9
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	4.70	5.29	5.81	4.46	5.66	5.15	5.01	3.75	7.42	4.89	4.8	5.21
Southern Region												
Beaver	6.00	6.50	7.10	7.25	6.50	5.00	6.50	7.00	5.75	3.25	6.0	6.0
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	6.00	5.00	4.25	6.00	8.14	3.00	5.33	--	--	--	0.0	0.0
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	5.23	6.88	6.31	6.38	6.30	6.30	6.40	6.00	10.63	3.72	5.3	5.3
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	6.17	6.40	5.94	4.70	5.00	4.56	5.14	5.10	5.17	5.69	5.8	5.8
Washington	3.57	6.33	5.00	--	5.90	4.40	3.90	--	--	4.14	5.0	5.0
Wayne	--	10.25	5.00	--	1.00	2.00	--	--	3.33	2.25	--	--
REGIONAL TOTALS	5.45	6.71	5.96	5.49	6.14	4.98	5.18	5.42	7.35	4.70	5.6	5.74
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	4.55	6.54	6.60	5.50	4.58	7.31	4.50	5.87	4.00	5.75	3.9	3.9
Uintah	5.00	5.75	5.56	3.30	5.50	4.25	5.11	5.50	6.33	5.71	4.4	4.4
REGIONAL TOTALS	4.80	6.12	5.93	3.90	4.89	5.84	4.87	5.72	4.78	5.74	4.1	5.26
Southeastern Region												
Carbon	2.50	6.75	3.33	6.67	7.67	6.00	3.00	--	1.00	--	--	--
Emery	4.33	5.27	6.00	7.00	6.00	4.42	6.60	5.00	5.20	6.89	5.0	5.0
Grand	--	--	--	--	--	--	5.50	--	--	--	--	--
San Juan	4.00	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	4.07	5.67	5.00	6.86	6.24	4.64	5.30	5.00	4.82	5.46	5.0	5.31
STATE TOTALS	4.94	5.69	5.79	4.58	5.45	5.11	5.03	4.78	6.71	4.94	5.1	5.30

Table 9. Summary of pheasant hunter success and distribution of harvest and hunting pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	269	17,306	10,737	0.62	8.67	9.00
Cache	165	11,153	5,760	0.52	5.59	4.83
Davis	208	16,816	7,305	0.43	8.43	6.12
Morgan	5	245	171	0.70	0.12	0.14
Rich	1	24	24	1.00	0.01	0.02
Summit	2	73	49	0.67	0.03	0.04
Weber	191	16,350	6,520	0.40	8.19	5.46
REGIONAL TOTALS	841	61,971	30,569	0.49	31.06	25.63
<u>Central Region</u>						
Juab	107	6,300	4,142	0.66	3.15	3.47
Salt Lake	165	11,791	5,344	0.45	5.91	4.48
Sanpete	247	15,492	11,374	0.73	7.76	9.53
Tooele	102	5,981	3,333	0.56	2.99	2.79
Utah	604	41,330	28,264	0.68	20.72	23.70
Wasatch	5	465	147	0.32	0.23	0.12
REGIONAL TOTALS	1,230	81,362	52,607	0.65	40.78	44.12
<u>Southern Region</u>						
Beaver	18	1,470	539	0.37	0.73	0.45
Garfield	2	171	24	0.14	0.08	0.02
Iron	28	1,397	392	0.28	0.70	0.32
Kane	0	0	0	0.00	0.00	0.00
Millard	158	10,957	7,501	0.68	5.49	6.29
Piute	8	441	294	0.67	0.22	0.24
Sevier	180	12,943	8,432	0.65	6.48	7.07
Washington	18	1,421	294	0.21	0.71	0.24
Wayne	3	833	196	0.24	0.41	0.16
REGIONAL TOTALS	415	29,637	17,674	0.60	14.85	14.82
<u>Northeastern Region</u>						
Daggett	3	196	98	0.50	0.09	0.08
Duchesne	102	7,207	6,275	0.87	3.61	5.26
Uintah	100	7,109	5,662	0.80	3.56	4.74
REGIONAL TOTALS	205	14,512	12,036	0.83	7.27	10.09
<u>Southeastern Region</u>						
Carbon	47	3,530	1,642	0.47	1.76	1.37
Emery	87	7,403	3,579	0.48	3.71	3.00
Grand	4	514	441	0.86	0.25	0.37
San Juan	6	343	563	1.64	0.17	0.47
REGIONAL TOTALS	144	11,791	6,226	0.53	5.91	5.22
Unknown Counties	2	196	122	0.63	0.09	0.10
STATE TOTALS	2,837	199,470	119,236	0.60	100	100

*Total hunter trips from questionnaire returns.

Table 10. Summary of pheasants bagged per hunter-day by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
Northern Region								
Box Elder	1.11	1.03	0.86	0.99	0.81	0.66	0.52	0.62
Cache	0.97	0.88	0.74	0.82	0.66	0.42	0.44	0.52
Davis	0.65	0.65	0.63	0.58	0.56	0.46	0.36	0.43
Morgan	0.56	0.57	0.64	0.58	0.44	0.05	0.18	0.70
Rich	0.00	0.00	0.00	(0.67)	(0.80)	(0.17)	0.00	1.00
Summit	0.00	0.00	0.00	(0.96)	(0.80)	(0.00)	0.00	0.67
Weber	0.77	0.72	0.63	0.72	0.69	0.55	0.39	0.40
REGIONAL TOTALS	0.86	0.84	0.71	0.78	0.68	0.53	0.42	0.49
Central Region								
Juab	1.00	0.89	0.76	1.00	0.86	0.70	0.64	0.66
Salt Lake	0.70	0.68	0.57	0.66	0.51	0.53	0.40	0.45
Sanpete	1.18	1.18	1.00	1.20	1.08	0.98	0.72	0.73
Tooele	0.73	0.65	0.43	0.60	0.58	0.60	0.44	0.56
Utah	0.92	0.91	0.73	0.81	0.82	0.65	0.64	0.68
Wasatch	0.00	0.00	0.00	(0.21)	(0.29)	(0.55)	0.17	0.32
REGIONAL TOTALS	0.90	0.89	0.71	0.83	0.79	0.69	0.60	0.65
Southern Region								
Beaver	0.86	1.06	0.77	0.72	0.66	0.52	0.56	0.37
Garfield	0.69	0.53	0.81	0.41	0.52	0.17	0.58	0.14
Iron	0.83	0.74	0.69	0.61	0.43	0.49	0.32	0.28
Kane	0.00	0.00	0.00	(1.00)	(0.50)	(0.00)	(0.00)	0.00
Millard	1.24	1.02	0.97	1.10	0.92	0.88	0.77	0.68
Piute	0.88	0.85	1.00	0.80	0.66	0.56	0.83	0.67
Sevier	1.01	1.03	0.89	0.96	0.87	0.71	0.68	0.65
Washington	0.63	0.45	0.39	0.43	0.24	0.42	0.40	0.21
Wayne	1.43	0.67	0.88	0.50	0.25	1.22	0.33	0.24
REGIONAL TOTALS	1.03	0.95	0.85	0.89	0.79	0.73	0.67	0.60
Northeastern Region								
Daggett	0.00	0.00	0.00	(0.67)	(0.00)	(0.50)	0.00	0.50
Duchesne	1.13	1.09	1.05	1.15	0.99	0.88	0.84	0.87
Uintah	1.09	0.98	0.93	0.98	0.86	0.62	0.79	0.80
REGIONAL TOTALS	1.11	1.04	0.99	1.06	0.92	0.75	0.81	0.83
Southeastern Region								
Carbon	0.94	0.70	0.54	0.59	0.44	0.42	0.39	0.47
Emery	0.85	0.85	0.57	0.60	0.65	0.58	0.46	0.48
Grand	0.33	0.63	0.94	2.44	0.38	(2.00)	(0.50)	0.86
San Juan	0.29	0.68	0.50	0.76	2.50	0.40	0.58	1.64
REGIONAL TOTALS	0.87	0.78	0.56	0.62	0.57	0.51	0.44	0.53
Unknown Counties	1.17	0.77	0.48	1.03	0.47	1.00	0.40	0.63
STATE TOTALS	0.91	0.88	0.74	0.83	0.74	0.63	0.55	0.60

()Data may be biased because small sample size inflated county harvest beyond reasonable estimate for known pheasant populations.

Table 11. Percentage distribution of pheasant harvest by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>								
Box Elder	12.35	12.94	12.40	13.87	10.02	9.84	8.16	9.00
Cache	7.94	8.66	7.07	7.22	4.92	3.61	4.07	4.83
Davis	7.61	5.33	8.27	7.57	7.84	7.34	5.80	6.12
Morgan	0.20	0.23	0.20	0.13	0.08	0.01	0.05	0.14
Rich	0.00	0.00	0.00	(0.02)	(0.04)	(0.01)	0.00	0.02
Summit	0.00	0.00	0.00	(0.15)	0.13	0.00	0.00	0.04
Weber	10.03	7.79	10.18	10.66	12.82	12.28	8.81	5.46
<u>REGIONAL TOTALS</u>	<u>38.13</u>	<u>34.95</u>	<u>38.12</u>	<u>39.46</u>	<u>35.69</u>	<u>33.08</u>	<u>26.90</u>	<u>25.63</u>
<u>Central Region</u>								
Juab	1.75	3.19	2.10	1.87	1.80	2.13	2.95	3.47
Salt Lake	6.29	4.88	5.96	5.86	4.64	5.28	4.90	4.48
Sanpete	7.17	7.28	7.47	7.84	9.11	10.25	10.32	9.53
Tooele	1.52	2.05	1.83	2.08	2.29	2.61	2.63	2.79
Utah	17.65	17.89	16.54	15.73	18.69	17.24	22.25	23.70
Wasatch	0.00	0.00	0.00	(0.02)	(0.06)	(0.09)	(0.02)	0.12
<u>REGIONAL TOTALS</u>	<u>34.38</u>	<u>35.29</u>	<u>33.90</u>	<u>33.38</u>	<u>36.52</u>	<u>37.52</u>	<u>43.07</u>	<u>44.12</u>
<u>Southern Region</u>								
Beaver	0.51	0.91	0.68	0.40	0.58	0.51	0.65	0.45
Garfield	0.07	0.08	0.32	0.05	0.12	0.04	0.13	0.02
Iron	0.88	1.08	1.00	0.83	0.35	0.72	0.47	0.32
Kane	0.00	0.00	--	(0.01)	(0.04)	0.00	0.00	0.00
Millard	5.76	7.77	5.37	4.17	6.93	7.85	8.30	6.29
Piute	0.22	0.30	0.13	0.09	0.24	0.13	0.18	0.24
Sevier	5.04	5.37	5.86	5.04	6.06	6.58	7.42	7.07
Washington	0.86	0.58	0.48	0.50	0.35	0.70	0.61	0.24
Wayne	0.07	0.09	0.11	0.03	0.01	0.16	0.04	0.16
<u>REGIONAL TOTALS</u>	<u>13.43</u>	<u>16.17</u>	<u>13.95</u>	<u>11.11</u>	<u>14.74</u>	<u>16.70</u>	<u>17.80</u>	<u>14.82</u>
<u>Northeastern Region</u>								
Daggett	0.00	0.00	--	(0.00)	(0.00)	(0.03)	0.00	0.08
Duchesne	4.69	4.60	5.51	6.17	4.64	5.04	4.11	5.26
Uintah	5.00	3.99	5.13	6.03	4.87	3.72	4.16	4.74
<u>REGIONAL TOTALS</u>	<u>9.69</u>	<u>8.58</u>	<u>10.64</u>	<u>12.20</u>	<u>9.74</u>	<u>8.76</u>	<u>8.27</u>	<u>10.09</u>
<u>Southeastern Region</u>								
Carbon	1.60	1.73	1.51	1.40	1.01	1.26	1.37	1.37
Emery	2.50	2.84	1.46	1.80	2.13	2.44	2.32	3.00
Grand	0.01	0.11	0.13	0.13	0.05	0.06	0.11	0.37
San Juan	0.01	0.12	0.11	0.10	0.05	0.03	0.13	0.47
<u>REGIONAL TOTALS</u>	<u>4.13</u>	<u>4.80</u>	<u>3.20</u>	<u>3.44</u>	<u>3.25</u>	<u>3.78</u>	<u>3.93</u>	<u>5.22</u>
Unknown Counties	0.24	0.21	0.19	0.40	0.30	0.16	0.04	0.10
<u>STATE TOTALS</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>

() Data included in unknown counties because small sample size inflated county harvest beyond reasonable estimate for known pheasant populations.

Table 12. Percentage distribution of pheasant hunting pressure by county hunted, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
Northern Region								
Box Elder	10.20	11.07	10.77	11.62	9.26	9.38	8.60	8.67
Cache	7.51	8.65	7.11	7.30	5.53	5.39	5.16	5.59
Davis	10.71	7.24	9.83	10.75	10.33	10.00	8.92	8.43
Morgan	0.33	0.33	0.23	0.19	0.14	0.20	0.17	0.12
Rich	0.00	0.00	—	—	(0.04)	(0.05)	0.00	0.01
Summit	0.00	0.00	—	—	(0.12)	(0.04)	(0.01)	0.03
Weber	11.91	9.62	11.92	12.20	13.93	14.05	12.36	8.19
REGIONAL TOTALS	40.66	36.93	39.86	42.06	39.20	39.03	35.22	31.06
Central Region								
Juab	1.60	3.16	2.05	1.55	1.55	1.91	2.54	3.15
Salt Lake	8.21	6.34	7.74	7.31	6.79	6.31	6.72	5.91
Sanpete	5.57	5.46	5.55	5.39	6.28	6.55	7.86	7.76
Tooele	1.89	2.77	3.18	2.85	2.93	2.76	3.29	2.99
Utah	17.64	17.30	16.94	16.00	16.90	16.81	19.12	20.72
Wasatch	0.00	0.00	—	—	(0.17)	(0.10)	(0.06)	0.23
REGIONAL TOTALS	34.91	35.03	35.46	33.10	34.46	34.34	39.59	40.78
Southern Region								
Beaver	0.54	0.74	0.66	0.46	0.65	0.66	0.64	0.73
Garfield	0.09	0.14	0.29	0.11	0.17	0.17	0.12	0.08
Iron	0.97	1.28	1.07	1.12	0.61	0.91	0.80	0.70
Kane	0.00	0.00	—	—	(0.06)	(0.02)	(0.02)	0.00
Millard	4.24	6.74	4.12	3.15	5.61	5.60	5.95	5.49
Piute	0.23	0.31	0.10	0.10	0.28	0.15	0.12	0.22
Sevier	4.57	4.60	4.90	4.34	5.17	5.83	6.00	6.48
Washington	1.24	1.14	0.91	0.95	1.10	1.04	0.84	0.71
Wayne	0.05	0.12	0.09	0.05	0.31	0.08	0.06	0.41
REGIONAL TOTALS	11.93	15.07	12.14	10.28	13.89	14.39	14.56	14.85
Northeastern Region								
Daggett	0.00	0.00	—	—	(0.06)	(0.04)	(0.02)	0.09
Duchesne	3.78	3.71	3.91	4.45	3.48	3.58	2.69	3.61
Uintah	4.20	3.59	4.10	5.08	4.24	3.77	2.91	3.56
REGIONAL TOTALS	7.98	7.30	8.01	9.53	7.72	7.34	5.62	7.27
Southeastern Region								
Carbon	1.57	2.18	2.08	1.97	1.71	1.90	1.92	1.76
Emery	2.67	2.95	1.89	2.51	2.43	2.66	2.79	3.71
Grand	0.04	0.15	0.10	0.04	0.10	0.02	0.12	0.25
San Juan	0.05	0.15	0.16	0.10	0.02	0.05	0.12	0.17
REGIONAL TOTALS	4.33	5.43	4.23	4.62	4.25	4.63	4.94	5.91
Unknown Counties	0.19	0.24	0.31	0.32	0.47	0.25	0.05	0.09
STATE TOTALS	100	100	100	100	100	100	100	100

()Data combined in unknown counties because of small sample size.

Table 13. Statewide summary of pheasant harvest statistics, 1948-1987.

Year	Total Hunters	Total Harvest	Hunters-days Afield	Pheasants Per Hunter-day	Pheasants Per Hunter
1948	96,534	280,914	--	--	2.91
1949	88,369	263,340	189,453	1.39	2.98
1950	92,724	249,428	235,309	1.06	2.69
1951	76,576	246,575	171,233	1.44	3.22
1952	78,773	246,559	185,383	1.33	3.13
1953	82,595	245,307	176,480	1.39	2.97
1954	82,370	260,289	201,774	1.29	3.16
1955	78,793	196,195	178,359	1.10	2.49
1956	77,826	206,239	182,512	1.13	2.65
1957	83,025	228,319	170,387	1.34	2.75
1958	88,290	309,015	220,725	1.40	3.50
1959	86,268	243,276	202,730	1.21	2.82
1960	81,976	232,812	177,719	1.31	2.84
1961	83,493	238,439	243,305	0.98	2.86
1962	86,336	262,448	209,921	1.25	3.04
1963	87,647	297,873	198,582	1.50	3.40
1964	88,242	225,775	196,314	1.15	2.56
1965	77,409	211,876	186,215	1.14	2.74
1966	78,721	249,814	209,082	1.19	3.17
1967	85,664	284,000	257,033	1.10	3.32
1968	90,453	297,752	267,788	1.11	3.29
1969	90,573	250,241	277,887	0.90	2.76
1970	78,585	250,503	244,958	1.02	3.19
1971	87,878	259,189	294,618	0.88	2.95
1972	84,311	240,573	327,669	0.73	2.85
1973	75,968	196,012	278,033	0.70	2.58
1974	85,252	167,408	282,294	0.59	1.96
1975	77,566	143,783	234,615	0.61	1.85
1976	74,029	151,476	214,023	0.71	2.05
1977	67,195	148,168	191,142	0.78	2.21
1978	83,800	220,398	257,305	0.86	2.63
1979	87,462	216,700	266,245	0.81	2.48
1980	84,868	228,442	249,770	0.91	2.69
1981	83,408	234,217	265,381	0.88	2.81
1982	85,368	208,437	280,624	0.74	2.44
1983	77,847	220,074	265,731	0.83	2.83
1984	76,840	192,190	258,169	0.74	2.50
1985	69,889	146,807	233,328	0.63	2.10
1986	59,987	114,389	207,346	0.55	1.91
1987	57,118	119,236	199,470	0.60	2.09
TOTALS (1948-87)	3,260,028	8,984,488	8,888,912	(39.28)	(110.37)
AVERAGES (1948-86)	82,126	227,314	228,670	1.03	2.78

Table 14. Pheasant field bag check summary, 1987.

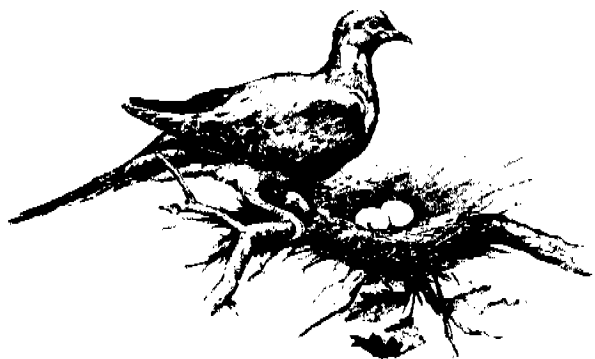
Region and County	ALL HUNTS				COMPLETE HUNTS						
	Total Parties	Total Hunters	Total Hours	Total Birds/100 Hr	Total Hunts	Total Hunters	Total Hours	Total Birds/100 Hr			
<u>Northern Region</u>											
Box Elder	282	596	1,598	159	10	204	393	992	113	11	0.29
Cache	79	202	493	57	12	2	4	16	5	31	1.25
Davis	100	209	709	78	11	16	25	112	20	18	0.80
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	238	479	717	61	9	197	384	541	50	9	0.13
REGIONAL TOTALS	699	1,486	3,517	355	10	419	806	1,661	188	11	0.23
<u>Central Region</u>											
Juab	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--
Utah	173	365	970	188	19	87	185	528	125	24	0.68
Wasatch	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	173	365	970	188	19	87	185	528	125	24	0.68
<u>Southern Region</u>											
Beaver	15	63	90	11	12	1	17	51	3	6	0.18
Garfield	3	6	8	1	12	--	--	--	--	--	--
Iron	3	4	7	0	0	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--
Millard	46	145	466	55	12	6	14	74	7	9	0.50
Piute	--	--	--	--	--	--	--	--	--	--	--
Sevier	19	60	189	22	12	2	3	9	5	6	1.67
Washington	17	40	56	12	21	5	9	12	2	17	0.22
Wayne	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	103	318	816	101	12	14	43	146	17	12	0.40
<u>Northeastern Region</u>											
Daggett	--	--	--	--	--	--	--	--	--	--	--
Duchesne	64	187	634	97	15	5	12	45	6	13	0.50
Uintah	15	56	166	30	18	--	--	--	--	--	--
REGIONAL TOTALS	79	243	800	127	16	5	12	45	6	13	0.50
<u>Southeastern Region</u>											
Carbon	13	45	107	8	7	2	3	8	0	0	0.00
Emery	50	123	352	39	11	20	66	393	22	6	0.33
Grand	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	63	168	459	47	10	22	69	401	22	5	0.32
STATE TOTALS	1,117	2,580	6,562	818	12	547	1,115	2,781	358	13	0.32

Table 15. Pheasant hunter success trend as determined by field bag check, 1982-87.

Region and County	1982		1983		1984		1985		1986		1987	
	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter
<u>Northern Region</u>												
Box Elder	16	0.44	22	0.50	15	0.38	9	0.31	5	0.14	11	0.29
Cache	10	0.36	--	--	16	0.47	5	0.13	--	--	31	1.25
Davis	14	0.34	12	0.35	13	0.34	16	0.46	6	0.19	18	0.80
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	19	0.39	24	0.59	15	0.35	7	0.18	12	0.21	9	0.13
REGIONAL TOTALS	16	0.41	20	0.47	15	0.38	9	0.27	7	0.16	11	0.23
<u>Central Region</u>												
Juab	21	0.32	54	0.35	--	--	--	--	--	--	--	--
Salt Lake	28	1.66	4	0.06	--	--	--	--	--	--	--	--
Sanpete	25	1.12	34	0.97	--	--	--	--	--	--	--	--
Tooele	118	1.86	80	2.18	--	--	--	--	--	--	--	--
Utah	21	0.58	26	0.86	53	1.62	35	0.88	28	0.74	24	0.68
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	24	0.75	31	0.31	53	1.62	35	0.88	28	0.74	24	0.68
<u>Southern Region</u>												
Beaver	20	1.08	--	--	24	0.31	14	0.37	--	--	6	0.18
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	12	0.40	12	0.71	16	0.66	12	0.59	10	0.48	9	0.50
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	22	0.92	22	1.01	23	0.94	16	0.66	14	0.65	6	1.67
Washington	--	--	21	0.70	--	--	6	0.07	33	0.50	17	0.22
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	17	0.64	15	0.82	17	0.68	14	0.61	11	0.51	12	0.40
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	15	1.48	22	1.87	18	0.84	11	0.40	38	1.50	13	0.50
Uintah	16	1.21	19	1.47	25	0.77	15	0.37	17	0.50	--	--
REGIONAL TOTALS	15	1.36	21	1.64	21	0.80	21	0.38	24	0.79	13	0.50
<u>Southeastern Region</u>												
Carbon	--	--	21	0.55	4	0.09	--	--	7	0.33	0	0.00
Emery	19	0.63	17	0.29	9	0.29	23	1.80	14	0.35	6	0.33
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	38	1.00	--	--	--	--	--	--
REGIONAL TOTALS	19	0.63	20	0.48	9	0.24	23	1.80	13	0.35	5	0.32
STATE TOTALS	17	0.71	20	0.85	19	0.58	13	0.44	12	0.39	13	0.32

MIGRATORY UPLAND GAME BIRDS

SUMMARY



Mourning Doves

The breeding density index decreased in 1987 and remained below average.

Harvest statistics derived from the questionnaire showed decreased hunters and harvest compared to 1986. Likewise, hunter success decreased 13 percent.

Field bag checks indicated an increase in hunter success on opening day.

Division personnel collected 3,536 wings for aging during 1987. Aging of wings indicated the juvenile per 100 adult ratio increased to 137 compared to 127 in 1986, and the 20-year average of 115. Significantly, more harvested juvenile birds were hatched earlier than in 1986, and the long-term average.

Band-tailed Pigeons

Banding of band-tailed pigeons was discontinued in 1979, as a result of recommendations by the Four-Corners Band-tailed Pigeon Study Committee.

Hunter participation and harvest during the 1987 season is unknown because data was unavailable.



MOURNING DOVE

Call Count Survey

Results of the 1987 call count survey are found in Table 1 of this section. The long-term trend of the state's breeding density index (average doves heard per route) is shown in Table 2. Indices shown in each of these tables are unweighted and consequently differ from those published in the annual Mourning Dove Status Report compiled by the Fish and Wildlife Service; however, indicated trends are similar (Figure 1). The following is a comparison of the results of the 1987 survey to 1986 and the average for the period 1964-1986:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Average doves heard per route	8.9	-18	-32
Average calls heard per route	36.2	-22	-35
Average doves seen per route	9.5	-30	-34

Coo count data indicated decreased breeding activity in late May compared to 1986 and was 32 percent below the long-term average of 13 doves heard per route.

Harvest

Hunter Questionnaire

Information obtained from the hunter questionnaire for 1987 is summarized in Table 3. Long-term trends of mourning doves bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 4-6 and total statewide harvest statistics in Table 7. The following is a comparison of the harvest statistics for 1987 compared to 1986 and the 11-year (1977-86) average:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Mourning dove hunters	22,553	-15	-25
Mourning dove harvest	204,030	-10	-30
Hunter-days afield	89,378	+3	-13
Mourning doves per hunter-day	2.28	-13	-20
Mourning doves hunter	9.05	+6	-5

A decrease in dove hunter success was predicted due to an 18 percent decrease in the spring dove call count index. Hunter success decreased 13 percent, and total harvest decreased 10 percent compared to 1986. Numbers of dove hunters, hunter-days afield and doves per hunter-day were significantly below the 10-year average. Decreased success may have been due to cool wet weather in July and August. Thunderstorms moved across Utah August 23-25 dumping up to 2.89 inches at some recording stations and causing some flooding. In Utah county, Genola measured 0.75 inches in 15 minutes. Daily minimum temperatures in the 30's and 40's occurred August 26 and 27 following this storm. So part of the reduced hunter success may have been due to early migration of doves. Hunt conditions were good on opening day with dry and warm weather.

Long-term harvest trends are depicted in Figure 2.

Field Bag Checks

A summary of field bag check data for 1987 is shown in Table 8. Hunter success trends determined via this method are shown in Table 9. Results of the 1987 survey compared to 1986 and the average (1967-86) follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total hunters checked	1,506	-35	-22
Total hours hunted	5,093	-43	-28
Doves per hunter (complete hunts)	4.33	+32	+16
Doves bagged per 100 hours	110	+43	+16
Average hours per hunter-day (complete hunts)	3.9	-5	+3
Hours hunted per dove bagged	0.9	-25	-22

September 1, 1987 was a Tuesday following the Labor Day holiday so one would expect less hunter participation this year compared to the previous year. Field bag checks indicated an increase in hunter success. This disagrees with the questionnaire results which indicated a decrease in hunter success. This might indicate that opening day success was better than last year but success for the season was not as good. The total number of hunters checked was down 35 percent from 1986. Dove hunters spent more time afield per hunter-day than in 1985, and more time was spent per dove bagged, according to field bag check data.

Age Composition of the Harvest

A summary of the age composition of harvested mourning doves from 1977 through 1986 is contained in Table 10. Hatching dates for immature doves harvested in the Northern Region since 1977 are shown in Table 11. Hatching dates for immature doves harvested in Utah in 1987 are shown in Table 12.

Following is a comparison of data collected in 1987 to 1986 and long-term averages (1966-86):

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Sample size	3,536	-10	+6
Immatures/100 adults	137	+8	+16
Percent of immatures hatched on: (N. Region)			
August 3 or later	34.8	+12	-11
July 25 or later	74.1	-9	-8
Before July 25	25.9	+42	+35

Fewer wings were collected for aging during the 1987 season compared to 1986. The 137 immatures per 100 adults indicated an improved hatch compared to the previous 20-year average. Wing analysis indicated an earlier and longer nesting period for 1987 compared with 1986. This may have been due to a warm, dry spring and a wetter and cooler July and August than normal. Doves hatched before July 25 were 35 percent above the long-term average.

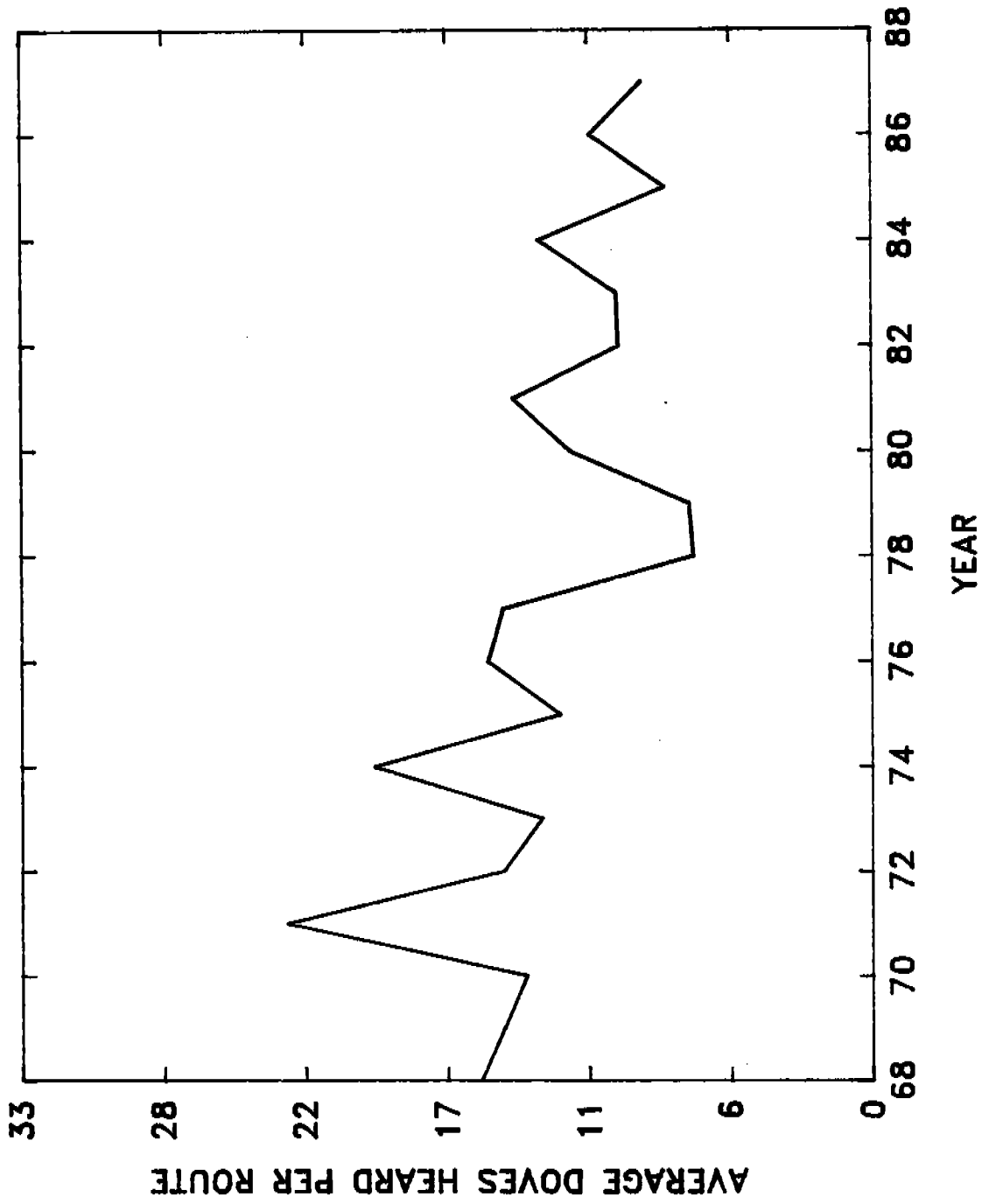


Figure 1. Mournful dove breeding density index trend, 1968-88.

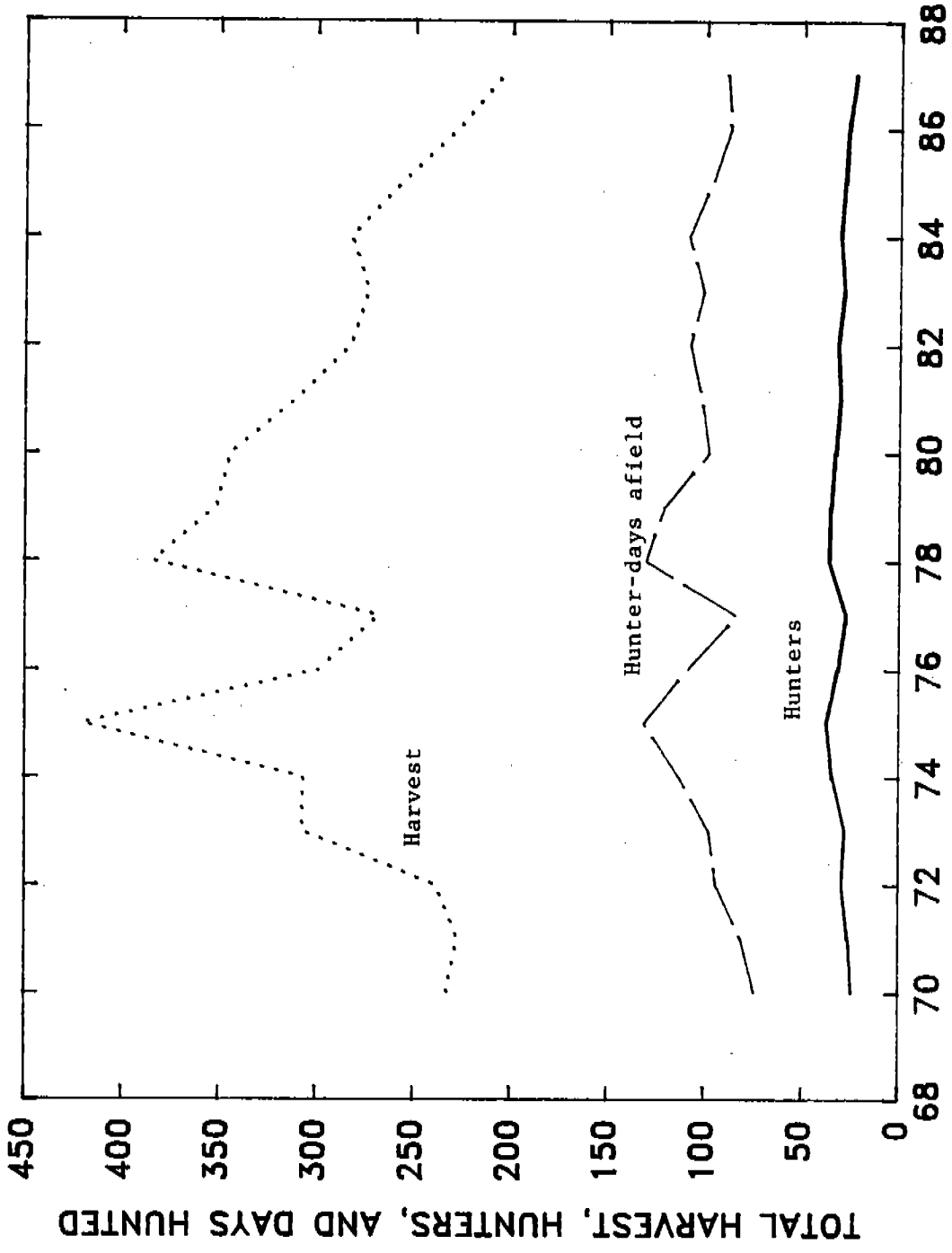


Figure 2. Statewide trends of mourning dove harvest statistics.

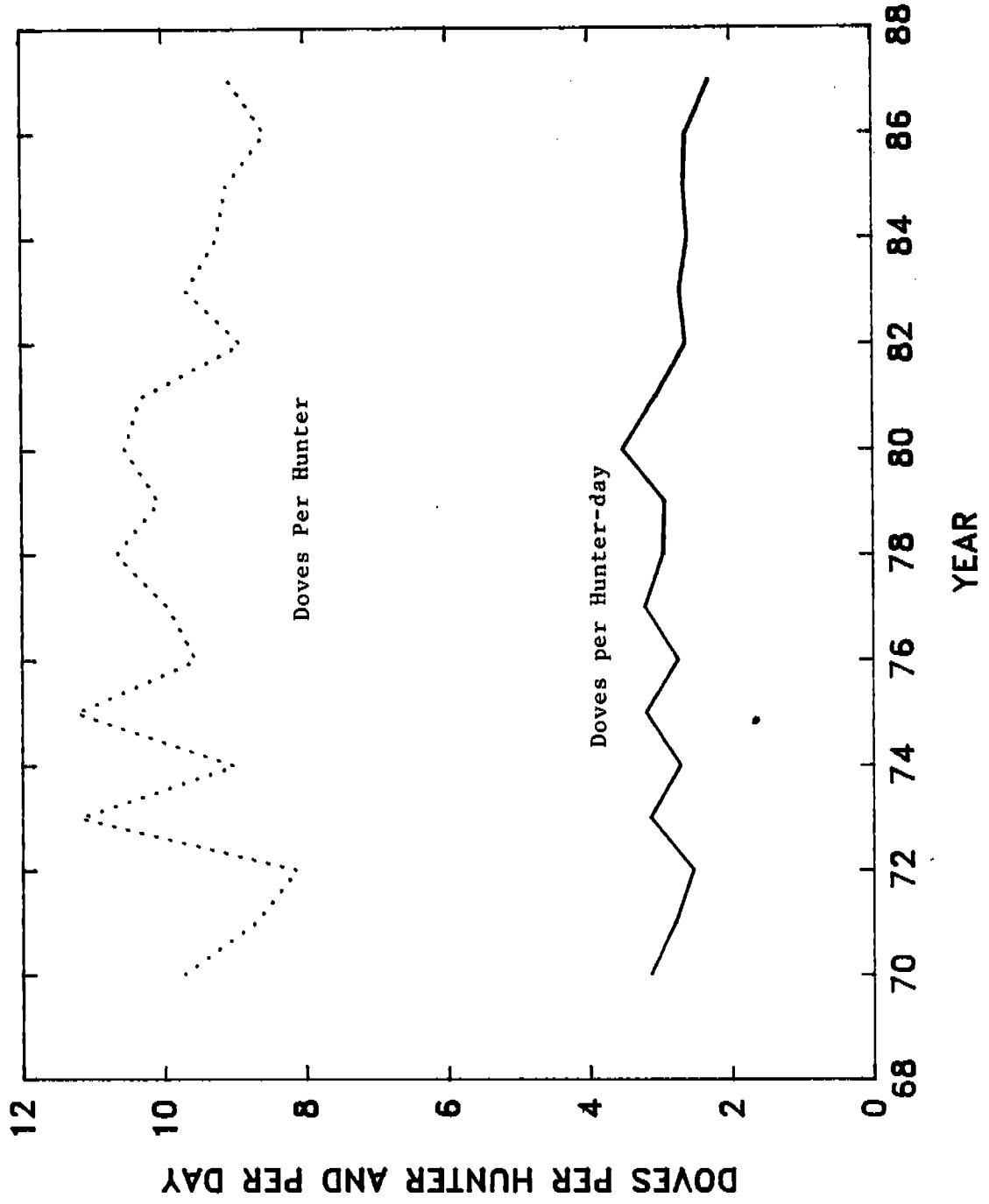


Figure 3. Statewide trends of mourning dove hunter success rates, 1968-88.

Table 1. Summary of the mourning dove call-count survey for 1987.

Region and County	Route Number	Total Doves Heard Per Route	Total Calls Heard Per Route	Total Doves Seen Per Route
<u>Northern Region</u>				
Summit	R1020	3	16	2
Box Elder	R1500	2	11	4
REGIONAL TOTALS		5	27	6
<u>Central Region</u>				
Juab	R2830	16	88	5
REGIONAL TOTALS		16	88	5
<u>Southern Region</u>				
Sevier-Sanpete	R0370	3	3	10
Wayne-Sevier	R0660	0	0	0
Garfield	R1090	1	1	0
Millard	R3640	3	3	4
Beaver	R3820	17	64	30
Iron	R4000	23	113	3
Washington	R4310	7	17	21
REGIONAL TOTALS		54	201	68
<u>Northeastern Region</u>				
Duchesne	R0080	4	9	0
Uintah	* R0220	12	25	11
REGIONAL TOTALS		16	34	11
<u>Southeastern Region</u>				
Emery	R0540	11	37	1
San Juan	R1171	31	153	58
San Juan	* R1450	1	3	0
REGIONAL TOTALS		43	193	59
STATE TOTALS		134	543	143
STATE AVERAGE		8.9	36.2	9.5
PERCENT CHANGE (from previous year)		-18.0	-22.3	-30.0

*New route location

Table 2. Regional and county summary of mourning dove breeding population trend as indicated by the number of doves heard per route during random call count surveys, 1976-87.

Region and County	Route Number	Number of Doves Heard Per Route											
		1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>													
Summit	R1020	11	10	5	6	5	4	5	--	1	4	5	3
Box Elder	R1500	1	4	2	9	4	8	--	1	0	0	1	2
REGIONAL TOTALS		12	14	7	15	9	12	5	1	1	4	6	5
<u>Central Region</u>													
Juab	R2830	28	25	31	15	31	22	9	25	19	20	19	16
REGIONAL TOTALS		28	25	31	15	31	22	9	25	19	20	19	16
<u>Southern Region</u>													
Sevier-Sanpete	R0370	0	2	0	0	3	0	0	3	5	4	4	3
Wayne-Sevier	R0660	5	8	1	2	5	14	4	--	17	3	2	0
Garfield	R1090	3	1	0	0	0	9	2	3	15	3	1	1
Millard	R3640	6	29	8	4	2	10	9	5	14	2	2	3
Beaver	R3820	0	0	0	5	9	7	13	3	6	6	4	17
Iron	R4000	45	27	12	14	40	36	21	19	31	41	26	23
Washington	R4310	19	15	1	4	3	6	0	14	1	0	6	7
REGIONAL TOTALS		78	82	22	29	62	82	49	47	89	53	45	54
<u>Northeastern Region</u>													
Duchesne	R0080	11	14	2	2	1	13	7	0	1	8	3	4
Uintah	R0220	27	7	4	--	49	19	1	9	10	5	20	12
REGIONAL TOTALS		38	21	6	2	50	32	8	9	11	13	23	16
<u>Southeastern Region</u>													
Emery	R0540	14	4	10	9	7	22	7	11	10	3	10	11
San Juan	R1170	51	67	24	28	14	38	26	30	57	25	60	31
San Juan	R1450	2	1	3	1	3	0	24	5	7	2	0	1
REGIONAL TOTALS		67	72	37	38	24	60	57	46	74	30	70	43
STATE TOTALS		223	214	103	99	176	208	128	128	194	120	163	134
STATE AVERAGES		14.9	14.3	6.9	7.1	11.7	13.9	9.8	9.9	12.9	8.0	10.9	8.9
PERCENT CHANGE (from previous year)		+23	-4	-52	+3	+65	+18	-38	0	+30	-38	+36	-18

*Automatic zero.

Table 3. Summary of mourning dove hunter success and distribution of harvest and hunting pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
Northern Region						
Box Elder	102	6,790	23,484	3.46	7.59	11.51
Cache	41	3,407	6,103	1.79	3.81	2.99
Davis	37	3,358	3,946	1.18	3.75	1.93
Morgan	4	122	367	3.00	0.13	0.18
Rich	--	--	--	--	--	--
Summit	2	147	367	2.50	0.16	0.18
Weber	33	3,775	4,338	1.15	4.22	2.12
REGIONAL TOTALS	219	17,601	38,609	2.19	19.69	18.92
Central Region						
Juab	104	5,785	17,061	2.95	6.47	8.36
Salt Lake	71	8,065	11,006	1.36	9.02	5.39
Sanpete	37	3,137	5,883	1.88	3.51	2.88
Tooele	94	8,040	17,454	2.17	8.99	8.55
Utah	215	17,821	40,938	2.30	19.93	20.06
Wasatch	10	1,519	1,250	.82	1.70	0.61
REGIONAL TOTALS	531	44,370	93,594	2.11	49.64	45.87
Southern Region						
Beaver	15	1,985	3,407	1.72	2.22	1.67
Garfield	3	147	245	1.67	0.16	0.12
Iron	28	2,132	6,618	3.10	2.38	3.24
Kane	6	441	1,348	3.06	0.49	0.66
Millard	75	7,060	20,003	2.83	7.89	9.80
Piute	3	294	490	1.67	0.32	0.24
Sevier	40	4,437	9,535	2.15	4.96	4.67
Washington	19	1,740	4,657	2.68	1.94	2.28
Wayne	5	490	2,770	5.65	0.54	1.35
REGIONAL TOTALS	194	18,728	49,077	2.62	20.95	24.05
Northeastern Region						
Daggett	4	294	245	0.83	0.32	0.12
Duchesne	11	637	1,568	2.46	0.71	0.76
Uintah	28	2,034	5,736	2.82	2.27	2.81
REGIONAL TOTALS	43	2,966	7,550	2.55	3.31	3.70
Southeastern Region						
Carbon	14	784	1,519	1.94	0.87	0.74
Emery	20	2,255	5,442	2.41	2.52	2.66
Grand	9	710	1,715	2.41	0.79	0.84
San Juan	13	1,274	5,196	4.08	1.42	2.54
REGIONAL TOTALS	56	5,025	13,874	2.76	5.62	6.80
Unknown Counties	4	686	1,323	1.93	0.76	0.64
STATE TOTALS	1,047	89,378	204,030	2.28	100	100

*Total hunter trips from questionnaire returns.

Table 4. Summary of mourning doves bagged per hunter-day by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>								
Box Elder	4.97	3.04	3.74	3.50	3.19	2.18	3.18	3.46
Cache	2.77	2.83	2.16	2.48	2.05	2.34	1.92	1.79
Davis	1.79	1.59	1.52	1.32	1.66	1.53	1.24	1.18
Morgan	2.91	2.73	4.78	2.65	1.91	1.72	2.04	3.00
Rich	2.00	3.00	1.57	3.08	6.69	2.28	3.72	0.00
Summit	4.71	3.19	2.34	2.08	3.89	1.92	1.08	2.50
Weber	2.29	2.18	1.93	1.81	1.55	1.68	1.63	1.15
REGIONAL TOTALS	3.31	2.57	2.50	2.43	2.27	1.92	2.26	2.19
<u>Central Region</u>								
Juab	4.70	3.82	3.64	5.35	4.44	5.16	4.54	2.95
Salt Lake	2.33	2.65	1.89	2.14	1.95	1.91	1.95	1.36
Sanpete	3.64	3.23	2.48	3.64	2.98	2.71	3.51	1.88
Tooele	3.43	2.30	2.54	2.74	2.90	2.55	2.87	2.17
Utah	3.08	2.96	2.10	2.10	2.21	2.50	2.14	2.30
Wasatch	3.45	1.46	1.39	0.83	2.20	1.50	1.97	0.82
REGIONAL TOTALS	3.23	2.86	2.33	2.64	2.60	2.71	2.72	2.11
<u>Southern Region</u>								
Beaver	5.03	4.86	4.78	5.62	3.45	3.43	2.02	1.72
Garfield	5.17	4.02	4.15	3.07	1.80	0.60	0.20	1.67
Iron	5.02	4.42	3.24	3.60	3.07	4.99	3.54	3.10
Kane	5.86	4.71	2.50	4.38	5.76	2.54	1.06	3.06
Millard	5.43	4.11	4.49	4.63	4.25	4.30	3.58	2.83
Piute	3.90	4.05	0.63	1.65	1.94	1.60	1.62	1.67
Sevier	3.63	2.30	2.51	2.73	2.11	2.33	1.82	2.15
Washington	3.73	4.19	2.92	4.34	2.62	3.17	3.90	2.68
Wayne	2.93	3.76	2.56	2.50	2.00	2.47	2.57	5.65
REGIONAL TOTALS	4.58	3.85	3.49	3.80	3.22	3.53	2.85	2.62
<u>Northeastern Region</u>								
Daggett	1.50	1.00	2.33	1.34	1.48	0.00	1.20	0.83
Duchesne	3.07	3.76	3.09	2.79	1.83	2.50	2.70	2.46
Uintah	3.44	1.81	2.51	2.33	2.61	2.39	1.91	2.82
REGIONAL TOTALS	3.22	2.43	2.74	2.39	2.20	2.39	2.05	2.55
<u>Southeastern Region</u>								
Carbon	3.88	3.42	3.13	2.06	2.13	2.76	2.76	1.94
Emery	3.04	3.62	2.37	2.00	2.24	3.28	1.62	2.41
Grand	4.66	4.12	2.99	2.85	2.46	2.00	4.28	2.41
San Juan	3.80	3.75	3.68	3.70	3.51	3.38	3.26	4.08
REGIONAL TOTALS	3.69	3.75	2.99	2.41	2.41	3.01	2.54	2.76
Unknown Counties	5.00	0.64	1.56	7.20	0.00	0.00	0.00	1.93
STATE TOTALS	3.52	3.05	2.62	2.71	2.59	2.65	2.61	2.28

Table 5. Percentage distribution of mourning dove harvest by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
Northern Region								
Box Elder	10.46	8.89	10.36	11.40	9.96	5.48	10.36	11.51
Cache	2.12	2.77	2.85	4.85	4.71	3.85	2.46	2.99
Davis	1.38	1.90	2.73	2.71	3.35	2.91	2.08	1.93
Morgan	0.96	1.05	1.27	0.64	0.30	0.76	0.44	0.18
Rich	0.27	0.23	0.26	0.54	0.77	0.55	1.08	0.00
Summit	0.16	0.46	0.48	0.12	0.25	0.84	0.12	0.18
Weber	3.72	3.37	5.67	4.31	3.57	4.21	2.71	2.12
REGIONAL TOTALS	19.07	18.66	23.62	24.56	22.92	18.61	19.26	18.92
Central Region								
Juab	9.25	6.99	7.97	8.93	9.42	10.97	11.09	8.36
Salt Lake	7.89	7.09	7.12	7.34	7.90	5.59	5.50	5.39
Sanpete	3.94	2.59	2.65	3.44	3.49	4.08	5.54	2.88
Tooele	7.55	5.31	8.27	9.46	8.67	7.42	11.39	8.55
Utah	14.92	17.37	15.20	14.14	13.94	17.75	14.38	20.06
Wasatch	0.80	0.78	0.58	0.24	0.86	0.98	0.52	0.61
REGIONAL TOTALS	44.35	40.13	41.79	43.56	44.27	46.79	48.42	45.87
Southern Region								
Beaver	1.69	1.70	2.60	1.65	2.31	1.55	1.82	1.67
Garfield	1.07	1.54	1.17	0.90	0.26	0.02	0.01	0.12
Iron	2.60	4.20	2.64	2.71	1.68	4.05	3.82	3.24
Kane	0.40	1.36	0.11	0.84	1.41	0.28	0.30	0.66
Millard	8.55	7.73	6.80	6.17	10.20	10.25	9.42	9.80
Piute	0.60	1.03	0.03	0.41	0.45	0.56	0.19	0.24
Sevier	3.63	2.91	3.37	3.23	3.98	3.24	3.50	4.67
Washington	3.39	3.16	3.25	3.70	2.37	2.44	3.26	2.28
Wayne	0.22	0.64	0.35	0.12	0.11	0.35	0.33	1.35
REGIONAL TOTALS	22.15	24.26	20.42	19.74	22.77	22.75	22.64	24.05
Northeastern Region								
Daggett	0.04	0.12	0.15	0.21	0.42	0.00	0.16	0.12
Duchesne	2.07	2.40	2.30	1.53	0.99	1.42	1.05	0.76
Uintah	2.29	1.99	2.52	2.49	2.66	2.78	1.92	2.81
REGIONAL TOTALS	4.41	4.50	4.97	4.24	4.07	4.20	3.14	3.70
Southeastern Region								
Carbon	2.82	2.44	3.94	2.28	2.39	2.93	1.65	0.74
Emery	2.85	3.32	2.00	2.37	1.45	3.35	1.83	2.66
Grand	1.98	3.90	1.20	0.99	0.88	0.27	1.24	0.84
San Juan	2.30	2.75	1.90	2.08	1.24	1.10	1.81	2.54
REGIONAL TOTALS	9.95	12.40	9.04	7.73	5.97	7.65	6.54	6.80
Unknown counties	0.07	0.05	0.15	0.18	0.00	0.00	0.00	0.64
STATE TOTALS	100	100	100	100	100	100	100	100

Table 6. Percentage distribution of mourning dove hunting pressure by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
Northern Region								
Box Elder	7.40	8.91	7.25	8.84	8.10	6.68	8.50	7.59
Cache	2.69	2.98	3.46	5.29	5.97	4.37	3.34	3.81
Davis	2.71	3.65	4.69	5.57	5.24	5.04	4.38	3.75
Morgan	1.16	1.17	0.70	0.65	0.41	1.18	0.57	0.13
Rich	0.49	0.23	0.43	0.48	0.30	0.64	0.76	0.00
Summit	0.12	0.44	0.54	0.16	0.17	1.15	0.28	0.16
Weber	5.72	4.72	7.71	6.45	5.97	6.66	4.35	4.22
REGIONAL TOTALS	20.30	22.10	24.78	27.45	26.16	25.74	22.17	19.69
Central Region								
Juab	6.93	5.57	5.73	4.53	5.50	5.64	6.37	6.47
Salt Lake	11.94	8.16	9.90	9.30	10.51	7.75	7.36	9.02
Sanpete	3.81	2.44	2.80	2.57	3.04	4.00	4.12	3.51
Tooele	7.75	7.05	8.52	9.39	7.76	7.73	10.36	8.99
Utah	17.05	17.90	18.92	18.28	16.38	18.88	17.53	19.93
Wasatch	0.82	1.63	1.08	0.78	1.01	1.73	0.69	1.70
REGIONAL TOTALS	48.29	42.76	46.95	44.85	44.21	45.73	46.43	49.64
Southern Region								
Beaver	1.18	1.06	1.48	0.80	1.74	1.20	2.34	2.22
Garfield	0.73	1.17	0.74	0.80	0.37	0.11	0.12	0.16
Iron	1.82	2.90	2.13	2.05	1.42	2.15	2.82	2.38
Kane	0.24	0.88	0.11	0.52	0.63	0.29	0.73	0.49
Millard	5.54	5.74	3.97	3.62	6.23	6.33	6.86	7.89
Piute	0.54	0.77	0.11	0.68	0.60	0.93	0.31	0.32
Sevier	3.53	3.86	3.51	3.20	4.89	3.69	4.99	4.96
Washington	3.20	2.30	2.92	2.31	2.35	2.04	2.18	1.94
Wayne	0.26	0.52	0.35	0.13	0.15	0.38	0.33	0.54
REGIONAL TOTALS	17.05	19.20	15.34	14.11	18.38	17.12	20.68	20.95
Northeastern Region								
Daggett	0.1	0.35	0.17	0.42	0.75	0.07	0.35	0.32
Duchesne	2.38	1.94	1.95	1.49	1.40	1.51	1.02	0.71
Uintah	2.35	3.34	2.63	2.90	2.65	3.09	2.63	2.27
REGIONAL TOTALS	4.83	5.63	4.75	4.81	4.80	4.66	4.00	3.31
Southeastern Region								
Carbon	2.56	2.17	3.30	3.00	2.91	2.82	1.56	0.87
Emery	3.30	2.80	2.21	3.23	1.68	2.71	2.96	2.52
Grand	1.50	2.88	1.05	0.94	0.93	0.35	0.76	0.79
San Juan	2.14	2.23	1.35	0.53	0.91	0.87	1.44	1.42
REGIONAL TOTALS	9.49	10.08	7.91	8.71	6.44	6.75	6.72	5.62
Unknown counties	0.05	0.23	0.26	0.07	0.02	0.00	0.00	0.76
STATE TOTALS	100	100	100	100	100	100	100	100

Table 7. Statewide summary of mourning dove harvest statistics, 1951-87.

Year	Total Hunters	Total Harvest	Hunters-days Afield	Doves Per Hunter-day	Doves Per Hunter
1951	3,007	20,448	4,455	4.59	6.80
1952	6,420	49,498	10,784	4.59	7.71
1953	9,887	75,636	17,797	4.25	7.65
1954	9,901	75,941	19,724	3.85	7.67
1955	9,653	79,444	19,282	4.12	8.23
1956	10,744	95,729	20,411	4.69	8.91
1957	11,298*	86,769*	18,620*	4.66	7.68
1958	11,853	85,934	21,591	3.98	7.25
1959	12,142	110,856	24,911	4.45	9.13
1960	12,440	108,477	25,766	4.21	8.72
1961	15,192	128,001	33,434	3.89	8.42
1962	14,663	144,826	34,281	4.23	9.89
1963	18,258	162,769	40,490	4.02	8.91
1964	19,829	193,538	51,671	3.75	9.76
1965	18,710	164,087	48,835	3.36	8.69
1966	20,594	212,696	60,608	3.51	10.33
1967	25,161	263,949	74,171	3.56	10.49
1968	25,105	207,922	70,186	2.96	8.28
1969	29,131	279,311	90,965	3.07	9.59
1970	23,908	232,469	73,984	3.14	9.72
1971	26,064	226,645	81,271	2.79	8.70
1972	29,341	238,354	94,046	2.53	8.12
1973	27,435	307,062	97,788	3.14	11.19
1974	34,021	306,076	112,967	2.71	9.00
1975	37,378	420,308	131,312	3.20	11.24
1976	31,293	298,505	108,780	2.74	9.54
1977	26,905	267,487	83,218	3.21	9.94
1978	35,985	383,696	130,173	2.95	10.66
1979	34,903	351,161	120,459	2.92	10.06
1980	32,627	343,851	97,644	3.52	10.54
1981	30,060	310,068	101,728	3.05	10.31
1982**	31,756	282,188	107,728	2.62	8.89
1983	28,258	272,979	100,568	2.71	9.66
1984	30,573	282,307	108,793	2.59	9.23
1985	28,183	256,045	96,507	2.65	9.09
1986	26,583	226,985	87,084	2.61	8.54
1987***	22,553	204,030	89,378	2.28	9.05
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TOTALS					
(1951-87)	821,814	7,756,032	2,511,396	(127.10)	(337.59)
(1976-86)	331,496	3,223,242	1,135,539	(31.20)	(106.42)
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AVERAGES					
(1951-87)	22,212	209,622	67,876	3.44	9.12
(1976-86)	30,136	293,022	103,231	2.84	9.67

*Estimated.

**Bag Limit increased to 15.

***Bag Limit reduced to 10.

Table 8. Mourning dove field bag check summary, 1987.

Region and County	ALL HUNTS				COMPLETE HUNTS					
	Total Parties	Total Hunters	Total Hours	Total Birds/100 Hr	Total Complete Hunts	Total Hours	Total Birds	Total Birds/100 Hr Hunter		
Northern Region										
Box Elder	120	271	961	1,188	124	183	707	1,011	143	5.52
Cache	28	63	117	83	71	--	--	--	--	--
Davis	19	35	91	57	63	8	28	18	64	1.20
Morgan	--	--	--	--	--	--	--	--	--	--
Rich	1	2	1	0	0	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--
Weber	3	6	16	10	63	--	--	--	--	--
REGIONAL TOTALS	171	377	1,186	1,338	113	198	735	1,029	140	5.20
Central Region										
Juab	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--
Southern Region										
Beaver	22	56	114	182	160	2	35	46	131	5.75
Garfield	--	--	--	--	--	--	--	--	--	--
Iron	13	23	46	63	137	1	2	11	550	11.00
Kane	--	--	--	--	--	--	--	--	--	--
Millard	81	183	443	470	106	2	17	11	64	2.75
Piute	--	--	--	--	--	--	--	--	--	--
Sevier	21	45	148	180	122	--	--	--	--	--
Washington	15	32	65	44	68	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	152	339	816	939	115	5	54	68	126	5.23
Northeastern Region										
Daggett	1	1	1	1	100	--	--	--	--	--
Duchesne	3	5	31	6	19	--	--	--	--	--
Uintah	1	3	9	10	111	3	9	10	111	3.33
REGIONAL TOTALS	5	9	41	17	41	3	9	10	111	3.33
Southeastern Region										
Carbon	--	--	--	--	--	--	--	--	--	--
Emery	9	22	22	144	655	7	22	141	641	7.05
Grand	--	--	--	--	--	--	--	--	--	--
San Juan	12	31	55	204	371	9	39	155	397	7.38
REGIONAL TOTALS	21	53	77	348	452	16	61	296	485	7.22
LEHI CHECK STATION	178	471	1,951	1,442	74	137	1,490	1,167	78	3.23
NEPHI CHECK STATION*	98	257	1,022	1,024	100	48	584	667	114	5.09
STATE TOTALS	635	1,506	5,093	5,108	100	313	2,933	3,237	110	4.33

*Includes Millard and Juab counties.

Table 9. Mourning dove hunter success trend determined by field bag checks, 1982-87.

Region and County	1982		1983		1984		1985		1986		1987	
	Doves/100 Hr Hunter	Doves/100 Hr Hunter	Doves/100 Hr Hunter	Doves/100 Hr Hunter	Doves/100 Hr Hunter	Doves/100 Hr Hunter	Doves/100 Hr Hunter	Doves/100 Hr Hunter	Doves/100 Hr Hunter	Doves/100 Hr Hunter	Doves/100 Hr Hunter	Doves/100 Hr Hunter
Northern Region												
Box Elder	109	4.80	128	5.61	101	4.35	50	1.94	131	5.98	143	5.52
Cache	--	--	33	1.67	--	--	--	--	163	5.33	--	--
Davis	122	3.30	75	2.00	116	2.42	--	--	81	2.74	64	1.20
Morgan	--	--	100	1.00	--	--	--	--	--	--	--	--
Rich	406	14.60	--	--	156	6.25	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	317	9.50	214	3.00	182	6.20	--	--	--	--	--	--
REGIONAL TOTALS	120	4.99	126	5.12	103	4.36	50	1.94	129	5.72	140	5.20
Central Region												
Juab	--	--	--	--	--	--	--	--	68	4.30	--	--
Salt Lake	--	--	61	1.40	--	--	--	--	333	3.33	--	--
Sanpete	37	0.92	--	--	--	--	--	--	20	0.56	--	--
Tooele	--	2.77*	133	3.33	--	--	--	--	241	8.09	--	--
Utah	--	--	172	7.86	62	1.33	40	2.00	53	1.80	--	--
Wasatch	--	--	0	0.00	--	--	23	1.00	--	--	--	--
REGIONAL TOTALS	37	0.92	122	3.90	62	1.33	34	1.63	75	3.84	--	--
Southern Region												
Beaver	113	5.42	--	--	88	8.36	--	--	224	9.25	131	5.75
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	720	14.00	500	10.00	550	11.00
Kane	--	--	35	6.13	--	--	--	--	180	5.65	--	--
Millard	--	3.75*	113	8.03	101	4.85	300	6.00	172	6.20	64	2.75
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	1.88*	--	1.83*	--	2.15*	75	1.50	--	--	--	--
Washington	--	--	236	4.71	--	--	--	--	343	6.86	--	--
Wayne	30	1.13	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	97	4.41	148	6.80	94	6.09	397	7.94	203	6.41	126	5.23
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	59	1.11	--	--
Duchesne	66	2.00	67	1.60	135	3.45	2,300	11.00	100	1.00	--	--
Uintah	400	4.00	146	2.11	50	0.94	500	15.00	124	2.38	111	3.33
REGIONAL TOTALS	200	3.33	108	1.93	90	1.93	925	12.33	87	1.61	111	3.33
Southeastern Region												
Carbon	230	6.68	183	2.20	750	9.38	103	10.33	177	3.65	--	--
Emery	205	4.79	193	5.80	428	15.00	182	3.50	233	3.50	641	7.05
Grand	32	10.50	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	566	11.33	188	4.45	200	4.00	261	5.64	397	7.38
REGIONAL TOTALS	153	5.90	231	5.74	358	7.33	150	4.36	215	4.43	485	7.22
NEPHI CHECK STATION	91	3.94	155	7.40	56	2.61	167	7.47	37	1.68	114	5.09
LEHI CHECK STATION	185	3.16	83	5.14	135	6.50	62	2.37	50	2.39	78	3.23
STATE TOTALS	125	3.98	117	5.76	87	3.80	87	3.42	64	2.94	110	4.33

*Doves per hunter index based on all hunts.

Table 10. Age composition (Immatures/100 Adults) of mourning doves harvested, 1978-87.

Region and County	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1976-85 Avg. I/100A (n)
Northern Region											
Box Elder	88 (999)	84 (1271)	121 (1454)	107 (700)	124 (716)	143 (515)	135 (1172)	146 (137)	131 (1086)	128 (770)	128 (770)
Cache	--	106 (33)	151 (113)	--	--	67 (5)	--	181 (45)	--	325 (17)	325 (17)
Davis	--	71 (65)	169 (43)	--	107 (56)	55 (17)	121 (42)	85 (74)	--	--	--
Morgan	--	--	--	--	--	188 (46)	--	--	--	--	--
Rich	--	92 (25)	--	--	4,200 (43)	--	53 (23)	600 (7)	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	--	190 (29)	--	--	--	183 (34)	--	--	--	--	--
REGIONAL TOTALS	88 (999)	86 (1423)	124 (1610)	107 (700)	135 (815)	143 (617)	133 (1237)	138 (443)	131 (1086)	132 (787)	130 (1026)
Central Region											
Juab	63 (75)	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--
Tooele	60 (262)	84 (103)	118 (96)	78 (71)	80 (137)	--	--	--	--	--	--
Utah	61 (1814)	80 (1823)	45 (29)	--	100 (32)	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	61 (2151)	81 (1926)	95 (125)	78 (71)	89 (169)	--	--	--	--	--	116 (1060)
Southern Region											
Beaver	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--
Plute	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region											
Daggett	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region											
Carbon	--	67 (167)	--	--	160 (138)	--	--	--	--	--	--
Emery	--	--	--	260 (18)	76 (88)	--	--	--	52 (64)	80 (187)	--
Grand	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	50 (84)	--	--	--	--	53 (227)	63 (275)	--
REGIONAL TOTALS	--	67 (167)	281 (80)	65 (102)	119 (226)	--	--	--	53 (291)	69 (462)	117 (173)
NEPHI CHECK STATION	87 (2013)	114 (1814)	100 (862)	105 (1067)	62 (754)	108 (1239)	198 (1130)	107 (1678)	140 (1137)	180 (1004)	113 (1301)
LEHI CHECK STATION	--	--	98 (1204)	75 (2075)	83 (1075)	84 (1021)	96 (1517)	107 (1391)	137 (1396)	130 (1283)	96 (1383)
STATE TOTALS	75 (5163)	91 (5330)	111 (3881)	87 (4015)	91 (3143)	106 (2877)	131 (3884)	117 (3512)	127 (3910)	137 (3536)	125 (3790)

Table 11. Percent of harvest by hatching date of immature mourning doves in northern Utah, 1978-87.

Date Hatched	Age* (Days)	PERCENT OF HARVEST BY HATCH DATE										S A M P L E										S I Z E				
		1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1978	1985	1986	1987	
Aug 3	29	52.8	45.6	35.6	46.1	32.6	22.8	43.1	44.7	31.2	34.8	246	265	316	166	152	77	304	115	192	155					
Jul 31	32	25.3	22.7	26.9	33.6	24.9	21.3	29.4	26.8	35.0	21.8	118	132	239	121	116	72	207	69	215	97					
Jul 25	38	12.0	14.3	16.4	14.2	21.7	21.0	19.0	14.0	15.6	17.5	56	83	146	51	101	71	134	36	96	78					
Jul 18	45	5.8	8.1	11.6	5.0	7.7	14.8	6.0	3.9	8.6	10.6	27	47	103	18	36	50	42	10	53	47					
Jul 9	54	3.0	5.0	5.1	0.6	4.7	9.2	2.1	1.9	4.7	5.7	14	29	45	2	22	31	15	5	29	25					
Jun 30	63	0.4	1.5	2.4	--	4.1	6.2	0.4	1.6	2.8	4.3	2	9	21	0	19	21	3	4	17	19					
Jun 21	72	0.2	1.7	1.5	--	2.8	2.1	0.0	0.0	1.3	3.8	1	10	13	0	13	7	0	0	8	17					
Jun 8	85	--	--	0.3	--	1.3	2.4	--	0.0	0.5	1.1	0	0	3	0	6	8	0	0	3	5					
May 22	102	0.2	0.2	--	0.3	0.2	0.0	--	0.0	0.3	0.2	1	1	0	1	1	1	0	0	2	1					
Apr 27	127	0.2	0.9	0.2	0.3	--	--	--	0.0	0.0	0.2	1	5	2	1	0	0	0	0	0	1					
Apr 21	133	--	--	--	--	--	--	--	7.0	0.0	0.0	--	0	0	0	0	0	0	18	0	0					
		100	100	100	100	100	100	100	100	100	100	904	466	581	888	360	466	338	705	257	445					

*Allen, J. M., 1963.

P = Last primary molted.

Table 12. Percent of harvest by hatching date of immature mourning doves from the various regions and check stations in Utah, 1987.

Date Hatched	Age* (Days)	P	PERCENT OF HARVEST BY HATCH DATE												S A M P L E S I Z E							
			N Region			Nephi CS			Lehi CS			C Region			SE Region		Total		C Region		SE Region	
			Total	Region	SE	Total	Region	SE	Total	Region	SE	Total	Region	SE	Total	Region	SE	Total	Region	SE	Total	Region
Aug 3	29	none	34.8	52.5	52.4	52.4	48.1	155	105	154	259	91										
Jul 31	32	1	21.8	30.0	32.3	31.4	31.7	97	60	95	155	60										
Jul 25	38	2	17.5	12.5	10.3	11.1	11.1	78	25	30	55	21										
Jul 18	45	3	10.6	3.0	3.8	3.4	4.9	47	6	11	17	9										
Jul 9	54	4	5.7	0.5	0.6	0.7	1.6	25	1	2	3	3										
Jun 30	63	5	4.3	1.0	0.6	0.8	1.6	19	2	2	4	3										
Jun 21	72	6	3.8	0.0	0.0	0.0	0.5	17	0	0	0	1										
Jun 8	85	7	1.1	0.0	0.0	0.0	0.5	5	0	0	0	1										
May 22	102	8	0.2	0.5	0.0	0.2	0.0	1	1	0	1	0										
Apr 27	127	9	0.2	0.0	0.0	0.0	0.0	1	0	0	0	0										
Apr 21	133	10	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0										
			100	100	100	100	100	445	200	294	494	189										

*Allen, J. M., 1963.

P = Last primary molted.

BAND-TAILED PIGEON

Banding

Between 1969 and 1978, 2,649 total pigeons were banded in Utah and 975 recaptured. Results of banding efforts through 1972 indicated a direct recovery rate of 1.4 percent. If expanded, using an assumed 30 percent band reporting rate, an estimated harvest rate of less than 5 percent of the state's pigeon population is indicated. Addition of an estimated 16 percent crippling loss would result in a total kill rate of from 5-10 percent, well within the harvestable surplus.

Harvest

Results of the 1987 band-tailed pigeon harvest are unknown, because no hunter reports were received. Permits were not required, therefore, a questionnaire was not sent to participants. Harvest trends since 1970 are shown in Table 14.

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Band-tailed pigeon hunters	---	---	---
Band-tailed pigeon harvest	---	---	---
Hunter-days afield	---	---	---
Pigeons per hunter-day	---	---	---
Pigeons per hunter	---	---	---

Total hunters, hunter-days afield and total harvest are unknown for 1986, however, it is assumed that a majority of the 1987 harvest again occurred in Iron and Washington counties.

Table 13. Band-tailed pigeon harvest statistics, 1987.

Area Hunted	Participating Hunters		Hunter-days		Harvest		Pigeons/Hunter-day		Percent of	
	Reported	Calc.	Reported	Calc.	Reported	Calc.	Reported	Calc.	Pressure*	Harvest
Beaver County	--	--	--	--	--	--	--	--	--	--
Blue Mountain-Elk Ridge	--	--	--	--	--	--	--	--	--	--
Carbon County	--	--	--	--	--	--	--	--	--	--
Garfield County	--	--	--	--	--	--	--	--	--	--
Iron County	--	--	--	--	--	--	--	--	--	--
Kane County	--	--	--	--	--	--	--	--	--	--
LaSal Mountain	--	--	--	--	--	--	--	--	--	--
Millard County	--	--	--	--	--	--	--	--	--	--
Piute County	--	--	--	--	--	--	--	--	--	--
Utah County	--	--	--	--	--	--	--	--	--	--
Washington County	--	--	--	--	--	--	--	--	--	--
Wayne County	--	--	--	--	--	--	--	--	--	--
Mixed counties (Washington & Iron)	--	--	--	--	--	--	--	--	--	--
TOTALS	--	--	--	--	--	--	--	--	--	--

*Based on hunter-days.

Table 14. Band-tailed pigeon harvest trend, 1970-87.

Year	Total Hunters Afield	Total Harvest	Hunter-Days Afield	Pigeons Per Hunter-day	Pigeons Per Hunter
1970	34	109	53	2.1	3.2
1971	54	156	110	1.4	2.9
1972	61	211	122	1.7	3.5
1973	25	18	42	0.4	0.7
1974	74	95	141	0.7	1.3
1975	54	116	119	1.0	2.2
1976	54	119	162	0.7	2.2
1977	70	435	225	1.9	6.2
1978	78	264	238	1.1	3.4
1979	62	117	133	0.9	1.9
1980	62	182	175	1.0	2.9
1981	67	101	142	0.7	1.5
1982	51	113	125	0.9	2.2
1983	--	--	--	--	--
1984	--	--	--	--	--
1985	--	--	--	--	--
1986	--	--	--	--	--
1987	--	--	--	--	--
TOTALS (1970-87)	746	2,036	1,787	1.1	2.7
AVERAGES (1970-82)	57	157	137	1.1	2.8

CHUKAR PARTRIDGE

SUMMARY

The statewide breeding population of chukars increased in 1987 following another normal winter in northwestern Utah. Late winter and early spring precipitation, critical to successful chukar production, was average. Above normal temperatures from January through June also resulted in exposed winter feed for chukars and good nesting conditions.

Results of the brood survey indicated that brood production was average, although breeding populations were down. Favorable nesting conditions and adequate forage were available as a result of average precipitation during late winter and early spring. However, wet and cool weather in July and August may have adversely affected brood survival. Chukar density decreased significantly during 1987, but was still 19 percent above average.

Harvest statistics reflected an increase in harvest. Hunter success (chukars per hunter-day) increased 5 percent from 1986. Chukar hunters increased 20 percent and spent 23 percent more time afield than in 1986. Apparently, hunting pressure increased in response to larger populations.



Brood Counts

Results of the annual random brood survey for 1987 are shown in Table 1 of this section. Long-term trends of young-adult ratios, mean brood size and chukars observed per 100 hours are found in Tables 2-4. Following are the survey results for 1987 compared to 1986 and the 10-year (1977-86) average:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total chukars observed	843	-3	+34
Young per 100 adults	411	-35	+3
Mean brood size	7.93	-2	-2
Chukars observed per 100 hours	496	-22	+19
Total hours effort	213	+72	+25

Harvest data for 1986 indicated breeding populations for 1987 were still significantly below statewide average. The 1986-87 winter weather was not as severe as the two winters prior to 1985-86. Late winter and early spring precipitation (January-April) was slightly below average over the entire state (Figure 2). However, significant above average temperatures were common from January through June. Slightly above normal precipitation occurred in July and August during the brood rearing period and temperatures were below average during this period.

Effort on chukar brood counts increased from 1986 and was above average.

Brood count sample sizes were again small for all regions. The Central Region counted 22, the Northern Region counted 2, and the Southern Region counted 2 of the state total of 39 broods. Chukar density was 19 percent above the 10-year average but production was down slightly from 1986.

Harvest

Hunter Questionnaire

Results of the hunter questionnaire survey for 1987 are shown in Table 5. Long-term trends of chukars bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 6-8 and total statewide harvest statistics in Table 9. Following is a comparison of 1987 harvest statistics to 1986 and the 29-year average:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Chukar hunters	11,276	+20	-22
Chukars harvested	32,848	+30	-20
Hunter-days afield	39,099	+23	-5
Chukars per hunter-day	0.84	+5	-16
Chukars per hunter	2.91	+8	+3

Chukar hunters spent 23 percent more time afield and harvested about 30 percent more birds than in 1986. Chukars per hunter-day was slightly above the 1986 level and 16 percent below the statewide average. The Central Region again had the highest percentage of the harvest (50%) in 1987, and also had the highest percentage of hunter pressure (49%).

Field Bag Check

A summary of field bag check data for 1987 is shown in Table 10. The hunter success trend determined by field bag checks since 1982 is shown in Table 11. Data for the 1987 season compared to 1986 and the (1966-86) average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total hunters checked	90	-83	-82
Total hours hunted	342	-89	-85
Chukars per hunter (complete hunts)	1.37	+813	+43
Chukars bagged per 100 hours	32	+700	+52
Average hours per hunter-day (complete hunts)	4.3	-28	-7
Hours hunted per chukar bagged (complete hunts)	3.2	-92	+68

Field bag checks indicated hunter success was up substantially from 1986 and was well above average (43%). However, these data were significantly influenced by the large sample from the Box Elder County Checking Station. Box Elder county hunters accumulated 50% of total hours afield and harvested 55% of total birds. A reduction in hours hunted per chukar bagged and shorter hunter days also indicated improved chukar hunter success in 1987.

It was raining on opening day on the Book Cliffs.

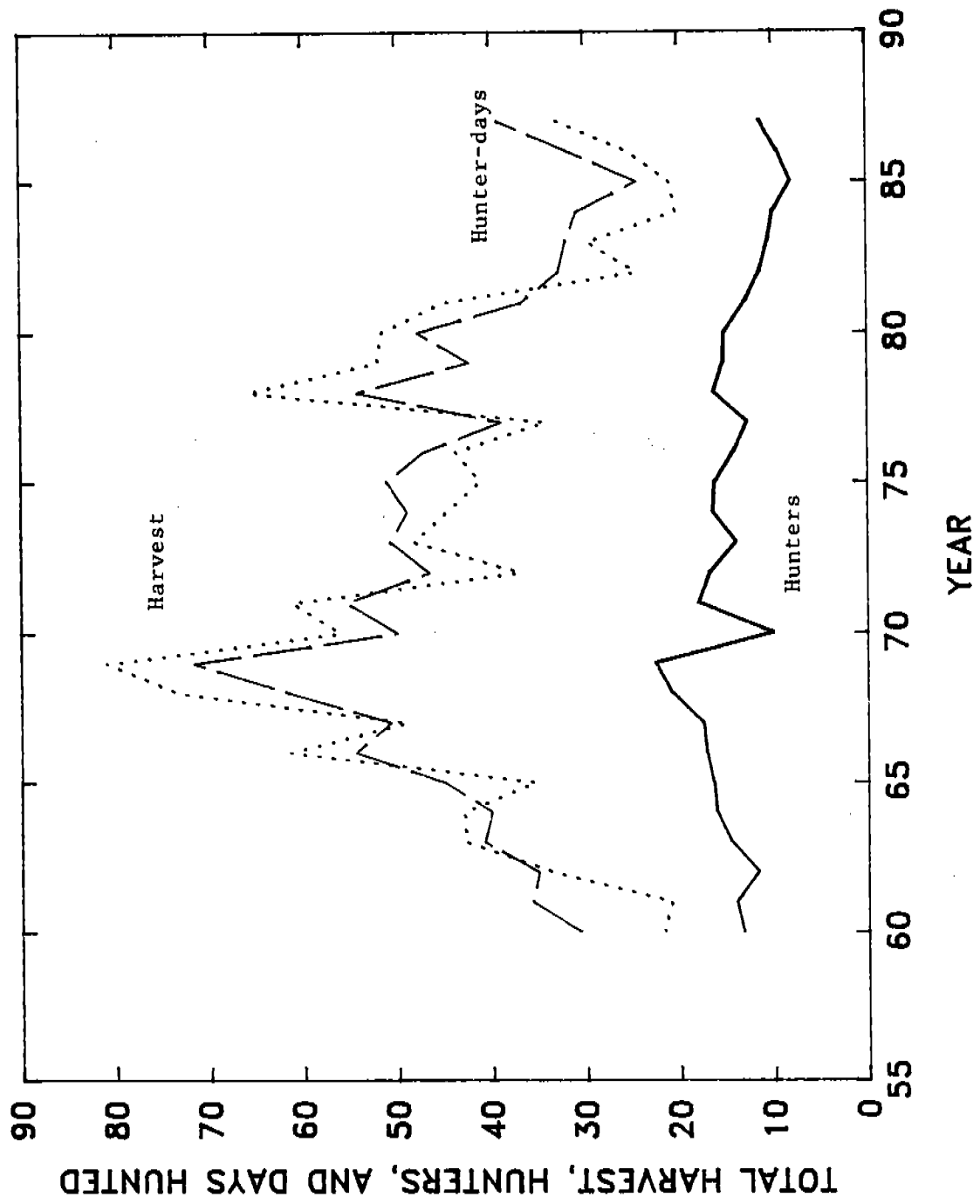


Figure 1. Statewide trends of chukar partridge harvest statistics.

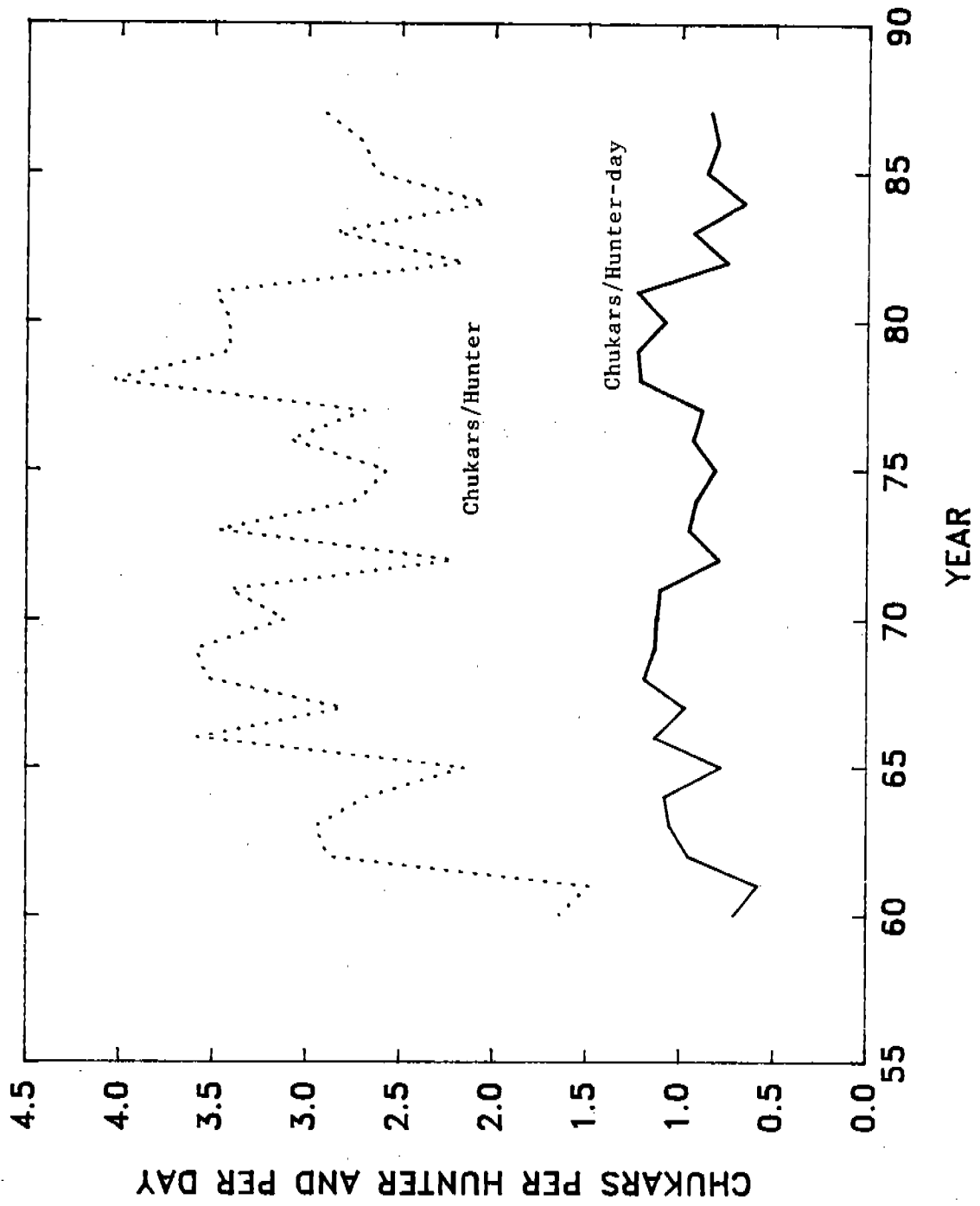


Figure 2. Statewide trends of chukar hunter success rates, 1968-88.

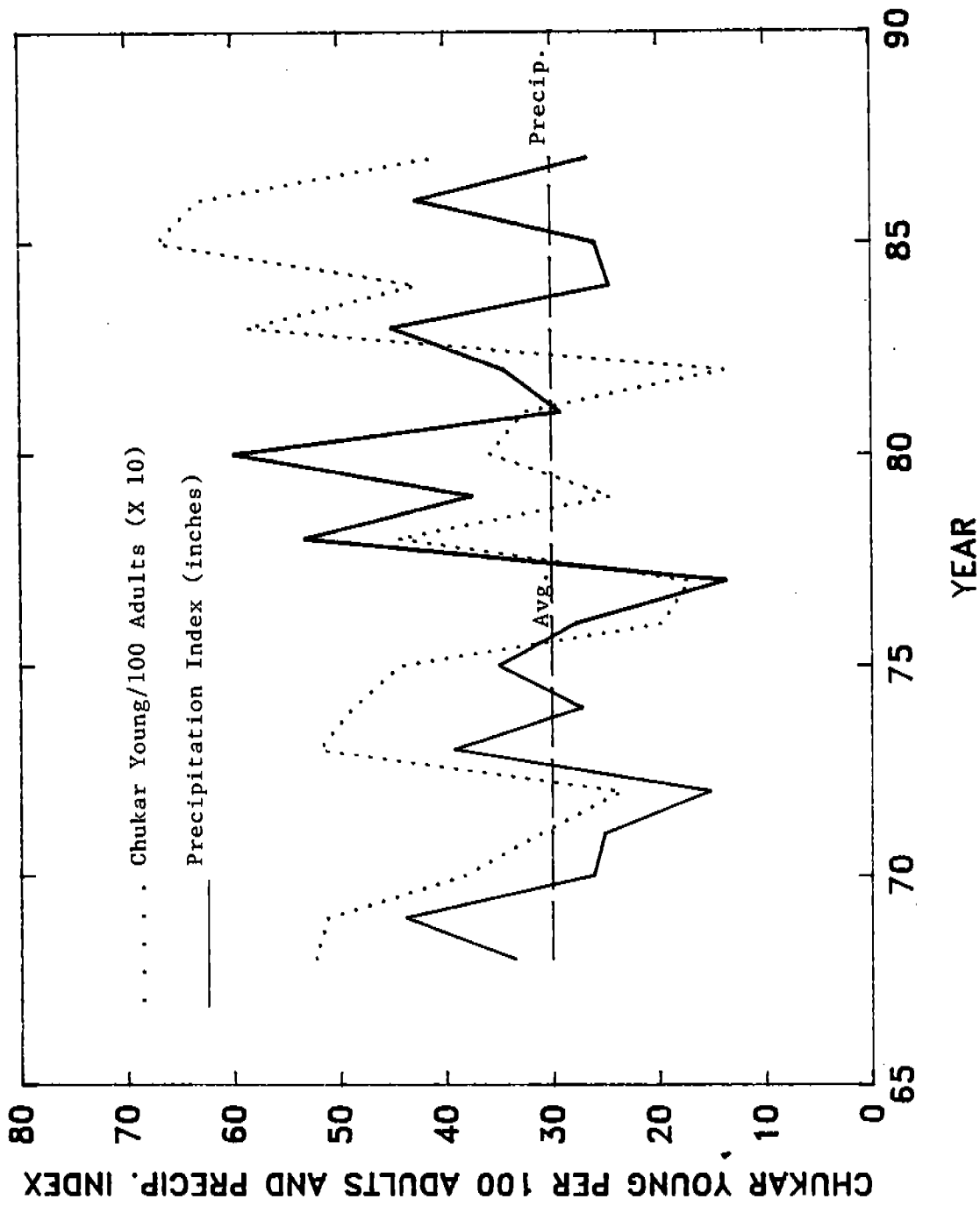


Figure 3. Relationship between late winter and early spring (Jan.-April) precipitation and chukar production.

Table 1. Chukar summer inventory summary, 1987.

Region and County	Distinct Broods		Mixed Yng & Adults		Total Adults w/o Yng	Total Yng	Total Adults	Total Yng	Veh. Miles	Hours of Effort		Birds/100 Hr				
	# Ad	Yng	Ad	Yng						Yng	Ad		Veh.	Horse	Walk	Total
Northern Region																
Box Elder	2	3	17	8.50	0	0	3	6	17	283	60	11	0	47	58	40
Cache	0	0	0	--	4	34	0	4	34	850	724	46	0	0	46	83
Davis	0	0	0	--	11	9	27	38	9	24	29	7	0	8	15	313
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	2	3	17	8.50	15	43	30	48	60	125	813	64	0	55	119	91
Central Region																
Juab	10	10	80	8.00	7	22	0	17	102	600	143	11	0	3	14	850
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	10	10	80	8.00	10	43	3	23	123	535	150	13	0	0	13	1,123
Utah	2	2	21	10.50	2	14	0	4	35	875	15	2	--	--	2	1,950
Wasatch	0	0	0	0	0	0	0	0	0	0	90	7	--	--	7	0
REGIONAL TOTALS	22	22	181	8.23	19	79	3	44	260	591	398	33	0	3	36	844
Southern Region																
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Piute	2	2	10	5.00	8	27	--	10	37	370	--	3	--	--	3	1,567
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	2	2	10	5.00	8	27	--	10	37	370	--	3	--	--	3	1,567
Northeastern Region																
Daggett	0	0	0	0	0	0	0	0	0	0	125	15	0	0	15	0
Duchesne	0	0	0	0	0	0	0	0	0	0	120	7	0	1	8	0
Uintah	1	1	10	10.00	20	46	0	21	56	267	60	8	0	1	9	856
REGIONAL TOTALS	1	1	10	10.00	20	46	0	21	56	267	305	30	0	2	32	241
Southeastern Region																
Carbon	3	3	29	9.62	4	42	0	7	71	1,014	5	1	--	--	1	7,800
Emery	2	2	10	5.00	7	35	0	9	45	500	65	7	--	--	7	771
Grand	7	7	60	8.57	11	89	8	26	149	573	105	15	0	0	15	1,167
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	*12	12	99	8.25	22	166	8	42	265	631	175	23	0	0	23	1,335
STATE TOTALS	39	40	317	7.93	84	361	41	165	678	411	1,691	153	0	60	213	496

Table 2. Trend of chukar young per 100 adults, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	300	562	198	111	326	120	--	--	4,200	700	283	
Cache	--	--	300	--	--	--	600	--	--	--	850	
Davis	--	--	3	43	65	7	--	--	--	--	24	
Morgan	--	--	--	--	--	--	750	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	750	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	300	562	81	53	193	27	262	--	4,200	560	125	255
Central Region												
Juab	356	1,100	--	557	315	600	--	800	--	739	600	
Salt Lake	380	--	283	--	400	50	--	--	--	--	--	
Sanpete	331	440	500	767	--	400	--	--	--	--	--	
Tooele	96	686	771	697	359	585	--	436	550	566	535	
Utah	150	0	205	243	--	--	--	--	300	--	875	
Wasatch	--	--	--	--	--	--	800	--	--	--	--	
REGIONAL TOTALS	230	386	518	572	348	512	800	481	457	642	591	495
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	350	--	--	122	--	--	--	125*	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	340	--	--	--	--	--	--	--	
Millard	95	150	450	550	200	--	--	--	--	--	--	
Piute	--	0	500	--	938	642	--	--	--	--	370	
Sevier	--	--	--	600	800	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	900	--	--	--	600	737	--	--	--	--	
REGIONAL TOTALS	95	233	420	425	410	389	737	--	--	--	370	387
Northeastern Region												
Daggett	--	--	575	--	--	--	--	--	--	--	0	
Duchesne	375	0	--	--	163	--	--	--	--	--	0	
Uintah	--	--	--	--	--	--	--	--	--	--	267	
REGIONAL TOTALS	375	--	--	--	78	--	--	--	--	--	267	227
Southeastern Region												
Carbon	125	--	--	700	--	--	--	359	--	1,300	1,014	
Emery	--	500	--	--	--	220	--	--	--	--	500	
Grand	0	980	416	--	577	518	617	775	730	730	573	
San Juan	58	220	--	--	533	--	--	337	--	--	--	
REGIONAL TOTALS	59	591	416	700	575	426	617	392	408	287*	631	447
STATE TOTALS	170	444	245	358	326	138	586	426	670	631	411	399

Table 3. Trend of chukar mean brood size from 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	6.00	14.60	9.57	--	8.33	12.00	--	--	9.00	--	8.50	--
Cache	--	--	3.00	--	--	--	6.00	--	--	--	--	--
Davis	--	--	2.00	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	7.50	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	7.50	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	6.00	14.60	8.00	--	8.33	3.00	7.00	--	9.00	--	8.50	7.99
Central Region												
Juab	9.00	11.00	--	7.70	5.45	6.00	--	8.00	--	7.45	8.00	--
Salt Lake	--	--	5.67	--	4.00	--	--	--	--	--	--	--
Sanpete	6.50	5.00	6.33	--	--	--	--	--	--	--	--	--
Tooele	6.00	6.50	14.07	9.91	8.92	10.60	--	6.00	8.43	7.86	8.00	--
Utah	3.00	0.00	6.00	4.00	--	--	--	--	10.00	--	10.50	--
Wasatch	--	--	--	6.00	--	--	--	--	--	--	--	--
REGIONAL TOTALS	6.64	6.50	11.38	8.16	7.13	10.14	--	6.80	8.63	7.68	8.23	8.12
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield*	--	--	--	--	--	--	--	--	--	2.00*	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	3.50	0.00	6.00	10.00	--	--	--	--	--	--	--	--
Piute	--	0.00	10.00	--	10.50	3.00	--	--	--	--	5.00	--
Sevier	--	--	--	--	8.00	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	9.00	--	--	--	9.00	--	--	--	--	--	--
REGIONAL TOTALS	3.50	9.00	8.00	10.00	9.67	7.00	--	--	--	5.00	--	7.86
Northeastern Region												
Daggett	--	--	--	--	9.00	--	--	--	--	--	--	--
Duchesne	3.75	0.00	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	10.00	--	--	--	10.00	--
REGIONAL TOTALS	3.75	--	--	--	9.00	--	10.00	--	--	--	10.00	7.58
Southeastern Region												
Carbon	--	--	--	--	--	--	--	5.50	--	12.50	9.67	--
Emery	6.17	--	5.00	--	--	--	--	--	5.00	--	5.00	--
Grand	6.00	--	0.00	12.50	--	11.90	8.25	7.75	9.00	--	8.57	--
San Juan	3.00	--	1.00	--	--	5.33	--	--	--	--	--	--
REGIONAL TOTALS	5.58	--	3.00	12.50	--	11.30	8.25	7.00	7.67	10.40*	8.25	8.21
STATE TOTALS	7.10	5.77	8.75	10.35	8.23	9.48	8.00	6.91	8.46	8.13	7.93	8.12

Table 4. Trend of chukars observed per 100 hours, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
<u>Northern Region</u>												
Box Elder	32	307	438	43	645	90	--	--	239	168	40	
Cache	--	--	57	--	700	--	700	--	--	--	83	
Davis	--	--	608	760	810	1,127	100	--	--	22	313	
Morgan	--	--	--	--	--	--	850	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	32	307	430	140	502	479	227	--	155	102	91	264
<u>Central Region</u>												
Juab	152	109	1,500	206	692	363	--	200	--	2,611	850	
Salt Lake	400	--	209	--	500	43	--	--	--	--	--	
Sanpete	192	142	200	248	--	857	--	--	--	--	--	
Tooele	136	917	1,038	1,468	985	1,013	--	441	681	1,046	1,123	
Utah	33	133	1,220	533	--	38	--	--	578	--	1,950	
Wasatch	--	--	--	350	--	--	491	--	--	--	--	
REGIONAL TOTALS	157	243	623	440	722	578	164	291	542	1,424	844	418
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	1,200	--	--	500	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	216	182	220	236	1,467	--	--	--	--	--	--	
Piute	--	0	120	--	1,660	433	--	--	--	--	1,567	
Sevier	--	--	--	1,400	900	17	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	10	83	--	--	--	700	3,350	--	--	--	--	
REGIONAL TOTALS	114	115	242	525	1,436	266	3,350	--	--	--	1,567	864
<u>Northeastern Region</u>												
Daggett	0	--	--	--	--	--	--	--	--	--	--	
Duchesne	73	0	0	--	300	790	--	--	--	--	--	
Uintah	0	--	0	--	614	454	86	--	--	0	856	
REGIONAL TOTALS	27	0	0	--	533	348	27	--	--	0	241	136
<u>Southeastern Region</u>												
Carbon	450	--	0	1,600	--	--	--	420	--	--	7,800	
Emery	0	200	--	--	--	--	--	--	833	--	771	
Grand	40	379	1,020	--	2,891	1,167	2,871	291	424	2,075	1,167	
San Juan	136	67	0	--	1,120	--	--	1,750	--	--	--	
REGIONAL TOTALS	98	185	230	160	2,338	1,578	2,871	858	530	2,075	1,335	1,092
STATE TOTALS	96	213	396	336	978	496	398	176	286	633	496	401

Table 5. Summary of chukar hunter success and distribution of harvest and hunting pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	76	5,613	3,480	0.62	14.35	10.59
Cache	14	637	539	0.85	1.63	1.64
Davis	4	122	24	0.20	0.31	0.07
Morgan	2	73	98	1.33	0.18	0.29
Rich	1	24	24	1.00	0.06	0.07
Summit	2	98	122	1.25	0.25	0.37
Weber	8	441	196	0.44	1.12	0.59
REGIONAL TOTALS	107	7,011	4,486	0.64	17.93	13.65
<u>Central Region</u>						
Juab	46	3,775	4,167	1.10	9.65	12.68
Salt Lake	13	1,225	1,421	1.16	3.13	4.32
Sanpete	27	1,617	931	0.58	4.13	2.83
Tooele	100	8,016	6,716	0.84	20.50	20.44
Utah	64	4,510	3,211	0.71	11.53	9.77
Wasatch	2	147	122	0.83	0.37	0.37
REGIONAL TOTALS	252	19,292	16,571	0.86	49.34	50.44
<u>Southern Region</u>						
Beaver	8	735	465	0.63	1.88	1.41
Garfield	3	122	49	0.40	0.31	0.14
Iron	0	0	0	0.00	0.00	0.00
Kane	1	24	0	0.00	0.06	0.00
Millard	44	3,946	4,314	1.09	10.09	13.13
Piute	9	514	416	0.81	1.31	1.26
Sevier	45	3,260	1,863	0.57	8.33	5.67
Washington	1	49	0	0.00	0.12	0.00
Wayne	1	24	49	2.00	0.06	0.14
REGIONAL TOTALS	112	8,677	7,158	0.82	22.19	21.79
<u>Northeastern Region</u>						
Daggett	1	24	73	3.00	0.06	0.22
Duchesne	4	122	24	0.20	0.31	0.07
Uintah	4	247	0	0.00	0.78	0.00
REGIONAL TOTALS	8	465	784	1.68	1.19	2.38
<u>Southeastern Region</u>						
Carbon	13	367	318	0.87	0.94	0.97
Emery	23	1,176	1,054	0.90	3.00	3.20
Grand	15	1,887	2,255	1.19	4.82	6.86
San Juan	2	73	122	1.67	0.18	0.37
REGIONAL TOTALS	53	3,505	3,750	1.07	8.96	11.41
Unknown Counties	0	0	0	0.00	0.00	0.00
STATE TOTALS	537	39,099	32,848	0.84	100	100

*Total hunter trips from questionnaire returns.

Table 6. Summary of chukars bagged per hunter-day by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>								
Box Elder	1.41	1.55	0.75	1.00	0.30	0.55	0.49	0.62
Cache	0.74	0.42	0.38	0.42	0.43	0.13	0.14	0.85
Davis	0.75	0.33	0.47	0.17	0.53	0.43	0.50	0.20
Morgan	0.75	0.75	1.21	1.02	0.10	0.30	0.00	1.33
Rich	0.60	0.50	0.67	0.83	0.80	0.00	0.00	1.00
Summit	0.78	0.73	0.00	1.38	0.67	0.00	0.00	1.25
Weber	0.48	1.25	0.91	0.61	2.46	0.18	0.00	0.44
REGIONAL TOTALS	1.25	1.28	0.74	0.91	0.41	0.46	0.39	0.64
<u>Central Region</u>								
Juab	0.86	0.66	0.57	1.00	0.92	1.63	0.87	1.10
Salt Lake	0.89	1.32	0.96	0.95	1.59	0.96	1.08	1.16
Sanpete	0.90	1.72	0.57	0.77	1.14	1.28	0.88	0.58
Tooele	0.89	0.97	0.73	0.94	0.95	1.12	0.90	0.84
Utah	1.01	0.81	0.74	0.85	0.62	0.71	0.65	0.71
Wasatch	0.58	0.33	0.94	0.61	0.07	0.07	0.00	0.83
REGIONAL TOTALS	0.92	0.98	0.73	0.90	0.88	1.06	0.84	0.86
<u>Southern Region</u>								
Beaver	0.86	2.33	0.61	1.80	1.60	0.00	0.13	0.63
Garfield	2.55	1.11	1.00	0.38	1.83	0.00	0.33	0.40
Iron	0.00	1.00	0.17	--	2.00	0.00	0.00	0.00
Kane	4.00	0.00	0.00	0.38	0.67	0.00	0.00	0.00
Millard	1.04	1.92	1.57	1.28	0.80	1.55	1.88	1.09
Piute	0.56	1.78	0.59	0.68	0.50	0.71	0.13	0.81
Sevier	0.39	1.48	0.41	0.40	0.37	0.21	0.48	0.57
Washington	0.00	0.00	0.00	--	0.50	0.00	0.00	0.00
Wayne	2.85	2.29	0.83	0.50	0.00	1.00	0.00	2.00
REGIONAL TOTALS	0.85	1.71	0.68	0.71	0.63	0.72	0.92	0.82
<u>Northeastern Region</u>								
Daggett	0.00	0.00	0.00	--	--	0.00	0.00	3.00
Duchesne	1.28	1.30	0.43	0.50	0.22	2.00	0.00	0.20
Uintah	0.27	1.20	2.06	1.00	1.45	1.00	0.00	1.68
REGIONAL TOTALS	1.00	1.25	1.15	0.63	0.90	1.09	0.00	1.44
<u>Southeastern Region</u>								
Carbon	1.01	1.24	0.76	0.88	0.42	0.42	0.89	0.87
Emery	1.37	1.06	0.83	1.54	0.44	0.62	0.74	0.90
Grand	1.80	1.89	1.02	1.61	0.37	1.31	1.57	1.19
San Juan	1.67	0.67	2.20	1.82	0.25	0.00	0.86	1.67
REGIONAL TOTALS	1.44	1.42	0.90	1.43	0.40	0.65	1.05	1.07
Unknown Counties	0.17	1.83	1.00	1.27	0.00	0.00	0.00	0.00
STATE TOTALS	1.08	1.23	0.75	0.93	0.66	0.86	0.80	0.84

Table 7. Percentage distribution of chukar harvest by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>								
Box Elder	38.93	26.85	25.31	23.59	6.64	8.39	7.64	10.59
Cache	1.84	1.27	1.25	1.49	1.81	0.20	0.24	1.64
Davis	0.49	0.09	0.56	0.09	1.61	0.61	0.16	0.07
Morgan	2.24	1.98	3.20	2.16	0.30	0.31	0.00	0.29
Rich	0.10	0.05	0.13	0.22	0.41	0.00	0.00	0.07
Summit	0.23	0.52	0.00	1.31	0.20	0.00	0.00	0.37
Weber	0.49	0.94	1.94	1.40	3.22	0.41	0.00	0.59
<u>REGIONAL TOTALS</u>	<u>44.33</u>	<u>31.71</u>	<u>32.39</u>	<u>30.25</u>	<u>14.18</u>	<u>9.92</u>	<u>8.04</u>	<u>13.65</u>
<u>Central Region</u>								
Juab	3.33	2.31	2.07	3.16	7.24	11.67	7.89	12.68
Salt Lake	2.90	6.94	4.51	4.15	7.04	5.12	3.33	4.32
Sanpete	2.14	2.93	3.01	3.56	2.51	8.90	4.72	2.83
Tooele	14.56	14.11	18.23	20.34	26.66	32.85	27.07	20.44
Utah	12.71	7.69	13.97	12.76	11.97	10.75	9.02	9.77
Wasatch	0.46	0.05	1.07	0.63	0.10	0.10	0.00	0.37
<u>REGIONAL TOTALS</u>	<u>36.10</u>	<u>34.03</u>	<u>42.86</u>	<u>44.60</u>	<u>55.53</u>	<u>69.40</u>	<u>52.03</u>	<u>50.44</u>
<u>Southern Region</u>								
Beaver	0.40	0.99	1.07	0.40	0.80	0.00	0.16	1.41
Garfield	1.84	0.47	0.38	0.13	1.11	0.00	0.24	0.14
Iron	0.00	0.05	0.06	0.00	0.20	0.00	0.00	0.00
Kane	0.13	0.00	0.00	0.27	0.20	0.00	0.00	0.00
Millard	1.65	3.63	5.33	4.55	10.96	10.64	18.78	13.13
Piute	0.92	6.13	0.63	0.94	3.22	1.53	0.40	1.26
Sevier	1.68	5.10	4.07	2.34	3.72	0.72	5.93	5.67
Washington	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
Wayne	1.22	0.76	0.31	0.09	0.00	0.31	0.00	0.14
<u>REGIONAL TOTALS</u>	<u>7.84</u>	<u>17.13</u>	<u>11.84</u>	<u>8.73</u>	<u>20.32</u>	<u>13.20</u>	<u>25.53</u>	<u>21.79</u>
<u>Northeastern Region</u>								
Daggett	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
Duchesne	1.35	0.61	0.63	0.22	0.20	0.20	0.00	0.07
Uintah	0.10	0.57	2.32	0.31	1.61	1.02	0.00	2.38
<u>REGIONAL TOTALS</u>	<u>1.45</u>	<u>1.18</u>	<u>2.94</u>	<u>0.53</u>	<u>1.81</u>	<u>1.23</u>	<u>0.00</u>	<u>2.68</u>
<u>Southeastern Region</u>								
Carbon	2.34	2.64	2.82	1.94	2.51	1.33	2.60	0.97
Emery	2.34	4.29	3.38	8.12	2.72	3.17	4.15	3.20
Grand	5.20	8.31	3.01	4.28	2.81	1.74	7.15	6.86
San Juan	0.33	0.19	0.69	0.90	0.10	0.00	0.49	0.37
<u>REGIONAL TOTALS</u>	<u>10.21</u>	<u>15.43</u>	<u>9.90</u>	<u>15.24</u>	<u>8.15</u>	<u>6.24</u>	<u>14.39</u>	<u>11.41</u>
Unknown Counties	0.07	0.52	0.06	0.63	0.00	0.00	0.00	0.00
<u>STATE TOTALS</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>

Table 8. Percentage distribution of chukar hunting pressure by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>								
Box Elder	29.87	21.19	25.13	22.01	14.54	13.02	12.36	14.35
Cache	2.70	3.71	2.44	3.27	2.77	1.04	1.43	1.63
Davis	0.71	0.35	0.89	0.50	1.98	1.23	0.26	0.31
Morgan	3.23	3.24	1.97	1.97	1.98	0.88	0.91	0.18
Rich	0.18	0.12	0.14	0.25	0.33	0.09	0.07	0.06
Summit	0.32	0.87	0.70	0.88	0.20	0.09	0.07	0.25
Weber	1.10	0.93	1.59	2.14	0.86	1.93	1.50	1.12
REGIONAL TOTALS	39.10	30.40	32.86	31.01	22.67	18.66	16.59	17.93
<u>Central Region</u>								
Juab	4.19	4.28	2.72	2.93	5.15	6.16	7.22	9.65
Salt Lake	3.52	6.43	3.52	4.07	2.91	4.58	2.47	3.13
Sanpete	2.56	2.08	3.94	4.32	1.45	5.98	4.29	4.13
Tooele	17.54	17.83	18.71	20.16	18.44	25.26	24.14	20.50
Utah	13.64	11.70	14.16	13.87	12.62	13.02	11.13	11.53
Wasatch	0.85	0.17	0.84	0.96	0.99	1.32	0.20	0.37
REGIONAL TOTALS	42.29	42.50	43.88	46.31	41.57	56.34	49.45	49.34
<u>Southern Region</u>								
Beaver	0.50	0.52	1.31	0.21	0.33	1.85	0.98	1.88
Garfield	0.78	0.52	0.28	0.33	0.39	0.97	0.59	0.31
Iron	0.04	0.06	0.28	0.08	0.07	0.00	0.00	0.00
Kane	0.04	0.00	0.14	0.67	0.20	0.89	0.26	0.06
Millard	1.70	2.32	2.53	3.31	8.99	5.89	8.00	10.09
Piute	1.78	4.23	0.80	1.30	4.23	1.85	2.47	1.31
Sevier	4.65	4.23	7.36	5.45	6.61	2.99	9.95	8.33
Washington	0.00	0.00	0.05	0.00	0.13	1.06	0.00	0.12
Wayne	0.46	0.41	0.28	0.17	0.20	0.26	0.00	0.06
REGIONAL TOTALS	9.94	12.28	13.03	11.51	21.14	15.76	22.25	22.19
<u>Northeastern Region</u>								
Daggett	0.04	0.00	0.00	0.08	0.00	0.00	0.00	0.06
Duchesne	1.14	0.58	1.08	0.42	0.59	0.09	0.00	0.31
Uintah	0.39	0.58	0.84	0.29	0.73	0.88	0.78	1.19
REGIONAL TOTALS	1.56	1.16	1.92	0.79	1.32	0.97	0.78	1.56
<u>Southeastern Region</u>								
Carbon	2.49	2.61	2.77	2.05	3.90	2.73	2.34	0.94
Emery	1.85	4.98	3.05	4.90	4.10	4.40	4.49	3.00
Grand	3.13	5.39	2.20	2.47	5.02	1.14	3.64	4.82
San Juan	0.21	0.35	0.23	0.46	0.26	0.00	0.46	0.18
REGIONAL TOTALS	7.67	13.32	8.25	9.89	13.28	8.27	10.93	8.96
Unknown Counties	0.43	0.35	0.05	0.46	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100	100

Table 9. Statewide summary of chukar partridge harvest statistics, 1958-87.

Year	Total Hunters	Total Harvest	Hunters-days Afield	Chukars Per Hunter-day	Chukars Per Hunter
1958	11,124	19,578	25,100	0.78	1.76
1959	11,154	8,700	26,364	0.33	0.78
1960	13,252	21,733	30,610	0.71	1.64
1961	14,046	20,821	35,675	0.58	1.48
1962	11,638	33,500	35,010	0.95	2.88
1963	14,532	42,806	40,824	1.05	2.95
1964	16,090	42,974	39,971	1.08	2.67
1965	16,431	35,335	45,067	0.78	2.15
1966	17,133	61,370	54,448	1.13	3.58
1967	17,485	48,906	50,671	0.97	2.80
1968	20,744	73,218	61,402	1.19	3.53
1969	22,529	80,917	71,674	1.13	3.59
1970	18,013	56,053	49,911	1.12	3.11
1971	17,917	61,151	55,378	1.10	3.41
1972	16,685	36,925	46,502	0.79	2.21
1973	13,888	48,135	50,677	0.95	3.47
1974	16,412	44,658	48,856	0.91	2.72
1975	16,156	41,151	51,083	0.81	2.57
1976	14,171	43,726	47,143	0.93	3.09
1977	12,691	34,155	38,873	0.88	2.69
1978	16,291	65,747	54,239	1.21	4.04
1979	15,210	51,918	42,254	1.23	3.41
1980	15,100	51,511	47,778	1.08	3.41
1981	12,907	44,983	36,662	1.23	3.49
1982	11,326	24,460	32,691	0.75	2.16
1983	10,418	29,649	31,904	0.93	2.85
1984	9,846	20,179	30,715	0.66	2.05
1985	7,930	20,938	24,346	0.86	2.64
1986	9,397	25,346	31,672	0.80	2.70
1987	11,276	32,848	39,099	0.84	2.91
TOTALS (1958-87)	431,792	1,223,391	1,231,599	(27.76)	(82.66)
AVERAGES (1958-86)	14,501	41,053	41,121	1.00	2.83

Table 10. Chukar field bag check summary, 1987.

Region and County	ALL HUNTS					COMPLETE HUNTS					
	Total Parties	Total Hunters	Total Hours	Total Birds/100 Hr	Total Complete Hunts	Total Hunters	Total Hours	Total Birds	Total Birds/100 Hr	Birds/Hunter	
<u>Northern Region</u>											
Box Elder	22	40	170	54	32	19	34	154	48	31	1.41
Cache	10	19	68	26	38	10	19	68	26	38	1.37
Davis	1	1	4	1	25	1	1	4	1	25	1.00
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	33	60	242	81	33	30	54	226	75	33	1.39
<u>Central Region</u>											
Juab	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--
Tooele	1	2	18	4	22	1	2	18	4	22	2.00
Utah	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	1	2	18	4	22	1	2	18	4	22	2.00
<u>Southern Region</u>											
Beaver	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
<u>Northeastern Region</u>											
Daggett	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
<u>Southeastern Region</u>											
Carbon	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--
Grand	11	28	82	14	17	1	3	12	2	17	0.67
San Juan	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	11	28	82	14	17	1	3	12	2	17	0.67
STATE TOTALS	45	90	342	99	29	32	59	256	81	32	1.37

Table 11. Chukar hunter success trend as determined by field bag checks, 1982-87.

Region and County	1982		1983		1984		1985		1986		1987	
	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter
<u>Northern Region</u>												
Box Elder	5	0.28	11	0.50	2	0.09	--	0.01	7	0.27	31	1.41
Cache	--	--	--	--	6	0.50	--	--	--	--	38	1.37
Davis	--	--	--	--	--	--	--	--	--	--	25	1.00
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	29	1.00	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	5	0.28	11	0.51	3	0.10	--	0.01	7	0.27	33	1.39
<u>Central Region</u>												
Juab	--	--	--	--	--	--	36	1.36	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	10	0.50	16	0.83	--	--	--	--	--	--	22	2.00
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	10	0.50	16	0.83	--	--	36	1.36	--	--	22	2.00
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	28	0.88	--	--	--	--
Garfield	25	0.74	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	550	2.75	--	--	15	1.00	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	25	0.74	550	2.75	--	--	23	0.91	--	--	--	--
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
<u>Southeastern Region</u>												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	26	0.81	79	3.00	--	--	--	--	100	3.00	--	--
Grand	--	--	83	3.29	--	--	40	3.14	45	1.52	17	0.67
San Juan	--	--	--	--	25	1.50	--	--	--	--	--	--
REGIONAL TOTALS	20	0.67	81	3.17	12	0.38	40	3.14	51	1.69	17	0.67
STATE TOTALS	9	0.40	22	0.98	4	0.14	2	0.12	3	0.15	32	1.37

SAGE GROUSE

SUMMARY

Harvest data for 1986 indicated below average breeding populations of sage grouse for 1987. Strutting ground surveys indicated a slight increase in the average male grouse attendance from 1986 but populations remained well below average.

Brood surveys showed increased production throughout the state. Birds observed per 100 hours increased 43 percent compared to 1986, and was above average. The ratio of young to adults increased 40 percent indicating production had returned to average.

The increase in production, as indicated from brood counts, in 1987, was somewhat apparent in harvest statistics collected from questionnaires and from field bag checks. Total statewide harvest increased 8 percent but was 14 percent below the 24-year average. Sage grouse bagged per hunter and sage grouse bagged per hunter-day also increased from the previous year. However, age ratios derived from wings indicated a 26 percent decrease in young per 100 adults.



Strutting Ground Counts

The status of the sage grouse breeding population for 1987, as indicated by strutting ground counts, is shown in Table 1 of this section. Results of this survey for 1987 compared to 1986 and the 1967-86 average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Number of grounds counted	126	+7	+19
Total male grouse counted	1,818	+6	-11
Average male grouse per ground	14	0	-26
Percent change from previous year (comparable grounds)	+2	—	—

Access for spring 1987 strutting ground counts was generally good in all regions of the state. The numbers of grouse observed increased statewide. Harvest data for 1986 indicated below average populations going into the winter of 1986-87, but the numbers of juvenile birds observed during the summer indicated increased production during 1987. However, the percent of juveniles in the harvest declined in 1987 indicating about average production. Declines in breeding populations and loss of habitat continue to be the trend in most areas of the state.

Brood Counts

Results of the summer inventory survey for 1987 are found in Table 2. Long-term trends of young-adult ratios, mean brood size and sage grouse observed per 100 hours are shown in Tables 3-5. Indices for 1987 are compared to 1986 and the previous 10-year (1977-86) average as follows:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total sage grouse counted	1,803	+60	-22
Young per 100 adults	160	+40	+5
Mean brood size	4.86	+7	-9
Sage grouse observed per 100 hours	415	+43	+12
Total hours effort	434	+12	-27

The effort devoted to sage grouse brood counts was 27 percent below average, and the total number of grouse counted was 22 percent below average.

Sage grouse density increased 43 percent from 1986, production increased 40 percent, and both were slightly above average. An increase in young grouse was observed, but the average brood size was 9 percent below the 10-year average. Since juvenile ratio in fall harvest declined compared with this July brood count information it is possible that the cool wet weather in July and August could have negatively influenced brood survival or caused a greater dispersal of birds or earlier dispersal of broods.

Harvest

Hunter Questionnaire

Results of the 1987 hunter questionnaire are shown in Table 6. Long-term trends of sage grouse bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 7-9 and total statewide harvest statistics in Table 10. The results of the 1987 hunting season compared to 1986 and the 1963-86 average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Sage grouse hunters	7,060	-2	-33
Sage grouse harvested	12,673	+8	-14
Hunter-days afield	14,242	+2	-19
Sage grouse per hunter-day	0.89	+6	+6
Sage grouse per hunter	1.80	+10	+29

Sage grouse hunter success rates were above average in 1987. Total statewide harvest increased 8 percent, while total sage grouse hunters decreased slightly. Hunter success increased 13 percent in the Northern Region where five of the seven counties were closed to sage grouse hunting. Nevertheless, 34 percent of the harvest and 39 percent of the hunting pressure still occurred in the Northern region.

Long-term sage grouse harvest trends are shown in Figure 1.

Field Bag Checks

A summary of field bag check data for 1987 is shown in Table 11. Hunter success trends determined via this method are shown in Table 12. Results of the 1987 survey compared to 1986 and the 1977-86 average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total hunters checked	1,304	+10	-24
Total hours hunted	5,179	-7	-29
Sage grouse per hunter (complete hunts)	1.15	+13	+28
Sage grouse bagged per 100 hours	21	+5	+11
Average hours per hunter-day (complete hunts)	4.0	-23	-17
Hours hunted per grouse bagged	4.9	-4	-11

Southern Utah was dry with birds concentrated around available water. Number of hunters on opening weekend was reported down across the state. Sunday weather was bad in southern Utah with wind, rain and hail.

Sex and Age Composition of the Harvest

A summary of the sex and age composition of harvested sage grouse in 1987 is found in Table 13 and the trend from 1984-87 in Table 14.

Following are data derived from wing surveys in 1987 compared to 1986 and the 1981-86 average:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Sample size	800	+13	-20
Percent males	42	-7	0
Percent females	58	+5	0
Young per 100 adults	181	-26	+11
Young per 100 hens (adult)	256	-36	+2

Analysis of wings collected at checking stations during the 1987 season indicates that statewide production was down compared to 1986, but was slightly above the previous 6-year average.

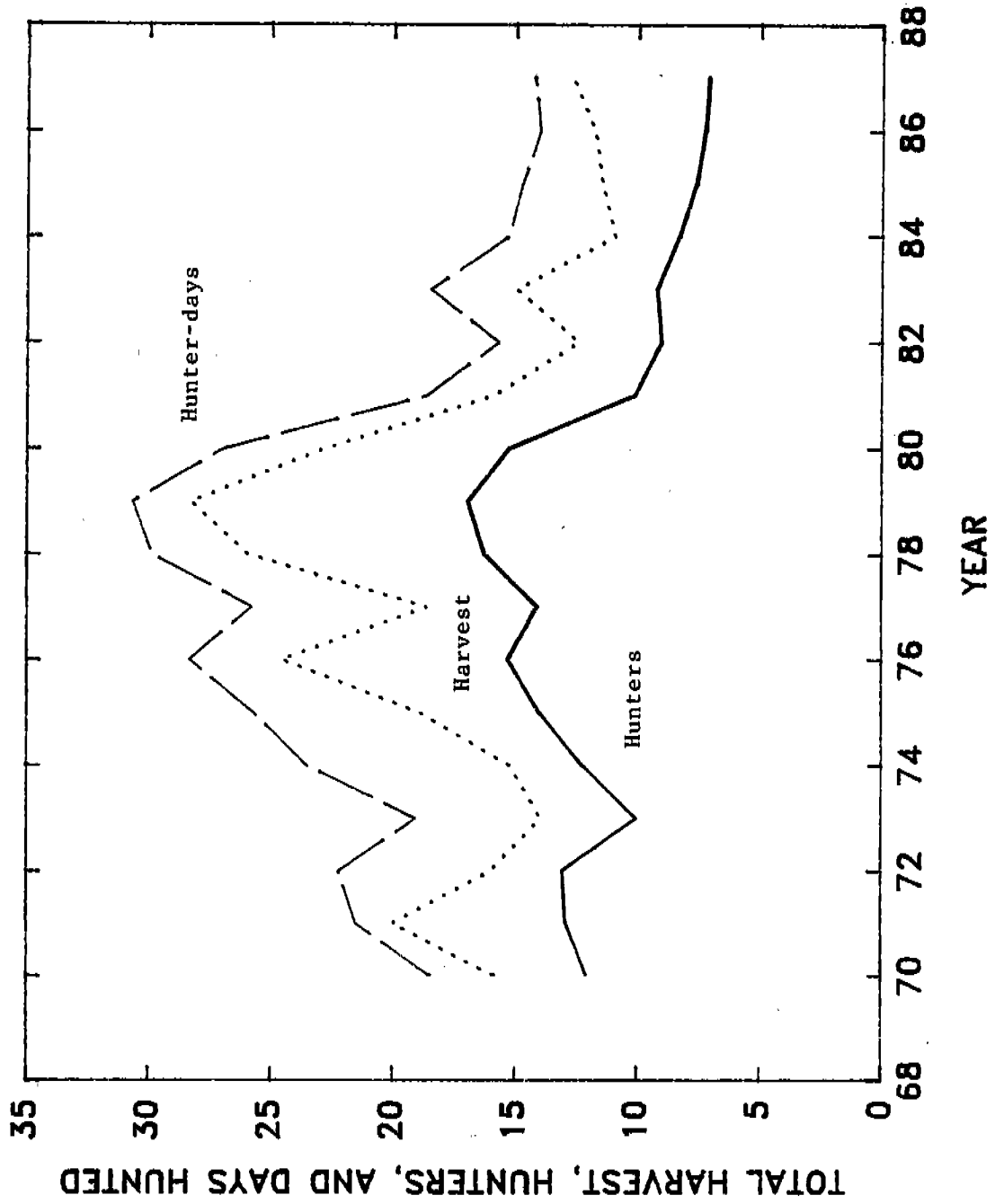


Figure 1. Statewide trend of sage grouse harvest statistics.

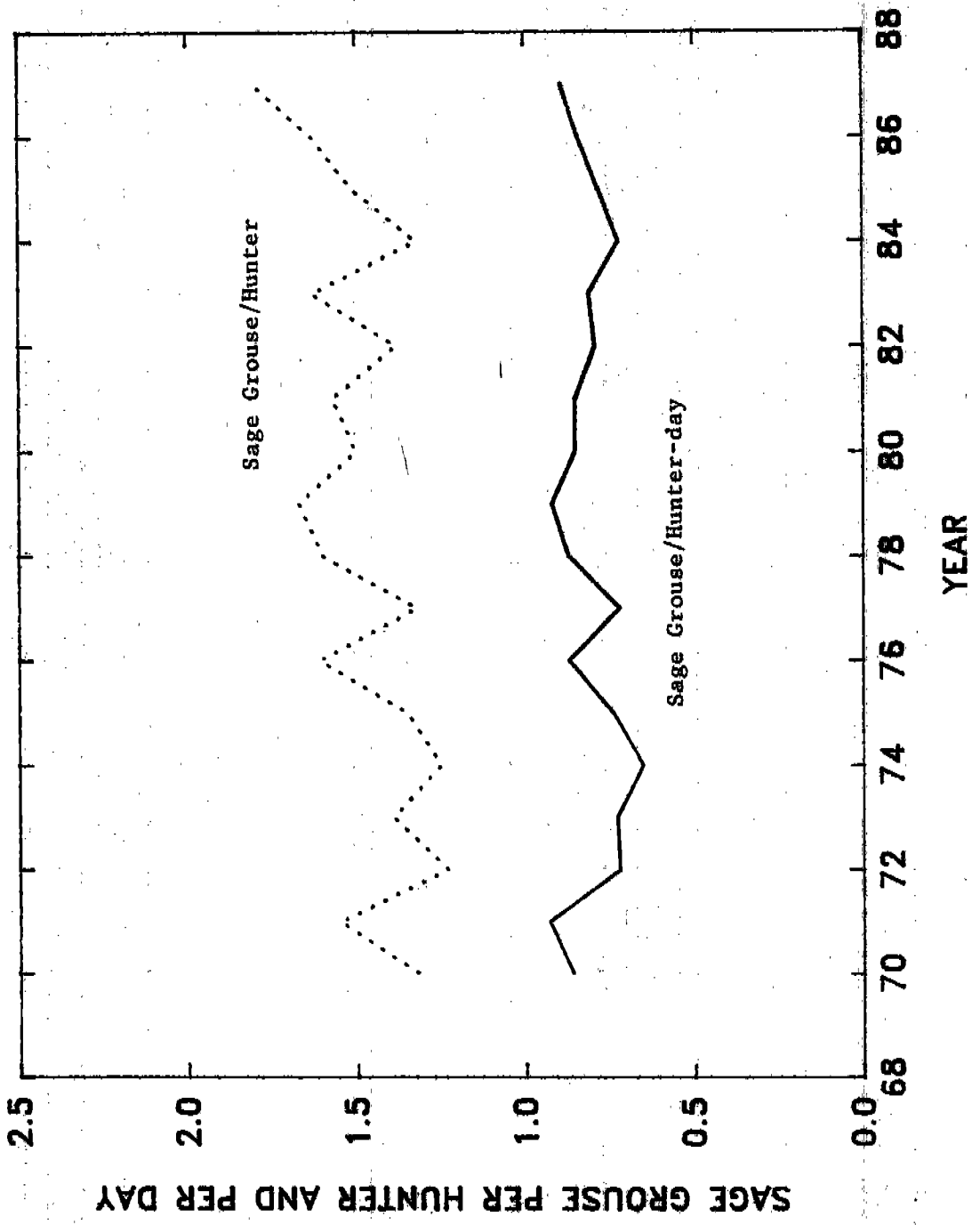


Figure 2. Statewide trend of sage grouse hunter success rates, 1968-88.

Table 1. Summary of sage grouse strutting ground counts by region and county, 1977-87.

Region and County	Year										
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Northern Region											
BOX ELDER											
No. strutting grounds counted	22	18	24	28	35	15	17	8	32	10	18
Total male grouse counted	621	452	763	899	711	384	322	216	309	288	324
County average (all strutting grounds)	28	25	32	32	20	26	19	27	10	29	18
% change from previous year - comparable grounds	+53	+3	+69	+9	-35	-24	-29	-8	+7	+17	-12
CACHE											
No. strutting grounds counted	3	1	3	1	3	1	0	1	0	2	1
Total male grouse counted	45	15	32	18	18	19	0	5	--	8	0
County average (all strutting grounds)	15	15	11	18	6	19	--	5	--	4	0
% change from previous year - comparable grounds	+29	-40	0	+20	-33	+58	--	--	--	--	--
MORGAN											
No. strutting grounds counted	3	3	3	3	3	3	3	1	3	3	2
Total male grouse counted	43	111	75	131	57	65	31	2	33	22	26
County average (all strutting grounds)	14	37	25	44	19	22	10	2	11	7	13
% change from previous year - comparable grounds	-17	+158	-32	+76	-57	+16	-31	-91	+1,000	-33	+18
RICH											
No. strutting grounds counted	13	15	11	11	13	7	9	6	18	11	12
Total male grouse counted	321	417	382	236	259	153	188	103	399	296	431
County average (all strutting grounds)	25	28	35	21	20	22	21	17	22	27	36
% change from previous year - comparable grounds	-13	+17	+11	-40	+5	-21	+2	-2	+49	-28	+53

Table 1 (continued)

Region and County	Year										
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
SUMMIT											
No. strutting grounds counted	6	6	8	1	7	2	7	1	0	7	7
Total male grouse counted	169	91	116	15	60	11	46	16	--	23	25
County average (all strutting grounds)	28	15	15	15	9	6	7	16	--	3	4
% change from previous year - comparable grounds	+52	-29	+5	+15	+13	-50	-9	+78	--	--	-65
REGIONAL TOTALS											
No. strutting grounds counted	47	43	49	44	61	28	36	17	53	33	40
Total male grouse counted	1,199	1,086	1,368	1,299	1,105	632	587	342	741	637	806
Average grouse per ground (all strutting grounds)	26	25	28	30	18	23	16	20	14	19	20
% change from previous year - comparable grounds	+19	+10	+29	-2	-27	-20	-22	-9	+27	-8	+16
Southern Region											
GARFIELD											
No. strutting grounds counted	10	11	9	8	11	9	8	7	--	8	9
Total male grouse counted	192	224	211	97	298	359	197	133	--	152	175
County average (all strutting grounds)	19	20	23	12	27	39	25	19	--	19	19
% change from previous year - comparable grounds	+2	+24	0	-48	+114	+78	-12	-46	--	+13	0
WAYNE											
No. strutting grounds counted	12	12	9	8	14	14	1*	(12)*	--	13	13
Total male grouse counted	256	166	221	32	284	300	123	(89)	--	120	182
County average (all strutting grounds)	21	14	25	4	20	21	123	(7)	--	9	14
% change from previous year - comparable grounds	+19	-31	-59	--	--	--	--	--	--	-15	+52

*No counts because of snow. Aerial count made in Wayne County only (not added to regional total).

Region and County	Year										
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
BEAVER											
No. strutting grounds counted	7	7	6	5	7	7	7	4	3	4	4
Total male grouse counted	90	66	134	113	140	131	117	48	45	55	52
County average (all strutting grounds)	13	9	22	23	20	19	17	12	15	14	13
% change from previous year - comparable grounds	+8	-27	+137	+1	+6	-6	-11	+78	--	+22	-5
IRON											
No. strutting grounds counted	5	10	5	6	7	9	4	--	5	6	4
Total male grouse counted	54	87	83	84	101	111	105	--	81	131	64
County average (all strutting grounds)	11	9	17	14	14	12	26	--	16	22	16
% change from previous year - comparable grounds	+108	+11	+48	+1	+20	-3	+27	--	--	+49	-11
SEVIER											
No. strutting grounds counted	3	4	4	--*	2	4	--	--	--	2	--
Total male grouse counted	26	23	9	--	0	5	--	--	--	0	--
County average (all strutting grounds)	9	6	2	--	0	1	--	--	--	--	--
% change from previous year - comparable grounds	+200	-11	60	--	--	--	--	--	--	--	--
MILLARD											
No. strutting grounds counted	1	1	--	--*	1	1	--	1	1	1	--
Total male grouse counted	3	14	--	--	22	22	--	4	2	3	--
County average (all strutting grounds)	3	14	--	--	22	22	--	4	2	3	--
% change from previous year - comparable grounds	-73	+367	--	--	--	0	--	--	--	+33	--

Table 1 (continued)

Region and County	Year										
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
REGIONAL TOTALS											
No. strutting grounds counted	37	45	33	27	42	44	23	12	21	34	30
Total male grouse counted	618	580	691	326	845	928	563	185	391	461	473
Average grouse per ground (all strutting grounds)	17	13	21	12	20	21	24	15	19	14	16
% change from previous year - comparable grounds	+14	-13	-22	-32	+46	+33	-9	-33	--	+12	+13
Central Region											
SANPETE											
No. strutting grounds counted	2	2	2	2	2	2	2	2	2	2	2
Total male grouse counted	4	7	6	9	9	11	8	0	0	0	0
County average (all strutting grounds)	2	4	3	5	5	6	4	--	--	--	--
% change from previous year - comparable grounds	-60	+75	-14	+17	0	+22	-27	-100	0	--	--
TOOELE											
No. strutting grounds counted	5	5	5	5	5	5	6	6	6	6	5
Total male grouse counted	77	37	116	131	46	28	28	23	55	82	96
County average (all strutting grounds)	15	7	23	26	9	6	5	4	9	16	19
% change from previous year - comparable grounds	-4	-52	-38	+13	-64	-64	0	-18	+139	+149	+17
WASATCH											
No. strutting grounds counted	2	2	2	2	2	2	2	2	2	2	2
Total male grouse counted	206	184	119	45	45	18	54	57	63	117	54
County average (all strutting grounds)	103	92	60	23	23	9	27	29	32	59	27
% change from previous year - comparable grounds	-5	-11	-35	-62	0	-60	+200	+6	+11	+205	-54

Region and County	Year										
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
REGIONAL TOTALS (N.E.)											
No. strutting grounds counted	28	30	24	33	32	33	37	--	30	34	34
Total male grouse counted	461	759	478	297	354	416	396	--	336	339	289
Average grouse per ground (all strutting grounds)	17	25	20	9	11	13	13	--	11	10	9
% change from previous year - comparable grounds	-13	+51	-25	-48	+27	+17	-3	--	-26	--	-18
Southeastern Region											
CARBON											
No. strutting grounds counted	9	5	--	--	6	1	1	--	--	2	7
Total male grouse counted	140	41	--	--	2	0	16	--	--	32	55
County average (all strutting grounds)	16	8	--	--	3	--	16	--	--	16	8
% change from previous year - comparable grounds	-10	-64	--	--	--	--	+100	--	--	--	-27
EMERY											
No. strutting grounds counted	2	1	--	--	--	2	--	--	1	1	2
Total male grouse counted	33	12	--	--	--	9	--	--	12	11	10
County average (all strutting grounds)	17	12	--	--	--	5	--	--	12	11	5
% change from previous year - comparable grounds	+23	-25	--	--	--	--	--	--	--	-8	-18
SAN JUAN											
No. strutting grounds counted	4	5	4	5	4	4	6	4	4	4	4
Total male grouse counted	117	96	67	41	63	47	59	57	39	29	35
County average (all strutting grounds)	29	18	17	8	16	12	10	14	10	7	9
% change from previous year - comparable grounds	+22	-17	+1	-33	+65	-25	+52	-14	-29	-26	+28

Table 1 (continued)

Region and County	Year											
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
REGIONAL TOTALS												
No. strutting grounds counted	9	9	9	9	9	9	10	10	10	10	10	9
Total male grouse counted	287	228	197	185	100	57	90	80	118	199	150	
Average grouse per ground (all strutting grounds)	32	25	22	21	11	6	9	8	12	18	17	
% change from previous year - comparable grounds	-6	-21	-35	-24	-51	-43	+58	-11	+48	+170	-25	
Northeastern Region												
DAGGETT												
No. strutting grounds counted	3	3	3	5	6	6	6	--	5	6	6	6
Total male grouse counted	55	78	47	51	68	18	45	--	25	22	26	26
County average (all strutting grounds)	18	26	16	10	11	3	7	--	5	3	4	4
% change from previous year - comparable grounds	+38	+42	-40	-19	+20	-57	+56	--	-43	--	+16	
DUCHESNE												
No. strutting grounds counted	14	14	10	16	16	15	15	--	13	14	14	14
Total male grouse counted	161	227	93	120	112	156	178	--	121	117	104	104
County average (all strutting grounds)	12	16	9	8	7	10	12	--	9	8	7	7
% change from previous year - comparable grounds	-20	+37	-35	+5	0	+15	+17	--	-29	--	-12	
UINTAH												
No. strutting grounds counted	11	13	11	12	10	12	16	--	12	14	14	14
Total male grouse counted	245	454	338	126	174	242	273	--	190	216	159	159
County average (all strutting grounds)	22	35	31	11	17	20	17	--	16	15	11	11
% change from previous year - comparable grounds	-16	+63	-18	-67	+56	+40	-21	--	-21	--	-26	

Table 1 (continued)

Region and County	Year										
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
REGIONAL TOTALS											
No. strutting grounds counted	15	11	4	5	10	7	7	4	4	7	13
Total male grouse counted	290	149	67	41	65	56	75	57	39	72	100
Average grouse per ground (all strutting grounds)	19	14	17	8	7	8	11	14	10	10	8
%change from previous year - comparable grounds	+4	-37	+1	-33	+58	-28	+34	-14	-29	-26	0
STATE TOTALS											
No. strutting grounds counted	136	138	120	116	154	121	113	43	97	118	126
Total male grouse counted	2,855	2,802	2,808	2,148	2,469	2,089	1,711	664	1,234	1,708	1,818
Average grouse per ground (all strutting grounds)	21	20	23	19	16	17	15	15	13	14	14
%change from previous year - comparable grounds	+6	-15	-13	-20	-9	-1	-8	-18	-1	+5	+2

*No counts because of snow conditions.

Table 2. Sage grouse summer inventory summary, 1987.

Region and County	Distinct Broods		Mean Brood	Mixed Yng & Adults		Total Adults w/o Yng	Total Adults	Total Yng	Young/100 Ad	Veh. Miles	Hours of Effort			Birds/100 Hr	
	# Ad	Yng		Ad	Yng						Veh.	Horse	Walk		Total
Northern Region															
Box Elder	8	8	31	7	15	34	49	46	94	45	5	14	1	20	475
Cache	0	0	0	0	0	0	0	0	--	624	41	0	0	41	0
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	1	1	5	0	0	0	1	5	500	75	8	18	6	32	19
Rich	37	37	185	8	24	135	180	209	116	1,090	50	4	53	107	364
Summit	3	3	15	0	0	6	9	15	167	105	2	0	3	5	480
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	49	49	236	4.82	15	39	175	275	115	1,939	106	36	63	205	251
Central Region															
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	15	15	54	2	6	12	29	60	207	94	12	0	0	12	742
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	18	18	125	4	9	42	64	134	209	78	10	6	9	25	792
REGIONAL TOTALS	33	33	179	5.42	6	15	93	194	209	172	22	6	9	37	778
Southern Region															
Beaver	1	1	5	13	1	3	17	6	35	65	4	0	0	4	575
Garfield	3	3	12	4	14	11	18	26	144	72	10	6	0	16	275
Iron	14	14	65	26	50	18	58	115	198	20	3	10	0	13	1,331
Kane	3	3	12	4.00	0	0	3	12	400	34	3	0	0	3	500
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	7	7	43	6.14	8	48	5	20	455	95	11	0	3	14	793
REGIONAL TOTALS	28	28	137	4.89	51	113	37	250	216	286	31	16	3	50	732
Northeastern Region															
Daggett	6	6	24	4.00	14	44	35	68	124	112	15	5	5	25	492
Duchesne	15	15	53	3.53	44	55	20	79	137	539	40	2	7	49	382
Uintah	20	20	111	5.55	57	100	33	110	192	463	45	0	5	50	642
REGIONAL TOTALS	41	41	188	4.59	115	199	88	387	159	1,114	100	7	17	124	509
Southeastern Region															
Carbon	2	2	3	1.50	0	0	2	3	150	195	18	0	0	18	28
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	2	2	3	1.50	0	0	2	3	150	195	18	0	0	18	28
STATE TOTALS	153	153	743	4.86	187	366	354	1,109	160	3,706	277	65	92	434	415

[] Estimate

Table 3. Trend of sage grouse young per 100 adults, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	75	125	81	84	68	127	135	75	265	178	94	
Cache	450	--	0	300	122	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	35	414	66	89	120	--	240	--	300	--	500	
Rich	81	273	101	33	85	85	--	164	96	91	116	
Summit	106	316	221	74	114	80	67	--	--	400	167	
Weber	0	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	77	194	99	67	82	91	145	126	130	103	115	111
Central Region												
Juab	76	46	262	204	245	--	--	--	--	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	257	224	154	267	348	314	305	--	--	--	--	
Tooele	123	283	449	143	101	107	176	100	125	106	207	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	54	93	163	170	236	166	157	175	43	200	209	
REGIONAL TOTALS	77	112	204	171	171	209	214	155	64	120	209	150
Southern Region												
Beaver	69	156	100	142	104	32	--	400	43	--	35	
Garfield	174	176	272	383	84	128	133	140	229	125	144	
Iron	80	313	229	269	113	148	150	63	--	250	198	
Kane	--	--	57	--	--	--	1,000	--	--	--	400	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	--	--	--	--	--	--	38	--	
Sevier	0	625	--	--	--	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	115	308	288	291	263	193	104	411	152	44	455	
REGIONAL TOTALS	103	224	230	235	154	130	98	92	137	105	216	151
Northeastern Region												
Daggett	169	198	169	200	230	369	88	250	170	100	124	
Duchesne	53	199	127	248	235	305	240	145	297	180	137	
Uintah	235	269	279	401	253	183	375	67	261	127	192	
REGIONAL TOTALS	154	226	191	297	242	237	265	126	255	131	159	212
Southeastern Region												
Carbon	46	164	400	--	64	--	--	238	400	133	150	
Emery	--	--	--	--	--	--	--	--	--	--	--	
Grand	3	--	71	--	--	--	--	--	--	--	--	
San Juan	24	94	--	400	350	--	57	500	88	60	--	
REGIONAL TOTALS	25	142	223	450	83	--	57	267	122	81	150	161
STATE TOTALS	87	181	175	163	142	179	202	125	147	114	160	152

Table 4. Trend of sage grouse mean brood size, 1977-87.

Region and County	Year											Average	
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1977-86	1977-86
Northern Region													
Box Elder	4.36	4.76	4.32	3.36	3.97	3.92	5.00	5.75	5.31	3.57	3.88		
Cache	4.50	--	--	1.00	3.50	--	--	--	--	--	--		
Davis	--	--	--	--	--	--	--	--	--	--	--		
Morgan	3.50	6.44	4.00	5.60	5.14	--	4.20	--	3.00	--	5.00		
Rich	3.83	5.24	4.58	3.36	3.67	4.45	--	3.92	3.96	5.08	5.00		
Summit	4.50	5.77	5.00	3.78	3.67	2.67	3.33	--	--	4.00	5.00		
Weber	--	--	--	--	--	--	--	--	--	--	--		
REGIONAL TOTALS	4.17	5.20	4.52	3.61	3.94	4.00	4.25	4.36	4.39	4.74	4.82	4.32	4.32
Central Region													
Juab	4.50	3.33	4.25	5.00	2.00	--	--	--	--	--	--		
Salt Lake	--	--	--	--	--	--	--	--	--	--	--		
Sanpete	3.20	4.57	6.44	5.58	4.80	6.36	5.83	--	--	--	--		
Tooele	4.17	5.13	5.64	4.09	3.00	3.33	4.33	3.33	3.29	3.25	3.60		
Utah	--	--	--	--	--	--	--	--	--	--	--		
Wasatch	3.27	4.90	4.90	4.09	3.83	4.81	3.14	4.90	2.00	5.00	6.94		
REGIONAL TOTALS	3.44	4.82	5.18	4.41	3.44	5.32	4.37	4.54	2.56	3.60	5.42	4.17	4.17
Southern Region													
Beaver	3.57	4.29	4.00	4.14	5.50	4.00	--	4.00	5.00	--	5.00		
Garfield	4.00	4.00	4.39	5.00	4.50	3.43	3.43	4.00	4.50	2.00	4.00		
Iron	3.00	5.50	4.68	4.12	3.57	6.40	3.00	3.50	--	4.00	4.64		
Kane	--	--	--	--	--	--	5.00	--	--	--	4.00		
Millard	--	--	--	--	--	--	--	--	--	--	--		
Piute	--	--	--	--	--	--	--	--	--	--	--		
Sevier	--	6.25	--	--	--	--	--	--	--	--	--		
Washington	--	--	--	--	--	--	--	--	--	--	--		
Wayne	4.40	4.56	4.74	4.60	3.96	4.43	3.67	5.00	3.57	6.00	6.14		
REGIONAL TOTALS	4.00	4.55	4.61	4.48	3.93	4.52	3.62	4.27	4.00	4.29	4.89	4.23	4.23
Northeastern Region													
Daggett	4.80	5.05	5.10	4.75	4.11	5.13	5.80	4.63	3.00	1.00	4.00		
Duchesne	3.56	4.00	4.73	4.42	3.91	5.32	4.59	3.77	4.73	4.29	3.54		
Uintah	4.48	4.87	4.67	5.55	5.27	4.95	5.13	3.00	5.00	5.44	5.55		
REGIONAL TOTALS	4.30	4.94	4.79	5.05	4.50	5.10	5.00	3.96	4.43	4.94	4.59	4.70	4.70
Southeastern Region													
Carbon	4.14	5.17	4.67	--	--	--	--	4.33	4.00	4.00	1.50		
Emery	--	--	--	--	--	--	--	--	--	--	--		
Grand	--	--	5.00	--	--	--	--	--	--	--	--		
San Juan	3.29	--	--	--	3.50	--	4.00	5.00	3.50	3.00	--		
REGIONAL TOTALS	3.71	5.17	3.25	--	3.50	--	4.00	4.50	3.67	3.40	1.50	3.90	3.90
STATE TOTALS	3.99	4.97	4.77	4.51	4.05	4.85	4.58	4.27	4.04	4.53	4.86	4.46	4.46

Table 5. Trend of sage grouse observed per 100 hours, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	670	452	1,835	575	571	238	90	195	380	304	475	
Cache	29	--	0	154	232	--	--	11	--	--	0	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	218	160	412	427	471	77	93	--	19	--	19	
Rich	580	838	952	393	648	188	--	198	288	282	364	
Summit	361	369	226	111	135	100	81	--	--	21	480	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	461	400	545	315	440	144	82	110	186	198	251	288
Central Region												
Juab	580	255	588	206	380	--	--	--	0.00	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	255	594	743	319	303	426	214	--	--	--	--	
Tooele	311	265	776	710	627	207	203	105	242	746	742	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	1,253	767	652	360	147	362	41	122	267	92	792	
REGIONAL TOTALS	618	556	695	410	347	342	111	118	244	310	776	375
Southern Region												
Beaver	428	242	89	920	613	62	767	167	429	--	575	
Garfield	211	545	468	229	480	291	300	257	295	225	275	
Iron	771	220	1,315	342	1,085	315	71	260	--	466	1,331	
Kane	0	--	588	--	--	--	275	--	--	--	500	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	--	--	--	--	--	--	316	--	
Sevier	83	207	--	--	--	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	240	444	494	338	538	783	612	381	358	344	793	
REGIONAL TOTALS	265	380	617	346	653	429	392	304	342	300	732	403
Northeastern Region												
Daggett	575	637	1,274	489	800	300	467	308	284	114	492	
Duchesne	446	392	258	446	574	845	433	454	325	165	382	
Uintah	513	397	705	474	398	1,036	866	314	888	813	642	
REGIONAL TOTALS	509	427	673	483	507	800	631	364	490	474	509	536
Southeastern Region												
Carbon	283	295	200	5	219	--	--	415	--	200	28	
Emery	0	0	--	--	--	--	--	--	--	--	--	
Grand	550	71	240	--	--	--	--	--	--	--	--	
San Juan	341	194	--	100	50	--	50	57	231	400	--	
REGIONAL TOTALS	332	237	210	36	141	--	50	194	235	271	28	190
STATE TOTALS	445	407	621	374	444	401	258	180	284	291	415	371

Table 6. Summary of sage grouse hunter success and distribution of harvest and hunter pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
Northern Region						
Box Elder	42	2,010	2,108	1.05	14.11	16.63
Cache	20	1,691	637	0.38	11.87	5.02
Davis	2	49	0	0.00	0.34	0.00
Morgan	4	98	122	1.25	0.68	0.96
Rich	24	1,176	1,029	0.88	8.26	8.12
Summit	6	269	147	0.55	1.89	1.16
Weber	4	220	122	0.56	1.54	0.96
REGIONAL TOTALS	102	5,515	4,167	0.76	38.72	32.88
Central Region						
Juab	3	122	73	0.60	0.86	0.58
Salt Lake	1	24	0	0.00	0.17	0.00
Sanpete	9	710	441	0.62	4.99	3.48
Tooele	9	490	539	1.10	3.44	4.25
Utah	17	956	588	0.62	6.71	4.64
Wasatch	7	294	171	0.58	2.06	1.35
REGIONAL TOTALS	46	2,598	1,814	0.70	18.24	14.31
Southern Region						
Beaver	13	637	686	1.08	4.47	5.41
Garfield	13	392	588	1.50	2.75	4.64
Iron	10	343	441	1.29	2.40	3.48
Kane	0	0	0	0.00	0.00	0.00
Millard	2	49	49	1.00	0.34	0.38
Piute	9	294	171	0.58	2.06	1.35
Sevier	10	294	294	1.00	2.06	2.32
Washington	1	49	0	0.00	0.34	0.00
Wayne	14	490	294	0.60	3.44	2.32
REGIONAL TOTALS	72	2,549	2,524	0.99	17.89	19.92
Northeastern Region						
Daggett	8	294	294	1.00	2.06	2.32
Duchesne	14	563	514	0.91	3.95	4.06
Uintah	53	2,353	2,941	1.25	16.52	23.21
REGIONAL TOTALS	75	3,211	3,750	1.17	22.54	29.49
Southeastern Region						
Carbon	8	269	294	1.09	1.89	2.32
Emery	1	24	24	1.00	.17	.19
Grand	2	49	98	2.00	0.34	0.77
San Juan	1	24	0	0.00	0.17	0.00
REGIONAL TOTALS	12	367	416	1.13	2.57	3.28
Unknown Counties	0	0	0	0.00	0.00	0.00
STATE TOTALS	307	14,242	12,673	0.89	100	100

Table 7. Summary of sage grouse bagged per hunter-day by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>								
Box Elder	1.41	1.26	0.78	0.88	0.80	0.73	0.94	1.05
Cache	0.61	0.40	0.50	0.47	0.54	0.21*	0.18*	0.38
Davis	0.27	0.22*	0.36*	0.45*	0.18*	0.25*	0.25*	0.00
Morgan	0.57	0.74	0.30	0.15	0.32	0.25*	0.47*	1.25
Rich	0.53	0.53	0.51	0.44	0.50	0.30	0.58	0.88
Summit	0.48	0.38	0.32	0.50	0.23	0.20*	0.50*	0.55
Weber	0.85	0.16	0.39	0.47	0.67	0.43*	0.57*	0.56
REGIONAL TOTALS	0.94	0.76	0.56	0.58	0.55	0.49	0.67	0.76
<u>Central Region</u>								
Juab	0.94	1.14*	0.17	0.36*	0.33*	4.00*	3.00*	0.60
Salt Lake	0.64*	0.75*	2.08*	0.50*	0.25*	0.08*	2.54*	0.00
Sanpete	0.56	1.40*	0.31*	0.33*	0.64*	0.44*	0.38*	0.62
Tooele	0.86	0.54	0.86*	0.30*	0.53*	0.23*	1.54*	1.10
Utah	0.57	0.64	0.50*	1.08*	0.77*	0.45*	0.42	0.62
Wasatch	0.58	0.50	0.54	0.65	0.28	0.19	0.65*	0.58
REGIONAL TOTALS	0.64	0.68	0.62	0.63	0.51	0.46	0.85	0.70
<u>Southern Region</u>								
Beaver	0.86	1.06	1.24	0.95	1.29	0.33	0.90	1.08
Garfield	1.20	1.34	1.12	1.33	1.33	0.78	0.68	1.50
Iron	0.82	0.92	0.92	1.35	1.00	1.85	0.82	1.29
Kane	0.00	0.71	0.00	—	0.00	0.50	0.13	0.00
Millard	0.70	0.00	1.00*	1.88*	0.67*	2.00*	0.50*	1.00
Piute	0.79	2.00	0.93	1.30	1.44	0.95	0.50	0.58
Sevier	0.58	0.45	0.85	0.67	0.67	0.40	0.43	1.00
Washington	1.75	0.00	5.50*	—	0.00*	0.50*	0.00	0.00
Wayne	1.19	1.42	1.22	1.26	1.25	1.19	1.19	0.60
REGIONAL TOTALS	0.96	1.17	1.21	0.16	1.19	0.92	0.75	0.99
<u>Northeastern Region</u>								
Daggett	0.77	0.84	1.00	1.04	0.16	0.92	0.45	1.00
Duchesne	0.70	1.00	0.85	1.31	0.50	0.67	1.00	0.91
Uintah	0.94	1.01	1.16	1.15	0.98	1.08	1.30	1.25
REGIONAL TOTALS	0.82	0.97	1.04	1.17	0.76	0.95	1.16	1.17
<u>Southeastern Region</u>								
Carbon	0.53	0.19*	0.44*	0.27*	0.33*	0.60	1.24	1.09
Emery	1.26	1.00*	0.00*	0.08*	1.50*	0.63	2.71	1.00
Grand	1.50	0.38	0.25	—	0.00	1.00	0.40	2.00
San Juan	0.17	0.00	1.50*	1.00*	0.00*	0.00	1.33	0.00
REGIONAL TOTALS	0.69	0.28	0.47	0.26	0.90	0.60	1.44	1.13
Unknown counties	1.25	0.22	2.00	—	7.50	5.67	2.00	0.00
Illegal areas (Total)	0.00	0.00	(0.62)*	(0.60)*	(0.60)*	(0.46)*	(0.72)	0.00
STATE TOTALS	0.85	0.85	0.79	0.81	0.72	0.78	0.84	0.89

*Closed season.

Table 8. Percentage distribution of sage grouse harvest by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
Northern Region								
Box Elder	31.07	23.29	18.19	15.56	18.95	14.20	19.61	16.63
Cache	3.06	1.87	3.84	4.56	4.83	1.31*	0.88*	5.02
Davis	0.60	0.27*	0.50*	2.86*	0.92*	0.18*	0.35*	0.00
Morgan	1.19	2.68	1.36	0.44	2.60	0.37*	2.45*	0.96
Rich	5.74	4.95	4.33	3.48	3.90	2.80	4.90	8.12
Summit	3.50	2.95	2.35	3.13	1.86	0.37*	0.88*	1.16
Weber	1.64	0.40	1.86	1.52	3.34	1.12*	2.80*	0.96
REGIONAL TOTALS	46.80	36.41	32.43	31.55	36.43	20.37	31.87	32.88
Central Region								
Juab	1.12*	2.14*	0.12*	0.35*	0.37*	2.98*	2.10*	0.58
Salt Lake	0.67*	1.61*	3.09*	0.71*	0.18*	0.18*	5.78*	0.00
Sanpete	1.34	0.94*	1.11*	1.42*	1.30*	1.49*	1.58*	3.48
Tooele	3.28	2.54	1.49*	0.62*	1.48*	0.56*	3.50*	4.25
Utah	3.80	4.55*	2.85*	5.72*	5.02*	4.67*	3.85	4.64
Wasatch	5.96	1.74	3.22	1.34	1.86	0.75	2.63*	1.35
REGIONAL TOTALS	16.17	13.52	11.88	10.17	10.22	10.65	19.44	14.31
Southern Region								
Beaver	2.38	4.55	2.60	1.87	1.67	1.12	1.58	5.41
Garfield	5.29	14.86	9.28	10.46	9.66	6.54	4.38	4.64
Iron	1.04	1.61	2.85	3.13	1.30	4.48	2.45	3.48
Kane	0.00	0.67	0.00	0.00	0.00	0.18	0.18	0.00
Millard	0.52	0.00	0.62*	2.68*	0.74*	1.87*	0.18*	0.38
Piute	1.64	0.80	1.73	2.32	4.27	3.36	0.35	1.35
Sevier	2.09	1.34	2.72	2.86	1.48	1.12	1.75	2.32
Washington	0.52*	0.00	4.08*	0.00*	0.00*	0.37*	0.00	0.00
Wayne	5.07	6.29	9.43	9.21	7.44	8.03	6.65	2.32
REGIONAL TOTALS	18.55	30.12	33.42	32.54	26.58	27.10	17.50	19.92
Northeastern Region								
Daggett	1.27	4.28	1.36	2.14	0.55	2.24	0.88	2.32
Duchesne	4.92	4.15	5.69	5.72	2.60	5.23	3.68	4.06
Uintah	7.60	10.31	13.49	16.99	15.98	19.43	18.21	23.21
REGIONAL TOTALS	13.79	18.74	20.55	24.85	19.15	26.91	22.78	29.59
Southeastern Region								
Carbon	2.24	0.40*	0.50*	0.53*	0.92*	1.12	3.68	2.32
Emery	1.79	0.13*	0.00*	0.09*	3.90*	0.93	3.33	0.19
Grand	0.22	0.40	0.12	—	0.00	0.18	0.35	0.77
San Juan	0.07	0.00	0.37*	0.27*	0.00*	0.00	0.70	0.00
REGIONAL TOTALS	4.32	0.94	0.99	0.89	4.83	2.24	8.06	3.28
Unknown counties	0.37	0.27	0.74	0.00	2.78	12.71	0.35	0.00
Closed areas	(2.31)	(10.04)	(17.95)	(15.25)	(14.83)	(11.47)	(23.09)	(0.00)
STATE TOTALS	100	100	100	100	100	100	100	100

*Closed season; ()Percent of total harvest in closed areas.

Table 9. Percentage distribution of sage grouse hunting pressure by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>								
Box Elder	17.48	15.74	18.40	14.33	16.89	15.15	17.53	14.11
Cache	4.23	3.99	6.07	7.89	6.38	4.71*	4.12*	11.87
Davis	1.89	1.03*	1.08*	5.14*	3.72*	0.58*	1.18*	0.34
Morgan	1.77	3.08	3.62	2.39	5.85	1.16*	4.42*	0.68
Rich	9.15	7.98	6.75	6.44	5.58	7.28	7.07	8.26
Summit	6.18	6.61	5.77	5.07	5.71	1.46*	1.47*	1.89
Weber	1.64	2.17	3.72	2.60	3.59	2.04*	4.12*	1.54
<u>REGIONAL TOTALS</u>	<u>42.33</u>	<u>40.59</u>	<u>45.40</u>	<u>43.87</u>	<u>47.74</u>	<u>32.51</u>	<u>39.91</u>	<u>38.72</u>
<u>Central Region</u>								
Juab	1.01*	1.60*	0.59*	0.79*	0.79*	0.58*	0.59*	0.86
Salt Lake	0.88*	1.82*	1.17*	1.15*	0.53*	1.75*	1.91*	0.17
Sanpete	2.02	0.57*	2.84*	3.55*	1.46*	2.62*	3.53*	4.99
Tooele	3.22	3.99	1.37*	1.66*	1.99*	1.89*	1.91*	3.44
Utah	5.62	6.04*	4.50*	4.27*	4.65*	8.01*	7.81	6.71
Wasatch	8.77	2.96	4.70	1.66	4.78	3.06	3.39*	2.06
<u>REGIONAL TOTALS</u>	<u>21.51</u>	<u>16.99</u>	<u>15.17</u>	<u>13.09</u>	<u>14.23</u>	<u>17.93</u>	<u>19.15</u>	<u>18.24</u>
<u>Southern Region</u>								
Beaver	2.33	3.65	1.66	1.59	0.93	2.62	1.47	4.47
Garfield	3.72	9.46	6.56	6.37	5.18	6.56	5.45	2.75
Iron	1.07	1.48	2.45	1.88	0.93	1.89	2.50	2.40
Kane	0.00	0.80	0.00	0.65	0.00	0.29	1.18	0.00
Millard	0.63	0.00	0.49*	1.15*	0.79*	0.73*	0.29*	0.34
Piute	1.77	0.34	1.47	1.45	2.12	2.77	0.59	2.06
Sevier	3.03	2.51	2.54	3.47	1.59	2.18	3.39	2.06
Washington	0.25*	0.00	0.59*	0.14*	0.13*	0.58*	0.00	0.34
Wayne	3.75	3.76	6.16	5.93	4.25	5.24	4.71	3.44
<u>REGIONAL TOTALS</u>	<u>16.40</u>	<u>22.01</u>	<u>21.92</u>	<u>22.64</u>	<u>15.96</u>	<u>22.88</u>	<u>19.59</u>	<u>17.89</u>
<u>Northeastern Region</u>								
Daggett	1.39	4.33	1.08	1.66	2.25	1.89	1.62	2.06
Duchesne	5.93	3.53	5.28	3.54	3.84	6.12	3.09	3.95
Uintah	6.88	3.67	9.20	11.95	11.70	13.99	11.78	16.52
<u>REGIONAL TOTALS</u>	<u>14.20</u>	<u>16.53</u>	<u>15.56</u>	<u>17.15</u>	<u>17.95</u>	<u>22.01</u>	<u>16.59</u>	<u>22.54</u>
<u>Southeastern Region</u>								
Carbon	3.60	1.82*	0.88*	1.59*	1.99*	1.46	2.50	1.89
Emery	1.20	0.11*	0.20*	0.94*	1.86*	1.16	1.03	0.17
Grand	0.12	0.91	0.39	0.00	0.00	0.14	0.74	0.34
San Juan	0.38	0.00	0.20*	0.22*	0.00*	0.14	0.44	0.17
<u>REGIONAL TOTALS</u>	<u>5.30</u>	<u>2.85</u>	<u>1.66</u>	<u>2.75</u>	<u>3.85</u>	<u>2.91</u>	<u>4.71</u>	<u>2.57</u>
Unknown counties	0.25	1.03	0.29	0.50	0.26	1.75	0.15	0.00
Closed areas	0.00	(12.99)	(13.91)	(20.60)	(17.91)	(26.21)	(26.90)	(0.00)
<u>STATE TOTALS</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>

*Closed season; ()Percent of total pressure in closed areas.

Table 10. Statewide summary of sage grouse harvest statistics, 1951-87.

Year	Total* Hunters	Total* Harvest	Hunter-days Afield	Sage Grouse Per Hunter-day	Sage Grouse Per Hunter
1951	840	2,458	--	--	2.93
1952	678	2,230	--	--	3.29
1953	895	2,581	--	--	2.88
1954	802	2,510	--	--	3.13
1955	579	1,742	--	--	3.01
1956	495	1,375	--	--	2.97
1957	470	1,303	--	--	2.77
1958	567	1,797	--	--	3.17
1959	699	1,875	--	--	2.68
1960	861	2,246	--	--	2.61
1961	1,078**	1,918**	--	--	1.78**
1962***	2,382	5,352	5,097	1.05	1.89
1963	12,366	3,793	15,564	0.89	1.12
1964	4,362	6,827	5,807	1.18	1.56
1965	3,243	3,881	4,673	0.83	1.20
1966	2,612	3,962	4,006	0.99	1.52
1967	5,336	5,089	7,860	0.65	0.95
1968	9,115	11,109	13,601	0.82	1.22
1969	12,894	22,282	20,466	1.09	1.73
1970	12,036	15,877	18,506	0.86	1.32
1971	12,893	20,013	1,509	0.93	1.55
1972	13,040	15,983	22,232	0.72	1.23
1973	10,017	13,926	19,049	0.73	1.39
1974	12,214	15,215	23,516	0.65	1.25
1975	13,996	18,916	25,720	0.74	1.35
1976	15,283	24,541	28,342	0.87	1.61
1977	14,078	18,615	25,759	0.72	1.32
1978	16,231	25,938	29,861	0.87	1.60
1979	16,927	28,280	30,682	0.92	1.67
1980	15,219	22,770	26,893	0.85	1.50
1981	10,083	15,857	18,617	0.85	1.57
1982	8,997	12,383	15,663	0.79	1.38
1983	9,201	14,949	18,467	0.81	1.63
1984	8,283	10,921	15,266	0.72	1.32
1985	7,586	11,466	14,702	0.78	1.51
1986	7,233	11,766	13,992	0.84	1.63
1987	7,060	12,673	14,242	0.89	1.80
<hr/>					
TOTALS (1963-1987)	260,305	367,032	434,995	(20.99)	(35.93)
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AVERAGES (1963-1986)	10,552	14,765	17,531	0.84	1.40
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*The number of sage grouse hunters and consequently harvest was limited by permits available from 1951 through 1962.

**Estimated.

***Totals and indices based on indiscrete data.

Table 11. Sage grouse field bag check summary, 1987.

Region and County	ALL HUNTS					COMPLETE HUNTS				
	Total Parties	Total Hunters	Total Hours	Total Birds	Birds/100 Hr	Total Hunters	Total Hours	Total Birds	Birds/100 Hr	Birds/Hunter
Northern Region										
Box Elder	158	391	2,868	540	19	157	2,844	538	19	1.39
Cache	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--
Rich	71	167	656	106	16	64	616	104	17	0.70
Summit	--	--	--	--	--	--	--	--	--	--
Weber	1	1	2	0	--	1	2	0	--	--
REGIONAL TOTALS	230	559	3,526	646	18	222	3,462	642	19	1.20
Central Region										
Juab	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--
Southern Region										
Beaver	--	--	--	--	--	--	--	--	--	--
Garfield	6	12	38	13	34	3	24	12	50	1.71
Iron	2	6	18	1	6	1	6	0	0	0.00
Kane	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--
Wayne	50	170	810	164	20	45	746	157	21	0.95
REGIONAL TOTALS	58	188	866	178	21	49	776	169	22	0.97
Northeastern Region										
Daggett	11	33	78	36	46	5	25	20	80	1.67
Duchesne	7	24	29	13	45	1	8	6	75	1.50
Uintah	71	215	634	166	26	41	332	120	36	1.05
REGIONAL TOTALS	89	272	741	215	29	47	365	146	40	1.12
Southeastern Region										
Carbon	2	7	14	7	50	2	14	7	50	1.00
Emery	--	--	--	--	--	--	--	--	--	--
Grand	2	8	32	14	44	1	24	12	50	3.00
San Juan	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	4	15	46	21	46	3	38	19	50	1.73
STATE TOTALS	381	1,034	5,179	1,060	20	321	4,641	976	21	1.15

*Closed Season

Table 12. Sage grouse hunter success trend determined by field bag checks, 1982-87.

Region and County	1982		1983		1984		1985		1986		1987	
	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter
Northern Region												
Box Elder	13	0.78	16	1.05	13	0.82	16	0.98	17	1.06	19	1.39
Cache	2	0.05	4	0.13	4	0.18	--	--	19	0.71	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	7	0.28	13	0.53	17	0.56	18	0.68	14	0.57	17	0.70
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	11	0.44	--	--	--	--
REGIONAL TOTALS	12	0.66	15	0.94	13	0.78	16	0.95	17	0.93	19	1.20
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	17	0.33	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	17	0.33	--	--	--	--
Southern Region												
Beaver	--	--	--	--	--	--	20	0.60	--	--	--	--
Garfield	72	1.88	--	--	--	--	25	1.10	8	0.20	50	1.71
Iron	--	--	--	--	--	--	--	--	--	--	0	0.00
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	15	0.90	25	1.35	11	0.94	137	0.74	22	1.23	21	0.95
REGIONAL TOTALS	20	1.06	25	1.35	11	0.94	62	0.78	22	1.20	22	0.97
Northeastern Region												
Daggett	30	0.97	33	1.00	33	0.67	23	1.09	47	1.78	80	1.67
Duchesne	22	0.50	60	1.25	45	0.83	25	0.33	94	2.00	75	1.50
Uintah	34	1.20	34	0.89	25	0.80	40	1.10	49	1.17	36	1.05
REGIONAL TOTALS	33	1.13	35	0.93	26	0.79	36	1.06	52	1.33	40	1.12
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	200	1.00	50	1.00
Emery	--	--	--	--	--	--	133	1.00	--	--	--	--
Grand	--	--	--	--	--	--	100	2.00	--	--	50	3.00
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	114	1.33	200	1.00	50	1.73
STATE TOTALS	14	0.74	18	0.99	14	0.81	20	0.93	20	1.02	21	1.15

Table 13. Sex and age composition of harvested sage grouse, 1987.

Region and County	Sample Size	Adults			Young			Young/ 100 Adults	Young/ 100 Hens
		M	F	Total	M	F	Total		
<u>Northern Region</u>									
Box Elder	336	55	77	132	93	111	204	155	265
Cache	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--
Rich	77	7	21	28	29	20	49	175	233
Summit	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	413	62	98	160	122	131	253	158	258
<u>Central Region</u>									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
<u>Southern Region</u>									
Beaver	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	230	11	58	69	89	72	161	233	278
REGIONAL TOTALS	230	11	58	69	89	72	161	233	278
<u>Northeastern Region</u>									
Daggett	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--
Uintah*	82	4	9	13	35	34	69	531	767
REGIONAL TOTALS	82	4	9	13	35	34	69	531	767
<u>Southeastern Region</u>									
Carbon	63	4	32	36	8	19	27	75	84
Emery	--	--	--	--	--	--	--	--	--
Grand	12	3	4	7	1	4	5	71	125
San Juan	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	75	7	36	43	9	23	32	74	89
STATE TOTALS	800	84	201	285	255	260	515	181	256

*Blue Mountain data only

Table 14. Sex and age composition of harvested sage grouse from 1984-87.

Region and County	1984						1985						1986						1987						Averages 1981-86														
	Sex Ratio %		Young/100H		100A		Sex Ratio %		Young/100H		100A		Sex Ratio %		Young/100H		100A		Sex Ratio %		Young/100H		100A		Sex Ratio %		Young/100H		100A										
	n	M	F	n	M	F	n	M	F	n	M	F	n	M	F	n	M	F	n	M	F	n	M	F	n	M	F	n	M	F									
Northern Region																																							
Box Elder	297	40	60	261	161	296	43	57	258	174	322	41	59	395	232	336	44	56	265	155																			
Cache	4	25	75											100																									
Davis																																							
Morgan																																							
Rich	34	21	79	230	209	70	57	43	307	192	54	44	56	840	350	77	47	53	233	175																			
Summit																																							
Weber																																							
REGIONAL TOTALS	335	38	62	248	160	366	46	54	266	177	376	41	59	431	245	413	45	55	258	158																			
Central Region																																							
Juab																																							
Salt Lake																																							
Sanpete																																							
Tooele																																							
Utah																																							
Wasatch																																							
REGIONAL TOTALS																																							
Southern Region																																							
Beaver																																							
Garfield	118	45	55	500	258									172																									
Iron	28	46	54	229	133									75																									
Kane																																							
Millard																																							
Piute																																							
Sevier																																							
Washington																																							
Wayne	268	42	58	196	121	236	46	54	327	211	265	48	52	378	268	230	43	57	278	233																			
REGIONAL TOTALS	414	43	57	250	149	236	46	54	327	211	265	48	52	378	268	230	43	57	278	233																			
Northeastern Region																																							
Daggett																																							
Duchesne																																							
Uintah	71	49	51	321	173	195	45	55	277	200	65	47	53	323	183	82	48	52	767	531																			
REGIONAL TOTALS	71	49	51	321	173	195	45	55	277	200	65	47	53	323	183	82	48	52	767	531																			
Southeastern Region																																							
Carbon																																							
Emery																																							
Grand																																							
San Juan																																							
REGIONAL TOTALS																																							
STATE TOTALS	820	41	59	255	155	797	46	54	285	192	706	45	55	398	246	800	42	58	256	181																			

n = wing sample size.

FOREST GROUSE

SUMMARY

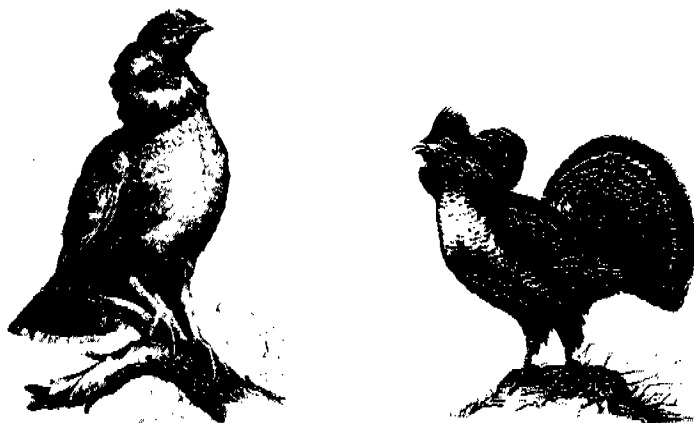
Judging from harvest statistics for the fall of 1986, the 1987 breeding populations of ruffed grouse were lower than average and blue grouse were above average for the first time in 5 years. Production of ruffed grouse appeared to be improving. Harvest data also confirmed an increasing population of ruffed grouse.

Production of blue grouse increased from 1986 and was above the 10-year average. Blue grouse observed per 100 hours of effort was 132 percent above average. A total of 134 forest grouse broods were observed during 1987 compared with 53 in 1986, 78 in 1985, and 33 in 1984.

Harvest statistics indicated a much higher density of forest grouse. Total harvest increased from 23,869 in 1986 to 45,326 in 1987, a 90 percent increase. Total hunters increased 22 percent in 1987 compared to 1986, and days afield increased from 30,312 to 41,428.

Field bag check data corroborated increased forest grouse numbers from the questionnaire. Blue grouse wing age ratios indicated production was similar or slightly better in 1986 in the Northern Region.

These data indicate the tremendous potential for increase inherent in blue grouse population irrespective of hunting. Forest grouse season lengths and bag limits have remained essentially the same for 20 years and populations fluctuate with breeding conditions.



Brood Counts

Ruffed Grouse

Results of the annual random brood survey for 1987 are shown in Table 1 of this section. Long-term trends of young-adult ratios, mean brood size and ruffed grouse observed per 100 hours are found in Tables 2-4. A summary of effort expended on ruffed and blue grouse brood counts combined is shown in Table 9. Survey results for 1987 compared to 1986 and the previous 10-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total ruffed grouse observed	126	+80	-13
Young per 100 adults	306	+2	-10
Mean brood size	3.75	+4	-19
Ruffed grouse observed per 100 hours	45	-4	+41
Total hours effort	282	+88	-44

Harvest statistics for 1986 indicated a below average breeding population for 1987, especially for ruffed grouse.

Effort on brood surveys increased significantly but was 44 percent below average.

Grouse observed per 100 hours was 57 percent above average, while mean brood size was 19 percent below average indicating poor production.

Blue Grouse

Results of the annual random brood survey for 1987 are shown in Table 5 of this section. Long-term trends of young-adult ratios, mean brood size and blue grouse observed per 100 hours are found in Tables 6-8. Survey results for 1987 compared to 1986 and the 10-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total blue grouse observed	688	+118	+38
Young per 100 adults	268	+19	+14
Mean brood size	4.00	+16	+3
Blue grouse observed per 100 hours	197	+79	+132
Total hours effort (forest grouse)	350	+22	-51

Harvest statistics for 1986 indicated the blue grouse breeding population for 1987 was above average.

All indications from the 1987 summer surveys on blue grouse were that production increased 19 percent from 1986 and was well above average.

This may have resulted from normal or above average temperatures November 1986 through June 1987 and below average precipitation December 1986 through June 1987, except for May which was slightly more wet than normal.

Total observations increased 118 percent, partially the result of increased effort. The number of grouse observed per 100 hours of effort increased from 1986 and was 132 percent above average.

Wing samples collected at checking stations were limited, but indicated a production rate similar to 1986 in the Northern Region.

Harvest

Hunter Questionnaire

Results of the 1987 blue grouse, ruffed grouse and combined hunter questionnaire are shown in Table 10, 11 and 12 respectively. Long-term trends of forest grouse bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 13-15 and total statewide harvest statistics in Table 16. Forest grouse season length, bag limits and harvest statistics, 1963-1987 are listed in Table 17. Harvest statistics for 1987 compared to 1986 and the 24-year (1963-86) average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Forest grouse hunters	14,831	+22	+1
Forest grouse harvested	45,326	+90	+33
Hunter-days afield	41,428	+37	+20
Forest grouse per hunter-day	1.09	+38	+11
Forest grouse per hunter	3.06	+55	+32
Percent ruffed grouse	34.9	-5	-10
Percent blue grouse	61.9	+4	+13
Percent unidentified	3.2	-14	-52

Results from the harvest questionnaire confirmed rapidly increasing forest grouse populations. However, this increase was in Blue grouse. Ruffed grouse populations remained below average. Total harvest increased 90 percent from 1986 and was 33 percent above average. Similarly, hunter success (grouse per hunter-day) was 11 percent above average, and the number of grouse harvested per hunter was 32 percent above average. Hunter pressure increased from 1986, and was 20 percent above the 24-year average.

Field Bag Checks

A summary of field bag check data for 1987 is found in Table 18. Hunter success trends determined via this method are shown in Table 19. Sex and age composition of the harvest as determined from wings is shown in Table 20 and 21. Results of the 1987 survey compared to 1986 and the 10-year (1977-86) average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total hunters checked	1,223	+135	+5
Total hours hunted	6,087	+273	+41
Forest grouse per hunter (complete hunts)	0.75	+50	+47
Forest grouse bagged per 100 hours	18	+29	+29
Average hours per hunter-day (complete hunts)	4.98	+38	+28
Hours hunted per grouse bagged (complete hunts)	8.72	+21	+5

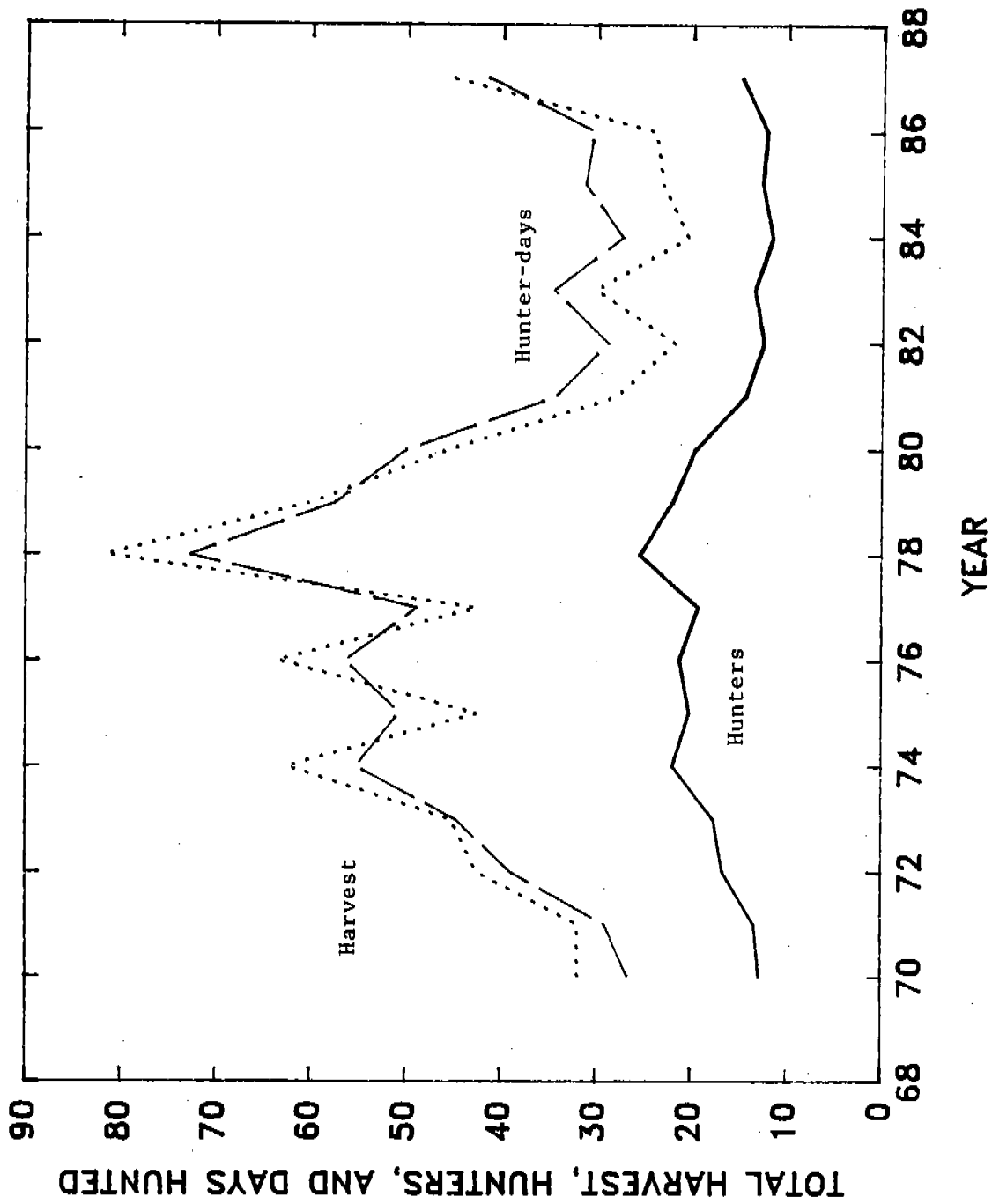


Figure 1. Statewide trends of forest grouse harvest statistics.

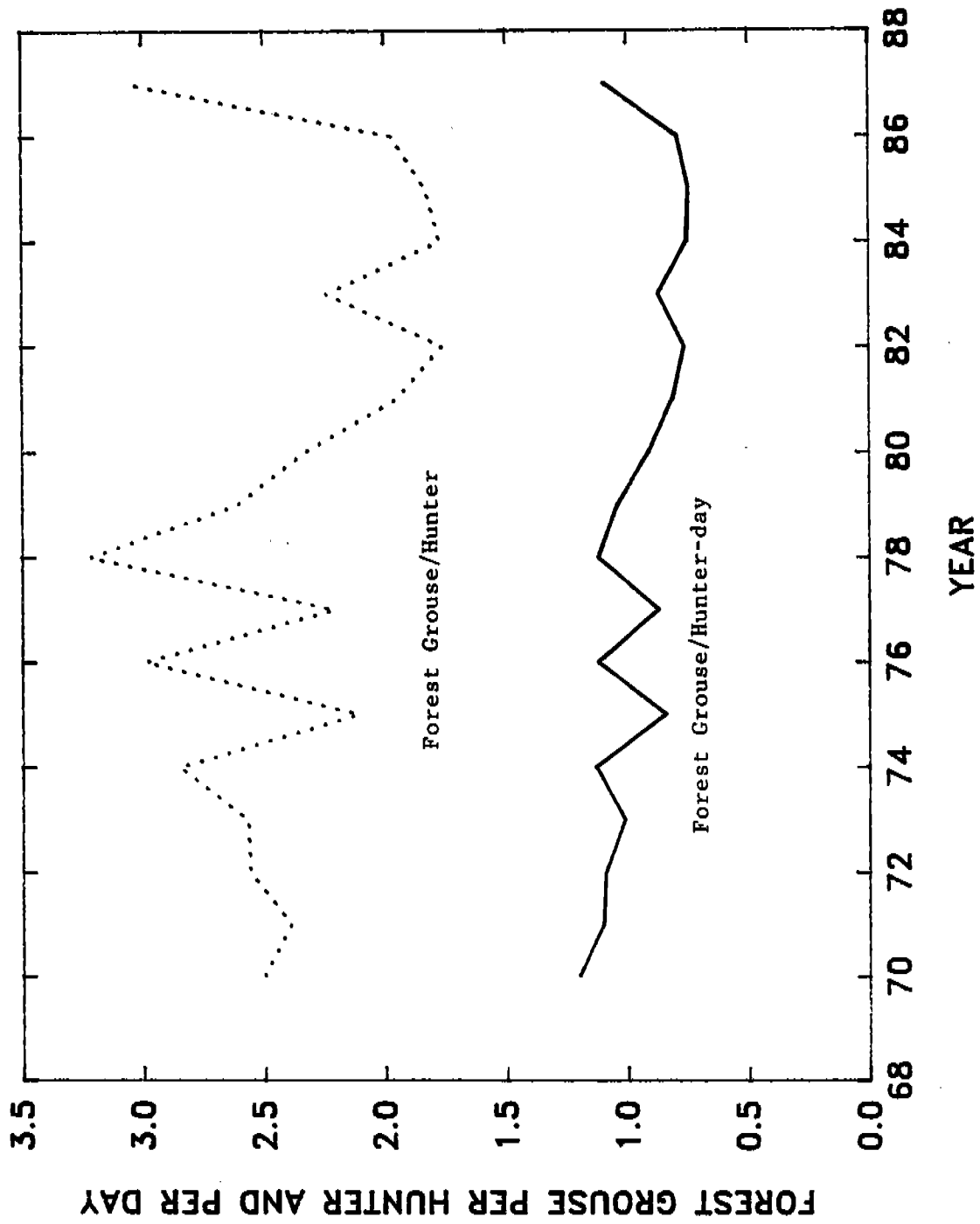


Figure 2. Statewide trends of forest grouse hunter success rates, 1968-1988.

Table 1. Ruffed grouse summer inventory, 1987.

Region and County	Distinct Broods		Mean Brood	Mixed Yng & Adults		Total Yng	Total Adults	Young w/o Adults	Young/100 Ad Miles	Hours of Effort		Birds/100 Hr				
	# Ad	Yng		Ad	Yng					Veh. Miles	Horse Walk					
Northern Region																
Box Elder	1	1	3	3.00	0	0	1	2	3	150	31	1	0	15	16	31
Cache	7	7	22	3.14	2	5	0	9	27	300	780	49	0	13	62	58
Davis	0	0	0	--	0	0	0	0	0	--	152	14	0	11	25	--
Morgan	0	0	0	--	0	0	0	0	0	--	65	12	13	2	27	--
Rich	0	0	0	--	0	0	0	0	0	--	90	6	0	0	6	--
Summit	3	3	15	5.00	0	0	0	3	15	500	0	0	0	2	2	900
Weber	4	4	19	4.75	0	0	1	5	19	380	30	1	8	0	9	267
REGIONAL TOTALS	15	15	59	3.93	2	5	2	19	64	337	1,148	83	21	43	147	56
Central Region																
Juab	0	0	0	--	0	0	0	0	0	--	0	0	8	0	8	--
Salt Lake	0	0	0	--	0	0	0	0	0	--	0	1	0	0	1	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	110	7	10	0	17	--
Utah	5	5	16	3.20	0	0	0	5	16	320	105	25	15	2	42	50
Wasatch	0	0	0	--	0	0	2	2	0	--	90	8	0	0	8	25
REGIONAL TOTALS	5	5	16	3.20	0	0	2	7	16	320	305	41	33	2	76	30
Southern Region																
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region																
Daggett	0	0	0	--	0	0	0	0	0	--	35	4	4	3	11	--
Duchesne	0	0	0	--	0	0	1	1	0	--	223	23	0	2	25	4
Uintah	3	3	12	4.00	0	0	0	3	12	400	180	19	0	3	22	68
REGIONAL TOTALS	3	3	12	4.00	0	0	1	4	12	300	438	46	4	8	58	28
Southeastern Region																
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Emery	1	1	3	3.00	0	0	0	1	3	300	0	0	0	1	1	400
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	1	1	3	3.00	0	0	0	1	3	300	0	0	0	1	1	400
STATE TOTALS	24	24	90	3.75	2	5	5	31	95	306	1,891	170	58	54	282	45

Table 2. Trend of ruffed grouse young per 100 adults, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	--	--	--	--	--	--	300	--	--	433	150	
Cache	300	262	450	138	--	--	700	--	350	100	300	
Davis	--	--	1,100	--	--	--	--	--	--	--	--	
Morgan	--	100	400	600	--	--	200	--	0	--	--	
Rich	--	--	--	--	--	--	--	--	667	200	--	
Summit	475	400	500	200	200	--	--	--	200	400	500	
Weber	400	--	500	500	267	--	--	--	150	--	380	
REGIONAL TOTALS	364	260	460	217	250	--	286	--	308	300	337	306
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	
Salt Lake	0	--	--	200	92	--	--	--	--	150	0	
Sanpete	289	462	506	373	390	476	475	--	700	--	--	
Tooele	--	--	--	--	--	300	--	--	--	--	--	
Utah	150	300	280	217	300	275	--	--	--	460	320	
Wasatch	--	--	300	--	--	--	300	--	--	--	--	
REGIONAL TOTALS	246	424	416	295	282	414	392	--	700	322	320	387
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	575	300	400	600	500	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	575	300	400	600	500	--	--	--	--	--	--	475
Northeastern Region												
Daggett	--	--	240	--	475	--	--	--	--	--	--	
Duchesne	67	300	450	--	700	--	--	--	--	--	--	
Uintah	--	600	--	300	--	--	--	--	--	--	400	
REGIONAL TOTALS	67	343	300	300	520	--	--	--	--	--	300	306
Southeastern Region												
Carbon	300	--	--	--	--	--	--	--	--	--	--	
Emery	--	--	--	--	--	--	--	--	--	--	300	
Grand	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	300	--	--	--	--	--	--	--	--	--	300	300
STATE TOTALS	298	345	398	294	311	404	353	--	336	312	306	339

Table 3. Trend of ruffed grouse mean brood size, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
<u>Northern Region</u>												
Box Elder--	--	--	--	--	--	--	3.00	--	--	2.00	3.00	--
Cache	4.00	4.33	5.14	3.67	--	--	7.00	--	3.50	1.00	3.14	--
Davis	--	--	9.00	--	--	--	--	--	--	--	--	--
Morgan	--	1.00	4.89	6.00	--	--	5.00	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	6.67	3.00	--	--
Summit	4.75	4.00	5.00	4.00	2.00	--	--	--	3.33	4.00	5.00	--
Weber	4.00	--	5.00	5.00	4.00	--	--	--	3.00	--	4.75	--
REGIONAL TOTALS	4.25	3.88	5.20	4.33	3.33	5.00	5.00	5.00	4.44	2.60	3.93	4.13
<u>Central Region</u>												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	2.00	2.20	--	--	--	--	--	--	--
Sanpete	4.44	5.11	5.79	5.14	5.47	5.47	4.75	--	7.00	--	--	--
Tooele	--	--	--	--	4.00	--	--	--	--	--	--	--
Utah	3.00	4.00	4.67	3.25	3.00	--	--	--	--	4.60	3.20	--
Wasatch	--	--	3.00	--	--	--	9.00	--	--	--	--	--
REGIONAL TOTALS	4.08	4.83	5.20	4.25	4.57	5.13	5.22	7.00	4.60	4.60	3.20	4.99
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	5.75	3.00	4.80	6.00	5.00	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	5.75	3.00	4.80	6.00	5.00	--	--	--	--	--	--	4.91
<u>Northeastern Region</u>												
Daggett	--	--	4.00	--	4.75	--	--	--	--	--	--	--
Duchesne	2.00	4.50	4.50	--	7.00	--	--	--	--	--	--	--
Uintah	--	6.00	--	6.00	--	--	--	--	--	--	4.00	--
REGIONAL TOTALS	2.00	4.80	4.20	6.00	5.20	--	--	--	--	4.00	4.00	4.44
<u>Southeastern Region</u>												
Carbon	3.00	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	3.00	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	3.00	--	--	--	--	--	--	--	--	--	3.00	3.00
STATE TOTALS	4.26	4.46	5.06	4.52	4.57	5.13	5.15	4.70	3.60	3.60	3.75	4.61

Table 4. Trend of ruffed grouse observed per 100 hours, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	--	--	--	--	--	--	29	--	--	80	31	
Cache	50	25	18	25	--	3	6	--	17	20	58	
Davis	--	--	60	--	--	--	--	--	--	--	--	
Morgan	--	8	149	20	--	--	57	--	2	--	--	
Rich	--	--	--	--	--	--	--	--	1,150	53	--	
Summit	144	61	600	21	--	--	--	--	52	36	900	
	111	--	16	17	31	--	--	--	21	--	267	
REGIONAL TOTALS	49	18	38	19	30	1	12	--	26	30	56	23
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	
Salt Lake	4	--	2	150	70	--	--	--	--	167	--	
Sanpete	125	203	270	200	515	293	271	--	160	--	--	
Tooele	0	--	--	--	--	880	--	--	--	--	--	
Utah	25	30	39	37	14	38	3	--	--	400	50	
Wasatch	0	--	--	48	3	--	--	86	--	--	25	
REGIONAL TOTALS	56	99	73	47	98	144	63	--	14	88	30	76
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	0	--	--	--	--	--	--	--	--	--	--	
Iron	0	--	--	--	--	--	--	--	--	--	--	
Kane	0	--	--	--	--	--	--	--	--	--	--	
Millard	0	--	--	--	--	--	--	--	--	--	--	
Piute	0	--	--	--	--	--	--	--	--	--	--	
Sevier	12	2	15	3	2	--	--	--	--	--	--	
Washington	0	--	--	--	--	--	--	--	--	--	--	
Wayne	--	0	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	9	2	15	3	2	--	--	--	--	--	--	6
Northeastern Region												
Daggett	0	--	85	--	164	--	--	--	--	--	--	
Duchesne	9	46	48	--	12	--	--	--	--	--	4	
Uintah	62	0	11	--	350	--	--	--	--	--	68	
REGIONAL TOTALS	4	21	26	350	26	--	--	--	--	--	28	85
Southeastern Region												
Carbon	7	--	9	--	--	--	--	--	--	--	--	
Emery	0	--	33	--	--	--	--	--	--	0	400	
Grand	--	--	--	--	--	--	--	--	--	0	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	3	--	12	--	--	--	--	--	--	--	400	8
STATE TOTALS	23	29	37	20	27	66	19	--	22	47	45	32

Table 5. Blue grouse summer inventory summary, 1987.

Region and County	Distinct Broods		Mean Brood	Mixed Yng & Adults		Total Yng	Total Adults	Young/100 Ad	Veh. Miles	Hours of Effort		Birds/100 Hr
	# Ad	Yng		Ad	Yng					Veh.	Horse	
Northern Region												
Box Elder	0	0	--	0	0	0	0	--	31	1	0	16
Cache	9	9	3.67	0	0	11	33	300	780	49	0	62
Davis	6	6	2.83	7	23	5	18	222	152	14	0	25
Morgan	3	3	4.33	0	0	3	13	433	65	12	13	27
Rich	0	0	--	0	0	0	0	--	90	6	0	6
Summit	3	3	5.00	0	0	3	15	500	0	0	0	2
Weber	4	4	4.75	0	0	5	19	380	30	1	8	9
REGIONAL TOTALS	25	25	3.88	7	23	8	40	300	1,148	83	21	147
Central Region												
Juab	0	0	--	0	0	0	0	--	0	0	8	8
Salt Lake	0	0	--	0	4	0	4	--	0	1	0	1
Sanpete	2	2	6.00	0	0	2	12	600	0	1	0	1
Tooele	7	7	3.43	0	0	4	11	218	110	7	10	17
Utah	20	20	3.45	0	0	7	27	256	105	25	15	42
Wasatch	0	0	--	0	0	0	0	--	90	8	0	8
REGIONAL TOTALS	29	29	3.62	0	4	11	40	273	305	42	33	77
Southern Region												
Beaver	2	2	4.00	0	0	4	6	133	50	5	0	3
Garfield	7	7	3.29	2	1	6	15	160	37	1	19	20
Iron	2	2	3.50	0	2	1	3	300	20	1	0	1
Kane	4	4	4.75	0	0	0	4	475	33	6	0	6
Millard	4	4	4.25	0	0	0	4	425	20	4	0	4
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	7	7	4.57	4	1	11	22	150	0	0	20	20
Washington	3	3	5.33	0	0	0	3	533	--	2	0	2
Wayne	4	4	3.50	0	0	0	4	350	40	4	0	4
REGIONAL TOTALS	33	33	4.12	6	4	22	61	230	200	23	39	65
Northeastern Region												
Daggett	17	17	4.71	12	26	3	32	331	35	4	4	3
Duchesne	2	2	2.50	2	4	3	7	129	223	23	0	2
Uintah	2	2	5.00	0	0	0	2	500	180	19	0	3
REGIONAL TOTALS	21	21	4.52	14	30	6	41	305	438	46	4	8
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	1	1	4.00	0	0	0	1	400	0	0	0	1
Grand	0	0	--	0	0	3	3	--	--	--	1	1
San Juan	1	1	3.00	0	0	0	1	300	--	--	1	1
REGIONAL TOTALS	2	2	3.50	0	0	3	5	7	0	0	0	3
STATE TOTALS	110	110	4.00	27	61	50	187	2,091	194	97	59	350

*Data from Southeastern Region and Southern Region

Table 6. Trend of blue grouse young per 100 adults, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	--	400	380	600	360	--	125	350	--	100	--	--
Cache	100	322	167	83	254	--	467	--	167	--	300	300
Davis	320	500	100	600	--	--	300	250	183	150	222	222
Morgan	117	230	0	233	200	--	--	300	900	--	433	433
Rich	--	--	--	300	--	--	--	--	--	350	--	--
Summit	333	560	325	400	389	--	--	500	450	--	500	500
Weber	400	425	280	425	221	400	--	--	400	--	380	380
REGIONAL TOTALS	167	357	205	217	271	400	220	300	269	222	300	263
Central Region												
Juab	--	200	200	124	300	--	400	400	0	180	--	--
Salt Lake	238	160	230	350	200	38	--	--	--	--	--	--
Sanpete	260	89	275	--	--	471	--	--	--	--	600	600
Tooele	82	108	225	141	138	--	138	--	168	167	218	218
Utah	27	266	169	279	88	100	200	--	175	--	256	256
Wasatch	--	800	214	--	--	200	250	--	--	--	--	--
REGIONAL TOTALS	120	156	200	167	153	317	156	400	157	169	273	200
Southern Region												
Beaver	--	--	200	--	200	214	700	250	200	267	133	133
Garfield	300	380	375	--	--	340	300	241	200	245	160	160
Iron	--	200	233	340	--	--	--	--	--	--	300	300
Kane	--	400	--	--	--	--	267	--	255	500	475	475
Millard	700	567	475	--	--	235	--	100	300	200	425	425
Piute	--	--	--	--	387	350	--	200	300	300	--	--
Sevier	86	214	100	179	155	238	100	80	417	--	150	150
Washington	--	600	400	--	500	--	367	--	--	233	533	533
Wayne	567	--	--	--	--	--	400	--	600	--	350	350
REGIONAL TOTALS	146	288	158	193	253	245	237	164	282	279	230	225
Northeastern Region												
Daggett	367	343	154	336	442	469	500	--	--	282	331	331
Duchesne	380	567	220	409	257	382	340	--	--	228	129	129
Uintah	350	500	460	354	380	238	311	--	--	140	500	500
REGIONAL TOTALS	372	486	202	366	371	381	402	--	--	235	305	352
Southeastern Region												
Carbon	500	225	100	350	200	--	700	300	150	500	--	--
Emery	300	--	--	--	--	--	--	--	--	--	400	400
Grand	300	--	--	--	100	--	--	25	200	260	--	--
San Juan	100	380	250	200	300	--	100	175	300	--	300	300
REGIONAL TOTALS	269	255	140	275	208	--	200	140	206	300	140	221
STATE TOTALS	181	278	188	219	274	297	272	190	229	225	268	235

Table 7. Trend of blue grouse mean brood size, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
<u>Northern Region</u>												
Box Elder	--	4.00	3.80	6.00	3.60	--	5.00	7.00	--	2.00	--	--
Cache	3.40	4.46	2.50	3.75	3.67	--	4.33	--	3.33	--	3.67	--
Davis	3.67	5.00	3.50	6.00	--	--	3.00	5.50	3.67	3.00	2.83	--
Morgan	2.80	3.83	--	3.00	2.00	--	--	3.00	9.00	--	4.33	--
Rich	--	--	--	3.00	--	--	--	--	--	--	--	--
Summit	5.00	5.60	4.33	4.00	3.89	--	--	5.00	4.50	--	5.00	--
Weber	4.00	4.25	3.50	4.25	3.57	4.00	--	--	5.33	4.00	4.75	--
REGIONAL TOTALS	3.56	4.55	3.63	3.90	3.65	4.00	4.20	4.83	4.73	3.25	3.88	4.03
<u>Central Region</u>												
Juab	--	4.00	2.00	3.67	4.00	--	4.00	4.00	0.00	--	--	--
Salt Lake	4.75	2.67	3.29	3.50	--	--	--	--	--	--	--	--
Sanpete	4.33	4.00	2.75	--	--	5.44	--	--	--	--	6.00	--
Tooele	2.50	4.40	4.20	3.58	3.20	--	3.83	--	3.38	3.20	3.43	--
Utah	1.50	3.13	3.13	3.00	7.00	3.00	4.00	--	3.50	--	3.45	--
Wasatch	--	8.00	5.00	--	--	3.00	5.00	--	--	--	--	--
REGIONAL TOTALS	3.64	3.61	3.30	3.37	3.89	5.05	4.00	4.00	3.43	3.20	3.62	3.75
<u>Southern Region</u>												
Beaver	--	--	5.00	--	4.00	2.60	7.00	3.33	2.00	2.67	4.00	--
Garfield	6.00	4.75	5.00	--	--	3.40	3.00	3.22	--	4.50	3.29	--
Iron	--	2.00	3.50	4.25	--	--	--	--	--	--	3.50	--
Kane	--	4.00	--	--	--	--	4.00	--	--	1.00	4.75	--
Millard	7.00	5.67	6.33	--	--	3.64	--	2.67	4.00	4.00	4.25	--
Piute	--	--	--	--	4.67	3.50	--	4.00	3.00	3.00	--	--
Sevier	4.29	4.50	3.29	4.95	3.44	4.04	2.50	2.00	4.16	--	4.57	--
Washington	--	6.00	4.00	--	5.00	--	3.67	--	--	3.50	5.33	--
Wayne	6.00	--	--	--	--	--	4.00	--	6.00	--	3.50	--
REGIONAL TOTALS	4.90	4.65	4.04	4.82	4.15	3.70	3.58	2.95	3.21	3.53	4.12	3.95
<u>Northeastern Region</u>												
Daggett	3.67	4.00	4.00	7.20	4.45	4.91	4.33	--	--	3.75	4.71	--
Duchesne	4.22	5.30	3.00	5.00	3.60	3.88	3.40	--	--	3.25	2.50	--
Uintah	3.50	5.00	5.75	3.70	4.75	2.71	5.60	--	--	4.00	5.00	--
REGIONAL TOTALS	3.94	4.83	3.95	4.90	4.35	4.00	4.63	--	--	3.56	4.52	4.27
<u>Southeastern Region</u>												
Carbon	4.75	4.50	2.00	3.50	2.00	--	7.00	3.00	3.00	5.00	--	--
Emery	3.00	--	--	--	--	--	--	--	--	--	4.00	--
Grand	6.00	--	--	--	2.50	--	--	--	3.00	3.25	--	--
San Juan	4.00	6.00	5.00	4.00	3.00	--	4.00	1.75	3.00	--	3.00	--
REGIONAL TOTALS	4.57	5.40	3.50	3.67	2.60	--	5.50	2.17	3.00	3.60	3.50	3.78
STATE TOTALS	4.00	4.44	3.69	4.20	3.97	4.06	4.29	3.18	3.56	3.44	4.00	3.88

Table 8. Trend of blue grouse observed per 100 hours, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
<u>Northern Region</u>												
Box Elder	--	39	800	58	230	--	64	38	--	20	0	0
Cache	62	41	7	44	74	--	14	--	77	--	71	--
Davis	84	188	140	92	7	--	33	110	94	50	232	--
Morgan	173	127	--	86	30	--	4	200	23	4	59	--
Rich	--	--	--	--	--	--	--	--	--	53	0	--
Summit	81	400	850	18	293	--	--	12	38	--	900	--
Weber	167	42	51	58	174	71	4	--	167	100	267	--
REGIONAL TOTALS	87	65	30	57	121	20	15	28	58	27	109	51
<u>Central Region</u>												
Juab	--	86	38	336	73	--	29	125	30	156	0	0
Salt Lake	112	111	70	450	36	48	14	--	--	--	400	--
Sanpete	31	65	33	--	--	281	--	--	--	--	1,400	--
Tooele	172	1,080	557	248	271	--	344	--	536	444	206	--
Utah	23	96	176	104	52	36	32	--	165	--	229	--
Wasatch	--	46	88	3	--	53	50	--	--	--	0	--
REGIONAL TOTALS	56	113	109	122	55	127	94	17	183	254	194	113
<u>Southern Region</u>												
Beaver	--	--	107	--	46	220	133	233	33	137	175	--
Garfield	53	86	61	--	--	--	--	141	122	141	195	--
Iron	0	150	333	275	--	--	--	--	--	--	1,200	--
Kane	0	--	--	--	--	--	122	--	213	257	383	--
Millard	133	--	2,300	--	--	248	15	107	133	200	525	--
Piute	0	--	--	--	557	225	--	200	67	266	--	--
Sevier	28	38	46	68	20	48	50	72	155	--	275	--
Washington	0	--	125	--	800	--	117	--	--	333	950	--
Wayne	2,000	0	--	--	--	--	--	--	700	--	450	--
REGIONAL TOTALS	35	56	61	74	41	74	80	122	140	178	309	86
<u>Northeastern Region</u>												
Daggett	88	100	420	600	736	389	632	--	--	300	1,255	--
Duchesne	84	148	209	130	75	126	51	--	--	51	64	--
Uintah	20	19	44	256	308	54	239	--	--	600	55	--
REGIONAL TOTALS	63	83	150	220	228	138	232	--	--	126	286	155
<u>Southeastern Region</u>												
Carbon	44	46	19	35	17	--	80	53	33	60	--	--
Emery	40	--	33	--	--	--	--	--	--	--	500	--
Grand	62	6	--	--	--	--	--	50	360	120	300	--
San Juan	24	99	54	46	218	--	100	73	53	--	400	--
REGIONAL TOTALS	38	46	29	38	128	--	90	60	123	96	400	72
STATE TOTALS	52	106	68	93	93	91	83	55	101	110	197	85

Table 9. Summary of effort expended on forest grouse brood counts, 1987.

Region and County	Vehicle Miles Traveled	Hours Effort Expended			Total
		Vehicle	Horseback	Walking	
<u>Northern Region</u>					
Box Elder	31	1	0	15	16
Cache	780	49	0	13	62
Davis	152	14	0	11	25
Morgan	65	12	13	2	27
Rich	90	6	0	0	6
Summit	0	0	0	2	2
Weber	30	1	8	0	9
REGIONAL TOTALS	1,148	83	21	43	147
<u>Central Region</u>					
Juab	0	0	8	0	8
Salt Lake	0	1	0	0	1
Sanpete	0	1	0	0	1
Tooele	110	7	10	0	17
Utah	105	25	15	2	42
Wasatch	90	8	0	0	8
REGIONAL TOTALS	305	42	33	2	77
<u>Southern Region</u>					
Beaver	50	5	0	3	8
Garfield	37	1	19	0	20
Iron	20	1	0	0	1
Kane	33	6	0	0	6
Millard	20	4	0	0	4
Piute	--	--	--	--	--
Sevier	0	0	20	0	20
Washington	--	2	--	--	2
Wayne	40	4	0	0	4
REGIONAL TOTALS	200	23	39	3	65
<u>Northeastern Region</u>					
Daggett	35	4	4	3	11
Duchesne	223	23	0	2	25
Uintah	180	19	0	3	22
REGIONAL TOTALS	438	46	4	8	58
<u>Southeastern Region</u>					
Carbon	--	--	--	--	--
Emery	--	--	--	1	1
Grand	--	--	--	1	1
San Juan	--	--	--	1	1
REGIONAL TOTALS	--	--	--	3	3
STATE TOTALS	2,091	194	97	59	350

*Estimated

Table 10. Summary of blue grouse hunter success and distribution of harvest and hunting pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	8	661	465	.70	2.45	1.65
Cache	41	3,946	3,039	.77	14.63	10.82
Davis	12	735	612	.83	2.72	2.18
Morgan	7	245	269	1.10	.90	.96
Rich	14	980	1,127	1.15	3.63	4.01
Summit	11	784	661	.84	2.90	2.35
Weber	15	1,568	1,544	.98	5.81	5.50
REGIONAL TOTALS	108	8,923	7,721	.87	33.09	27.51
<u>Central Region</u>						
Juab	6	294	465	1.58	1.09	1.65
Salt Lake	3	147	220	1.50	.54	.78
Sanpete	24	1,740	1,789	1.03	6.45	6.37
Tooele	17	956	1,495	1.56	3.54	5.32
Utah	35	3,137	3,358	1.07	11.63	11.96
Wasatch	17	1,225	931	.76	4.54	3.31
REGIONAL TOTALS	102	7,501	8,261	1.10	27.81	29.43
<u>Southern Region</u>						
Beaver	9	710	710	1.00	2.63	2.53
Garfield	4	392	245	.63	1.45	.87
Iron	5	245	343	1.40	.90	1.22
Kane	3	73	171	2.33	.27	.61
Millard	7	367	392	1.07	1.36	1.39
Piute	5	563	637	1.13	2.09	2.27
Sevier	33	3,873	3,505	.91	14.36	12.48
Washington	1	49	24	.50	.18	.08
Wayne	4	220	220	1.00	.81	.78
REGIONAL TOTALS	71	6,496	6,251	.96	24.09	22.27
<u>Northeastern Region</u>						
Daggett	8	441	490	1.11	1.63	1.74
Duchesne	15	1,078	1,348	1.25	4.00	4.80
Uintah	30	1,617	2,819	1.74	6.00	10.04
REGIONAL TOTALS	53	3,137	4,657	1.48	11.63	16.59
<u>Southeastern Region</u>						
Carbon	3	147	147	1.00	.54	.52
Emery	7	465	269	.58	1.72	.96
Grand	5	196	514	2.63	.72	1.83
San Juan	2	73	171	2.33	.27	.61
REGIONAL TOTALS	17	882	1,103	1.25	3.27	3.93
Unknown Counties	1	24	73	3.00	.09	.26
STATE TOTALS	352	26,965	28,068	1.04	100	100

*Total hunter trips from questionnaire returns.

Table 11. Summary of ruffed grouse hunter success and distribution of harvest and hunting pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	7	612	318	.52	3.18	2.01
Cache	51	4,584	3,579	.78	23.79	22.63
Davis	5	269	220	.82	1.39	1.39
Morgan	6	269	220	.82	1.39	1.39
Rich	9	710	686	.97	3.68	4.34
Summit	17	1,201	1,397	1.16	6.23	8.83
Weber	23	1,838	1,470	.80	9.54	9.30
REGIONAL TOTALS	118	9,486	7,893	.83	49.23	49.92
<u>Central Region</u>						
Juab	2	98	122	1.25	.50	.77
Salt Lake	2	245	318	1.30	1.27	2.01
Sanpete	13	1,274	907	.71	6.61	5.73
Tooele	2	73	245	3.33	.38	1.55
Utah	22	1,985	1,225	.62	10.30	7.75
Wasatch	17	980	784	.80	5.08	4.96
REGIONAL TOTALS	58	4,657	3,603	.77	24.16	22.79
<u>Southern Region</u>						
Beaver	0	0	0	0.00	0.00	0.00
Garfield	1	49	49	1.00	.25	.31
Iron	2	147	171	1.17	.76	1.08
Kane	0	0	0	0.00	0.00	0.00
Millard	3	220	1222	.56	1.14	.77
Piute	2	147	196	1.33	.76	1.24
Sevier	18	1,936	1,372	.71	10.05	8.68
Washington	0	0	0	0.00	0.00	0.00
Wayne	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	26	2,500	1,912	.76	12.97	12.09
<u>Northeastern Region</u>						
Daggett	4	220	245	1.11	1.14	1.55
Duchesne	11	784	808	1.03	4.07	5.11
Uintah	11	514	710	1.38	2.67	4.49
REGIONAL TOTALS	26	1,519	1,765	1.16	7.88	11.16
<u>Southeastern Region</u>						
Carbon	3	147	73	.50	.76	.46
Emery	5	367	318	.87	1.90	2.01
Grand	0	0	0	0.00	0.00	0.00
San Juan	1	73	24	.33	.38	.15
REGIONAL TOTALS	9	588	416	.71	3.05	2.63
Unknown Counties	2	514	220	.43	2.67	1.39
STATE TOTALS	239	19,268	15,811	.82	100	100

*Total hunter trips from questionnaire returns.

Table 12. Summary of blue and ruffed grouse hunter success and distribution of harvest and hunting pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
Northern Region						
Box Elder	17	1,078	735	.68	2.60	1.62
Cache	89	6,324	6,790	1.07	15.26	14.98
Davis	24	1,176	833	.71	2.84	1.83
Morgan	15	514	514	1.00	1.24	1.13
Rich	19	1,176	1,838	1.56	2.84	4.05
Summit	32	1,691	2,108	1.25	4.08	4.65
Weber	31	2,132	3,015	1.41	5.14	6.65
REGIONAL TOTALS	227	14,095	15,836	1.12	34.02	34.93
Central Region						
Juab	13	514	588	1.14	1.24	1.29
Salt Lake	8	514	539	1.05	1.24	1.18
Sanpete	37	2,598	2,917	1.12	6.27	6.43
Tooele	29	1,446	1,789	1.24	3.49	3.94
Utah	67	4,461	4,633	1.04	10.76	10.22
Wasatch	36	1,912	1,789	.94	4.61	3.94
REGIONAL TOTALS	190	11,448	12,257	1.07	27.63	27.04
Southern Region						
Beaver	11	784	710	.91	1.89	1.56
Garfield	7	514	294	.57	1.24	.64
Iron	15	857	637	.74	2.07	1.40
Kane	3	73	171	2.33	.17	.37
Millard	14	686	514	.75	1.65	1.13
Piute	10	784	931	1.19	1.89	2.05
Sevier	56	5,172	5,147	1.00	12.48	11.35
Washington	3	147	24	.17	.35	.05
Wayne	5	245	220	.90	.59	.48
REGIONAL TOTALS	124	9,266	8,653	.93	22.36	19.09
Northeastern Region						
Daggett	16	710	784	1.10	1.71	1.73
Duchesne	30	1,666	2,157	1.29	4.02	4.75
Uintah	49	2,304	3,750	1.63	5.56	8.27
REGIONAL TOTALS	95	4,682	6,692	1.43	11.30	14.76
Southeastern Region						
Carbon	9	318	294	.92	.76	.64
Emery	12	612	588	.96	1.47	1.29
Grand	6	269	514	1.91	.65	1.13
San Juan	5	196	196	1.00	.47	.43
REGIONAL TOTALS	32	1,397	1,593	1.14	3.37	3.51
Unknown Counties	3	539	294	.55	1.30	.64
STATE TOTALS	671	41,428	45,326	1.09	100	100

*Total hunter trips from questionnaire returns.

Table 13. Summary of forest grouse bagged per hunter-day by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>							
Box Elder	1.35	0.68	0.87	0.60	0.45	0.60	0.68
Cache	0.87	0.78	1.04	0.76	0.90	0.96	1.07
Davis	0.66	0.55	0.98	0.66	0.50	0.50	0.71
Morgan	0.59	0.73	1.01	0.44	0.88	0.64	1.00
Rich	0.17	0.66	0.65	0.86	0.75	0.39	1.56
Summit	0.73	0.81	0.75	0.54	0.70	0.63	1.25
Weber	0.75	0.81	0.84	0.60	0.60	0.85	1.41
REGIONAL TOTALS	0.77	0.74	0.92	0.66	0.71	0.76	1.12
<u>Central Region</u>							
Juab	1.07	0.71	0.77	0.43	1.00	0.14	1.14
Salt Lake	0.32	0.86	0.84	1.25	0.65	0.75	1.05
Sanpete	0.86	0.70	0.60	0.99	0.72	0.67	1.12
Tooele	0.89	1.07	0.97	0.40	1.00	0.89	1.24
Utah	0.85	0.77	0.85	0.84	0.86	0.59	1.04
Wasatch	0.81	0.55	0.76	0.43	0.59	0.51	.94
REGIONAL TOTALS	0.82	0.75	0.78	0.78	0.75	0.62	1.07
<u>Southern Region</u>							
Beaver	0.61	1.00	1.13	1.05	0.59	1.00	0.91
Garfield	1.08	0.50	1.09	0.67	0.79	0.27	0.57
Iron	0.94	0.73	1.03	0.59	0.94	1.21	0.74
Kane	0.79	0.53	0.05	0.67	0.78	0.14	2.33
Millard	1.04	0.78	0.54	0.64	0.50	1.14	0.75
Piute	1.40	0.70	1.16	1.27	0.94	1.42	1.19
Sevier	0.61	0.82	1.03	0.73	0.77	0.88	1.00
Washington	0.50	0.00	0.42	0.00	2.14	2.01	0.17
Wayne	0.40	0.56	0.46	0.34	1.09	0.33	0.90
REGIONAL TOTALS	0.80	0.75	0.89	0.82	0.82	0.98	0.93
<u>Northeastern Region</u>							
Daggett	0.92	1.15	1.00	0.47	0.94	1.19	1.10
Duchesne	1.25	0.75	0.99	0.67	0.60	1.07	1.29
Uintah	1.20	1.20	0.98	1.23	0.94	1.19	1.63
REGIONAL TOTALS	1.07	0.91	0.98	0.96	0.83	1.16	1.43
<u>Southeastern Region</u>							
Carbon	0.72	0.50	0.48	0.00	0.71	0.83	0.92
Emery	0.93	0.79	0.70	0.90	0.35	0.65	0.96
Grand	1.53	0.50	0.25	1.60	0.64	1.29	1.91
San Juan	1.00	1.00	0.25	0.67	0.20	0.67	1.00
REGIONAL TOTALS	0.98	0.69	0.54	0.86	0.52	0.81	1.14
Unknown Counties	1.67	0.67	1.33	1.00	1.00	0.00	0.55
STATE TOTALS	0.81	0.76	0.87	0.75	0.74	0.79	1.09

Table 14. Percentage distribution of forest grouse harvest by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>							
Box Elder	4.41	4.79	4.31	3.38	2.23	2.59	1.62
Cache	19.25	18.02	22.58	15.72	17.35	21.23	14.98
Davis	2.51	3.03	5.73	4.48	5.66	2.50	1.83
Morgan	5.10	3.17	3.42	2.88	3.90	3.02	1.13
Rich	0.53	3.73	2.76	3.78	4.26	2.24	4.05
Summit	6.47	4.15	3.78	2.49	3.52	2.93	4.65
Weber	6.54	9.71	8.58	7.86	4.91	10.44	6.65
REGIONAL TOTALS	44.82	46.59	51.16	49.59	41.85	44.96	34.93
<u>Central Region</u>							
Juab	2.21	1.06	1.60	1.19	1.02	0.26	1.29
Salt Lake	0.91	2.53	2.80	4.48	2.41	1.81	1.18
Sanpete	3.35	4.57	4.89	6.97	5.84	4.57	6.43
Tooele	2.51	4.15	3.06	1.00	2.87	4.74	3.94
Utah	17.43	12.03	10.67	13.34	9.65	8.02	10.22
Wasatch	4.11	3.80	3.69	2.58	5.01	3.02	3.94
REGIONAL TOTALS	30.52	28.15	26.71	29.56	26.80	22.43	27.04
<u>Southern Region</u>							
Beaver	1.75	0.42	0.80	2.09	2.13	0.86	1.56
Garfield	1.07	0.21	1.64	1.39	1.39	0.26	0.64
Iron	1.29	1.69	1.64	1.59	2.87	3.53	1.40
Kane	0.84	0.70	0.04	0.59	0.65	0.08	0.37
Millard	2.05	0.99	0.31	0.70	0.65	3.45	1.13
Piute	1.60	2.18	0.98	5.57	1.48	2.33	2.05
Sevier	2.89	6.26	4.71	4.38	4.45	6.56	11.35
Washington	0.08	0.00	0.22	0.00	1.39	0.52	0.05
Wayne	0.15	0.35	0.27	0.40	1.11	0.17	0.48
REGIONAL TOTALS	11.72	12.81	10.61	16.72	16.14	17.77	19.09
<u>Northeastern Region</u>							
Daggett	2.74	2.67	0.84	0.89	1.48	3.19	1.73
Duchesne	1.14	3.24	3.78	1.59	2.50	2.67	4.75
Uintah	2.28	3.80	3.73	7.56	6.21	6.03	8.27
REGIONAL TOTALS	6.16	9.71	8.35	10.05	10.20	11.91	14.76
<u>Southeastern Region</u>							
Carbon	1.60	0.70	0.71	0.00	2.23	0.86	0.64
Emery	1.98	0.77	1.38	1.79	1.11	0.95	1.29
Grand	1.75	0.28	0.09	0.79	1.48	0.77	1.13
San Juan	1.07	0.84	0.13	0.40	0.18	0.34	0.43
REGIONAL TOTALS	6.39	2.60	2.30	2.99	5.01	2.93	3.51
Unknown Counties	0.38	0.14	0.89	0.10	0.00	0.00	0.64
STATE TOTALS	100	100	100	100	100	100	100

Table 15. Percentage distribution of forest grouse hunting pressure by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>							
Box Elder	2.66	5.33	4.30	4.25	3.63	4.65	2.60
Cache	17.95	17.58	18.86	15.35	14.18	14.69	15.26
Davis	3.09	4.16	5.11	5.07	8.29	3.90	2.84
Morgan	7.05	3.30	2.94	4.91	3.29	3.15	1.24
Rich	2.54	4.26	3.72	3.28	4.18	4.05	2.84
Summit	7.18	3.89	4.41	3.42	3.70	4.50	4.08
Weber	7.12	9.11	8.87	9.69	6.02	9.00	5.14
REGIONAL TOTALS	47.59	47.63	48.22	45.97	43.29	43.93	34.02
<u>Central Region</u>							
Juab	1.67	1.12	1.82	2.08	0.75	1.50	1.24
Salt Lake	2.29	2.24	2.90	2.68	2.74	2.40	1.24
Sanpete	3.16	4.95	7.09	5.29	5.96	4.65	6.27
Tooele	2.29	2.93	2.75	1.86	2.12	3.90	3.49
Utah	16.71	11.77	10.96	11.84	8.29	10.49	10.76
Wasatch	4.15	5.22	4.22	4.54	6.23	4.50	4.61
REGIONAL TOTALS	30.26	28.24	29.74	28.31	26.09	27.44	27.63
<u>Southern Region</u>							
Beaver	2.35	0.32	0.62	1.49	2.67	1.05	1.89
Garfield	0.80	0.32	1.31	1.56	1.30	1.05	1.24
Iron	1.11	1.76	1.39	2.01	2.26	2.25	2.07
Kane	0.87	1.01	0.85	0.67	0.61	0.75	0.17
Millard	1.61	0.96	0.50	0.82	0.96	1.35	1.65
Piute	0.93	2.34	0.74	3.28	1.16	1.20	1.89
Sevier	3.84	5.75	3.99	4.47	4.24	6.30	12.48
Washington	0.12	0.05	0.46	0.00	0.48	0.30	0.35
Wayne	0.31	0.48	0.50	0.89	0.75	0.75	0.59
REGIONAL TOTALS	11.94	13.00	10.38	15.20	14.45	15.00	22.36
<u>Northeastern Region</u>							
Daggett	2.41	1.76	0.74	1.41	1.16	2.10	1.71
Duchesne	0.74	3.25	3.33	1.79	3.08	3.45	4.02
Uintah	1.55	3.09	3.33	4.62	4.86	4.35	5.56
REGIONAL TOTALS	4.70	8.10	7.40	7.82	9.10	9.90	11.30
<u>Southeastern Region</u>							
Carbon	1.79	1.07	1.20	0.30	2.33	0.45	0.76
Emery	1.73	0.75	1.70	1.49	2.33	1.80	1.47
Grand	0.93	0.43	0.31	0.37	1.71	0.75	0.65
San Juan	0.87	0.64	0.46	0.44	0.68	0.75	0.47
REGIONAL TOTALS	5.32	2.88	3.67	2.61	7.05	3.75	3.37
Unknown Counties	0.19	0.16	0.57	0.07	0.00	0.00	1.30
STATE TOTALS	100	100	100	100	100	100	100

Table 16. Statewide summary of forest grouse harvest statistics, 1963-87.

Year	Total Harvest				Hunter-days				Grouse/Hunter-day				Grouse Per Hunter		
	Hunters	Ruffed	Percent	Blue	Percent	Unknown	Percent	Total	Afield	Ruffed	Blue	Total	Ruffed	Blue	Total
1963	7,425	5,470	(40.2)	7,372	(54.2)	766	(5.6)	13,608	12,313	0.44	0.66	1.11	0.74	0.99	1.83
1964	6,487	5,354	(42.2)	6,685	(57.7)	652	(5.1)	12,691	10,566	0.51	0.63	1.20	0.82	1.03	1.96
1965	6,005	3,225	(37.2)	4,924	(56.8)	520	(6.0)	8,669	10,504	0.31	0.47	0.83	0.54	0.82	1.44
1966	6,683	6,966	(56.6)	4,659	(37.8)	696	(5.7)	12,321	12,387	0.56	0.38	0.99	1.04	0.68	1.84
1967	9,420	8,476	(48.4)	6,773	(38.6)	2,277	(13.0)	17,526	17,773	0.48	0.38	0.99	0.87	0.69	1.86
1968	13,061	17,048	(52.6)	12,604	(38.9)	2,762	(8.5)	32,414	26,537	0.64	0.47	1.22	1.30	0.96	2.48
1969	12,523	9,490	(44.1)	10,419	(48.5)	1,589	(7.4)	21,498	24,572	0.38	0.42	0.87	0.76	0.83	1.72
1970	12,775	15,590	(48.9)	13,515	(42.4)	2,793	(8.7)	31,898	26,619	0.59	0.51	1.20	1.22	1.06	2.50
1971	13,363	15,759	(49.4)	13,749	(43.1)	2,393	(7.5)	31,901	29,100	0.54	0.47	1.10	1.18	1.03	2.39
1972	16,640	20,648	(48.6)	19,221	(45.2)	2,649	(6.2)	42,518	38,940	0.53	0.49	1.09	1.24	1.16	2.56
1973	17,588	7,153	(15.8)	36,846	(81.4)	1,233	(2.7)	45,232	44,738	0.16	0.82	1.01	0.41	2.09	2.57
1974	21,920	24,561	(39.3)	32,236	(51.6)	5,642	(9.0)	62,439	55,258	0.44	0.58	1.13	1.12	1.47	2.85
1975	20,102	15,750	(37.1)	23,138	(54.5)	3,573	(8.4)	42,461	50,579	0.31	0.45	0.84	0.78	1.15	2.11
1976	21,186	23,551	(37.1)	35,660	(56.2)	4,225	(6.7)	63,436	56,422	0.42	0.63	1.12	1.11	1.68	2.99
1977	19,188	15,766	(37.1)	23,455	(55.2)	3,256	(7.7)	42,477	48,746	0.37	0.48	0.87	0.82	1.22	2.21
1978	25,318	30,340	(37.2)	46,651	(57.2)	4,567	(5.6)	81,558	72,732	0.42	0.64	1.12	1.20	1.84	3.22
1979	21,993	23,156	(38.7)	33,070	(55.3)	3,625	(6.0)	59,851	57,404	0.40	0.58	1.04	1.05	1.50	2.61
1980	19,511	15,457	(34.0)	27,588	(60.6)	2,477	(5.4)	45,522	49,899	0.31	0.55	0.91	0.79	1.41	2.33
1981	14,329	8,557	(30.7)	17,852	(64.0)	1,485	(5.3)	27,894	34,305	0.25	0.52	0.81	0.60	1.25	1.95
1982	12,384	7,509	(34.5)	12,138	(55.7)	2,131	(9.8)	21,778	28,767	0.26	0.42	0.76	0.60	0.98	1.76
1983	13,414	11,366	(37.8)	16,955	(56.4)	1,767	(5.9)	30,088	34,530	0.33	0.49	0.87	0.84	1.26	2.24
1984	11,511	6,780	(33.2)	12,647	(62.0)	969	(4.8)	20,396	27,244	0.25	0.46	0.75	0.59	1.10	1.77
1985	12,646	8,701	(37.7)	13,416	(58.1)	980	(4.2)	23,097	31,290	0.28	0.43	0.74	0.69	1.06	1.83
1986	12,117	8,819	(36.9)	14,156	(59.3)	894	(3.7)	23,869	30,312	0.29	0.47	0.79	0.73	1.17	1.97
1987	14,831	15,811	(34.9)	28,088	(61.9)	1,447	(3.2)	45,326	41,428	0.82	1.04	1.09	1.07	1.89	3.06
TOTALS	366,420	331,303	(38.5)	473,797	(55.1)	55,368	(6.4)	860,468	872,965	--	--	--	--	--	--
(1963-87)	14,650	13,146	(38.7)	18,572	(54.7)	2,247	(6.6)	33,964	34,647	0.38	0.54	0.98	0.90	1.27	2.32
AVERAGES															
(1963-86)															

Table 17. Blue and ruffed grouse harvest statistics and hunt regulations, 1963-1987.

Year	Total Ruffed Grouse Harvest		Total Blue Grouse Harvest		Total Forest Grouse Harvest		Total Hunter Afield		Total Hunter Days Afield		Season Length		Aggregate Bag Limits	
	Harvest		Harvest		Harvest		Hunter	Total	Hunter	Total	Open	Close	Days	Daily
1963	5,470		7,372		13,608		7,425	12,313		?	?	***	4	8
1964	5,354		6,685		12,691		6,487	10,566		9/26	10/16	21	4	8
1965	3,225		4,924		8,669		6,005	10,504		9/25	10/22	28	4	8
1966	6,966		4,659		12,321		6,683	12,387		9/24	10/21	28	4	8
1967	8,476		6,773		17,526		9,420	17,773		9/23	10/31	39	4	8
1968	17,048		12,604		32,414		13,061	26,537		9/28	10/29	32	4	8
1969	9,490		10,419		21,498		12,523	24,572		9/27	11/2	37	4	8
1970	15,590		13,515		31,898		12,775	26,619		9/26	11/6	42	4	8
1971	15,759		13,749		31,901		13,363	29,100		9/25	11/30	67	4	8
1972	20,648		19,221		42,518		16,640	38,940		9/23	11/30	69	4	8
1973	7,153		36,846		45,232		17,588	44,738		9/22	11/30	70	4	8
1974	24,561		32,236		62,439		21,920	55,258		9/28	11/30	64	4	8
1975	15,750		23,138		42,461		20,102	50,579		9/20	11/30	72	4	8
1976	23,551		35,660		63,436		21,186	56,422		9/18	11/30	74	4	8
1977	15,766		23,455		42,477		19,188	48,746		9/17	11/30	75	4	8
1978	30,340		46,651		81,558		25,318	72,732		9/16	11/30	76	4	8
1979	23,156		33,070		59,851		21,993	57,404		9/15	11/30	77	4	8
1980	15,457		27,588		45,522		19,511	49,899		9/20	11/30	72	4	8
1981	8,557		17,852		27,894		14,329	34,305		9/19	11/30	73	4	8
1982	7,509		12,138		21,778		12,384	28,767		9/18	11/30	74	4	8
1983	11,366		16,955		30,088		13,414	34,530		9/17	11/30	75	4	8
1984	6,780		12,647		20,396		11,511	27,244		9/15	11/30	77	4	8
1985	8,701		13,416		23,097		12,646	31,290		9/14*	11/30	78	4	8
1986	8,819		14,156		23,869		12,117	30,312		9/13	11/30	79	4	8
1987	15,811		28,068		45,326		14,831	41,428		9/12	11/30	80	4	8

**From 1950 to 1963 a grouse stamp was required to hunt any grouse. In 1964, the entire state was opened to hunting without a stamp.

*Season opener changed to the second Saturday in September from the third Saturday in September.

Table 18. Forest grouse field bag check summary, 1987.

Region and County	ALL HUNTS				COMPLETE HUNTS				Total Birds/ 100 Hr Hunter	
	Total Parties	Total Hunters	Total Hours	Total Birds/ 100 Hr	Total Complete Hunts	Total Hunters	Total Hours	Total Birds		
Northern Region										
Box Elder	155	385	2,820	76	3	2	18	7	39	3.50
Cache	207	437	1,907	307	16	413	1,831	305	17	0.74
Davis	15	34	117	22	19	25	89	14	16	0.56
Morgan	--	--	--	--	--	--	--	--	--	--
Rich	43	80	361	35	10	80	361	35	10	0.44
Summit	--	--	--	--	--	--	--	--	--	--
Weber	29	52	153	44	29	43	138	40	29	0.93
REGIONAL TOTALS	449	988	5,358	484	9	563	2,437	401	16	0.71
Central Region										
Juab	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--
Utah	--	72	284	37	13	72	284	37	13	0.51
Wasatch	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	72	284	37	13	72	284	37	13	0.51
Southern Region										
Beaver	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--
Millard	16	23	50	21	42	7	17	14	82	2.00
Piute	--	--	--	--	--	--	--	--	--	--
Sevier	3	8	35	2	6	0	0	0	--	--
Washington	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	19	31	85	23	27	7	17	14	82	2.00
Northeastern Region										
Daggett	6	13	13	20	154	5	26	12	46	1.20
Duchesne	3	4	12	4	33	3	12	4	33	1.00
Uintah	41	115	335	130	39	35	97	51	53	1.46
REGIONAL TOTALS	50	132	360	154	43	49	135	67	50	1.37
Southeastern Region										
Carbon	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	518	1,223	6,087	698	11	304	2,873	519	18	0.75

Table 19. Forest grouse hunter success trends determined by field day checks, 1962-87.

Region and County	1982		1983		1984		1984		1986		1987	
	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter
Northern Region												
Box Elder	12	0.40	13	0.40	4	0.10	--	--	35	1.42	39	3.50
Cache	8	0.32	10	0.41	15	0.56	15	0.70	15	0.57	17	0.74
Davis	13	0.44	21	0.83	18	0.67	--	--	--	0.00	16	0.56
Morgan	33	1.00	29	2.00	--	--	--	--	--	--	--	--
Rich	2	0.10	2	0.09	13	0.57	6	0.23	6	0.2	10	0.44
Summit	--	--	--	--	--	--	--	--	200	2.00	--	--
Weber	1	0.04	7	0.28	2	0.08	26	0.86	10	0.38	29	0.93
REGIONAL TOTALS	7	0.28	11	0.45	13	0.47	14	0.58	14	0.50	16	0.71
Central Region												
Juab	59	1.63	--	--	22	0.59	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	17	0.50	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	46	1.50	--	--	13	0.51
Utah	14	0.70	15	0.62	9	0.39	4	0.13	10	0.39	--	--
Wasatch	18	0.31	15	0.70	--	--	--	--	--	--	--	--
REGIONAL TOTALS	15	0.71	15	0.63	11	0.43	7	0.27	10	0.39	13	0.51
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	9	0.33	--	--	10	0.33	25	1.00	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	7	0.25	3	0.14	89	1.33	6	0.00	16	0.60	82	2.00
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	88	3.00	--	--	--	--	50	1.50	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	58	2.00	5	0.20	89	1.33	10	0.40	17	0.63	82	2.00
Northeastern Region												
Daggett	56	1.25	55	1.75	--	--	20	1.10	--	--	46	1.20
Duchesne	20	0.50	--	--	26	1.15	0	0.00	16	0.55	33	1.00
Uintah	19	0.61	14	0.59	29	1.25	32	1.22	12	0.43	53	1.46
REGIONAL TOTALS	21	0.65	24	0.92	28	1.22	25	1.08	13	0.45	50	1.37
Southeastern Region												
Carbon	--	--	--	--	--	--	39	1.17	--	--	--	--
Emery	--	--	--	--	--	--	133	1.33	333	2.50	--	--
Grand	--	--	100	2.00	--	--	50	1.00	50	0.50	--	--
San Juan	--	--	--	--	--	--	--	--	33	1.00	--	--
REGIONAL TOTALS	--	--	100	2.00	--	--	52	1.20	54	1.40	--	--
STATE TOTALS	12	0.49	14	0.55	14	0.54	14	0.57	14	0.50	18	0.75

Table 20. Sex and age composition of harvested blue grouse, 1987.

Region and County	Sample Size	Adults			Young			Young/ 100 Adults	Young/ 100 Hens
		M	F	Total	M	F	Total*		
<u>Northern Region</u>									
Box Elder	--	--	--	--	--	--	--	--	--
Cache	32	7	5	12	9	11	20	167	400
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--
Rich	10	1	1	2	4	4	8	400	800
Summit	--	--	--	--	--	--	--	--	--
Weber	19	4	3	7	4	8	12	171	400
REGIONAL TOTALS	61	12	9	21	17	23	40	190	444
<u>Central Region</u>									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	7	1	0	1	0	6	6	600	--
Tooele	--	--	--	--	--	--	--	--	--
Utah	29	4	4	8	12	9	21	263	525
Wasatch	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	36	5	4	9	12	15	27	300	675
<u>Southern Region</u>									
Beaver	--	--	--	--	--	--	--	--	--
Garfield	4	3	0	3	1	0	1	33	--
Iron	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	4	3	0	3	1	0	1	33	--
<u>Northeastern Region</u>									
Daggett	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--
Uintah	154	9	11	20	70	64	134	670	1,218
REGIONAL TOTALS	154	9	11	20	70	64	134	670	1,218
<u>Southeastern Region</u>									
Carbon	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--
Grand	8	0	2	2	2	4	6	300	300
San Juan	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	8	0	2	2	2	4	6	300	300
STATE TOTALS	263	29	26	55	102	106	208	378	800

*Includes unclassified juveniles.

Table 21. Sex and age composition of harvested ruffed grouse, 1987.

Region and County	Sample Size	Adults			Young			Young/ 100 Adults	Young/ 100 Hens
		M	F	Total	M	F	Total*		
<u>Northern Region</u>									
Box Elder	--	--	--	--	--	--	--	--	--
Cache	21	4	3	7	6	8	14	200	467
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--
Rich	18	2	2	4	7	7	14	350	700
Summit	--	--	--	--	--	--	--	--	--
Weber	10	1	3	4	3	3	6	150	200
REGIONAL TOTALS	49	7	8	15	16	18	34	227	425
<u>Central Region</u>									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
<u>Southern Region</u>									
Beaver	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
<u>Northeastern Region</u>									
Daggett	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
<u>Southeastern Region</u>									
Carbon	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
STATE TOTALS	--	--	--	--	--	--	--	--	--

*Includes unclassified juveniles.

QUAIL

SUMMARY

The 1987 breeding populations of California and Gambel's quail were lower than in 1986, but were about average.

Production of Gambel's quail increased from 1986, but remained about average.

Statewide harvest statistics, when compared to 1986, showed an increase in total hunters and total harvest. Hunter success (birds per hunter-day) remained below average statewide. There was an increase in hunter days afield and increase in total harvest of Gambel's quail reported in Washington County.

There has been a long-term decline in hunter success and total harvest in Washington County; however, there has been an increase in production trend indices. The 25-year average young/100 adults index is 290/100 which is about what is needed for population stability. Given the extensive urban development in the St. George-Hurricane areas since 1962, the decline in total harvest and hunter success is only partly attributable to habitat loss. There are areas that sustain quail populations that cannot be hunted because of urban expansion (i.e. Bloominton, Bloomington east, Santa Clara River below Santa Clara, north of St. George). These were popular hunting areas in the early 1960's (D. Nish personal communication).



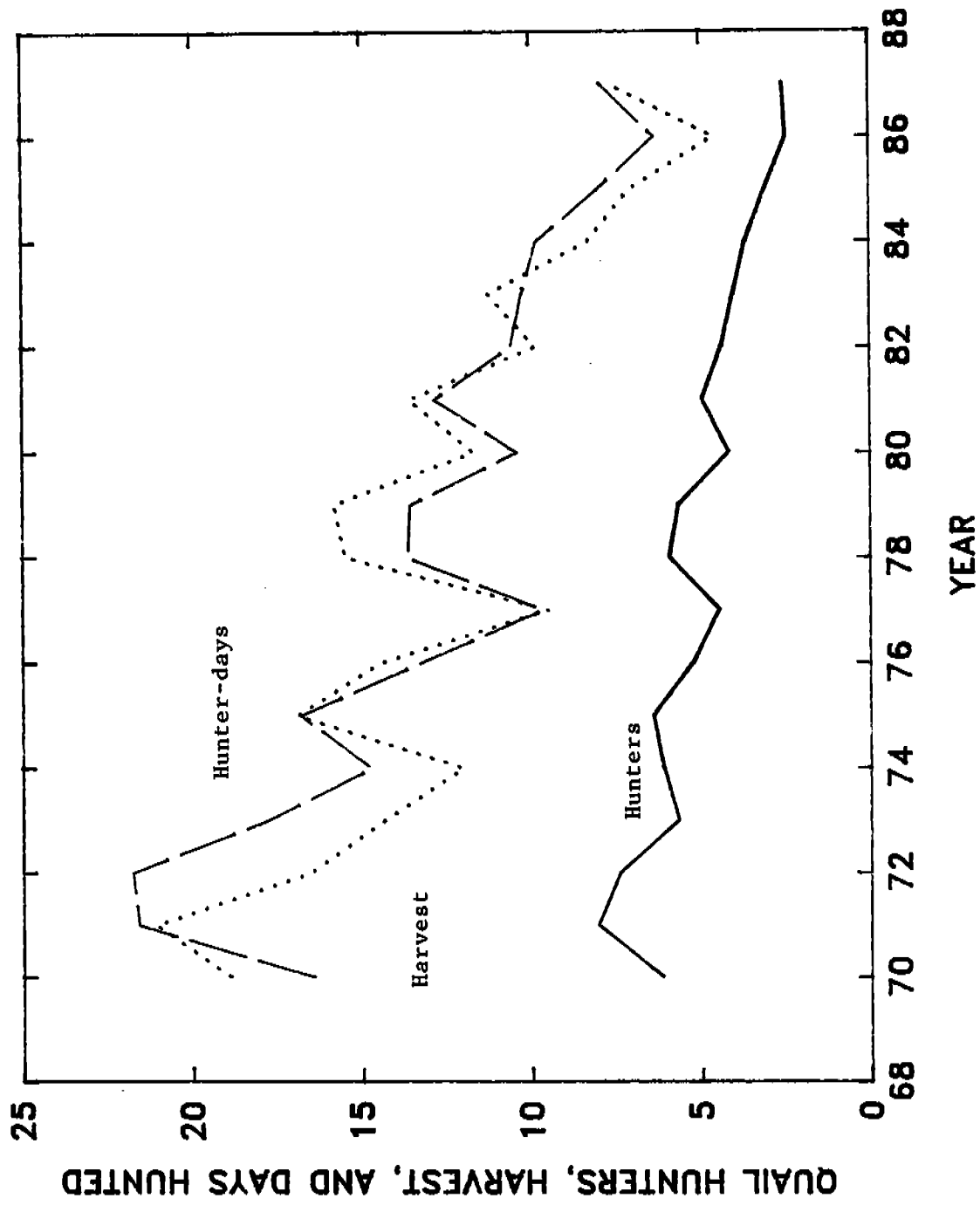


Figure 1. Statewide trend of quail harvest statistics.

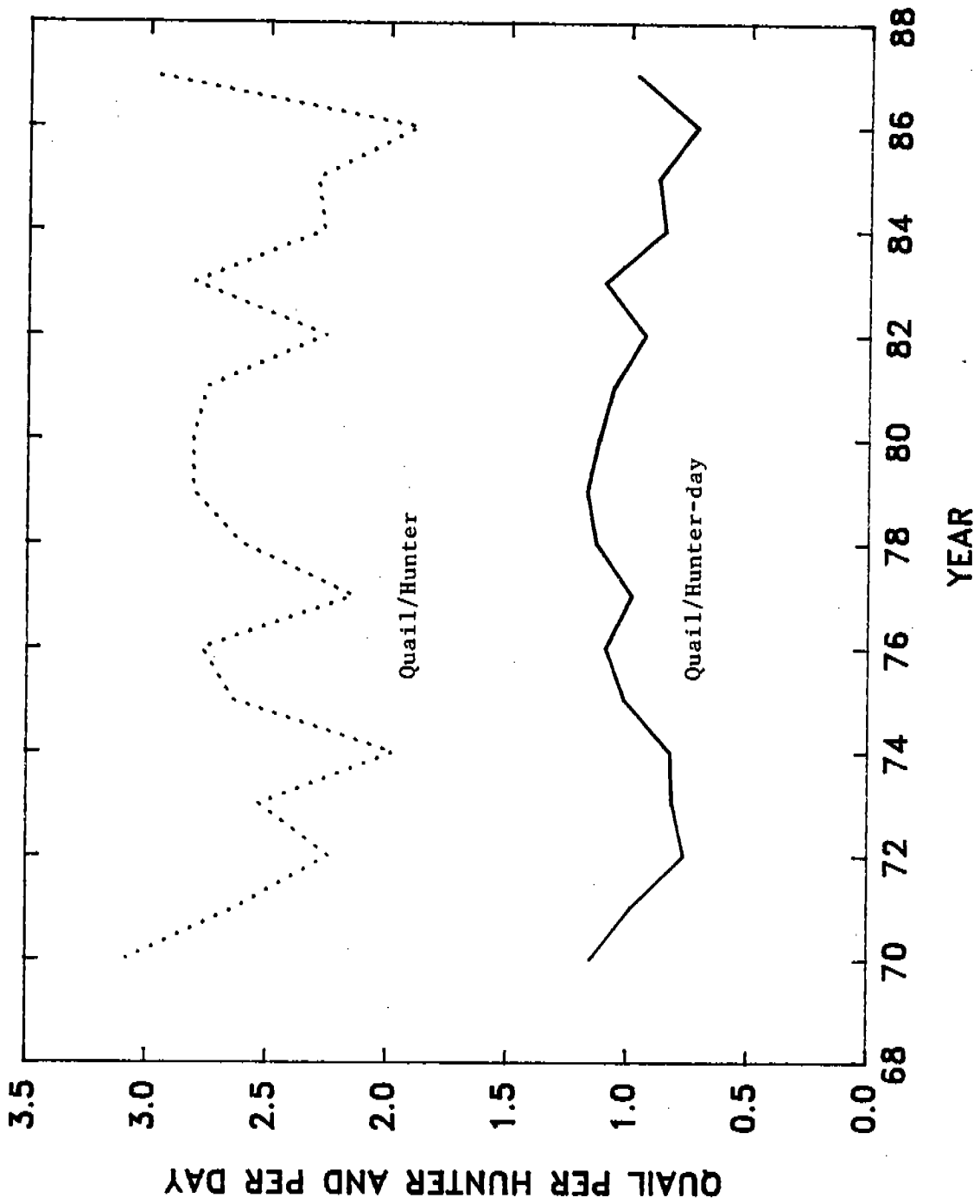


Figure 2. Statewide trend of quail hunter success rates, 1968-1988.

Brood Counts

Results of the annual random brood counts for 1987 are shown in Table 1 of this section. Long-term trends of young-adult ratios, mean brood size and quail observed per 100 hours are shown in Tables 2-4. Gambel's quail long period waterhole count trends are in Table 10. Survey results for 1987 compared to 1986 and the previous 10-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total quail observed	605	+35	+7
Young per 100 adults	276	-17	+2
Mean brood size	3.74	-44	-47
Quail observed per 100 hours	1,984	+31	+190
Total hours effort	31.5	+7	-65

Harvest statistics for 1986 indicated a decreased breeding population of quail statewide, but there was good overwinter survival as indicated by a 31 percent increase in quail observed per 100 hours of effort.

Brood counts indicated better production of both California and Gambel's quail. Production improved from 1986 and was about average.

Temperatures were well above average in the Dixie climatic subdivision April through June, and precipitation was about average through April. Wet and cool weather prevailed thereafter, which should have fostered good production.

Harvest

Results of the annual hunter questionnaire for 1987 are shown in Table 5. Long-term trends of quail bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 6-8, and total statewide harvest statistics in Table 9.

Comparison of the 1987 season to 1986 and the previous 28-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Quail hunters	2,549	+5	-60
Quail harvested	7,648	+67	-56
Hunter-days afield	7,918	+25	-50
Quail per hunter-day	0.97	+35	-13
Quail per hunter	3.00	+60	+8

Harvest for 1987 increased 67 percent from 1986 but was 56 percent below average.

In Washington County (Gambel's quail), hunter success increased 83 percent, and total harvest increased 143 percent from 1986. Hunter-days afield increased 33 percent. Approximately 43 percent of the statewide harvest of quail was taken in Washington County during 1987 compared to 29 percent in 1986 and nearly 36 percent in 1985.

Long-term quail harvest statistics are shown in Figure 1.

Table 1. Quail summer inventory summary, 1987.

Region and County	Distinct Broods		Mean		Mixed Yng & Adults		Total Adults	Total Yng	Young/100 Ad Miles	Hours of Effort		Birds/100 Hr
	# Ad	Yng	Brood	Ad	Yng	w/o Yng				Veh.	Miles	
<u>Northern Region</u>												
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	1	1	14	14	0	0	1	14	1,400	0	0	1
REGIONAL TOTALS	1	1	14	14	0	0	1	14	1,400	0	0	1
<u>Central Region</u>												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	2	2	22	11.00	0	0	8	22	220	20	2	0
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	2	2	22	11.00	0	0	8	22	220	20	2	0
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	7	5	60	12.00	0	0	6	60	545	90	4.5	0
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	29	61	162	2.66	58	186	20	139	348	167	24	0
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	36	66	222	3.36	58	186	26	150	408	272	257	28.5
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
<u>Southeastern Region</u>												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	39	69	258	3.74	58	186	34	161	444	276	277	30.5
										1	0	31.5

*Waterhole count

Table 2. Trend of quail young per 100 adults, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	--	--	--	--	440	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	196	500	94	35	--	--	--	--	--	--	--
Morgan	--	--	500	--	--	550	--	1,050	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	133	--	233	--	--	125	125	--	--	1,400	--	--
REGIONAL TOTALS	133	209	233	94	128	130	130	1,050	700	700	220	291
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	86	77	256	400	67	40	40	--	--	--	--	--
Sanpete	230	300	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	80	44	240	714	100	--	--	700	700	220	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	95	127	245	656	72	40	40	700	700	700	220	297
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
*Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	98	47	204	156	540	300	133	138	44	545	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	700	--	--	250	--	--	--	--	--	--
*Washington	149	555	301	93	226	152	624	224	571	412	250	--
*Wayne	238	1,250	--	--	550	--	--	--	--	--	--	--
REGIONAL TOTALS	146	317	283	114	439	162	544	213	434	456	272	311
Northeastern Region												
Daggett	0	--	--	--	--	--	--	--	--	--	--	--
Duchesne	129	190	340	114	583	600	--	--	--	--	--	--
Uintah	383	800	653	338	305	411	--	--	--	--	--	--
REGIONAL TOTALS	122	336	517	282	367	286	--	--	--	--	--	318
Southeastern Region												
Carbon	--	650	--	--	--	--	--	--	--	--	--	--
Emery	0	19	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	300	--	--	--	--	--	--	--
San Juan	--	41	--	40	--	--	--	--	--	--	--	--
REGIONAL TOTALS	38	89	40	--	300	--	--	--	--	--	--	117
STATE TOTALS	112	272	285	155	311	134	412	213	473	331	276	270

*Washington, Kane and Wayne counties, Gambel's quail; all others, California quail.

Table 3. Trend of quail mean brood size from 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	--	--	--	--	11.00	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	6.75	5.00	1.33	--	--	--	--	--	--	--
Morgan	--	--	5.00	--	--	--	11.00	--	10.50	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	3.75	--	--	--	14.00	--
REGIONAL TOTALS	--	--	6.40	5.00	6.85	--	5.20	--	10.50	--	14.00	6.79
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	6.40	2.00	4.60	4.00	--	--	3.00	--	--	--	--	--
Sanpete	4.33	4.75	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	4.00	4.00	4.00	5.00	3.00	--	--	--	7.00	7.50	11.00	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	5.78	3.44	4.43	4.50	3.00	--	3.00	--	7.00	7.50	11.00	4.83
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
*Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	6.67	6.25	11.25	5.63	8.54	--	3.00	4.00	9.00	1.80	12.00	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	7.00	--	--	--	--	--	--	--	--	--
*Washington	7.83	11.80	8.51	5.22	6.42	6.00	13.50	5.09	8.43	7.85	2.66	--
*Wayne	13.00	--	--	--	5.50	--	--	--	--	--	--	--
REGIONAL TOTALS	8.07	10.21	8.86	5.45	7.97	6.00	11.17	5.06	8.56	6.64	3.36	7.80
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	3.43	6.86	6.00	4.00	9.00	--	--	--	--	--	--	--
Uintah	7.67	8.00	6.34	3.55	12.80	6.17	--	--	--	--	--	--
REGIONAL TOTALS	4.70	7.35	6.17	3.59	11.71	6.17	--	--	--	--	--	6.65
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	4.50	--	--	--	--	--	--	--
San Juan	4.50	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	4.50	--	--	--	4.50	--	--	--	--	--	--	4.50
STATE TOTALS	6.25	7.55	8.08	4.52	8.09	6.05	9.71	5.06	8.62	6.70	3.74	7.06

*Washington, Kane and Wayne counties, Gambel's quail; all others, California quail.

Table 4. Trend of quail observed per 100 hours, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	--	--	--	--	1,800	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	956	729	525	--	--	--	--	--	--	--	--
Morgan	--	600	--	--	--	222	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	350	1,000	--	--	--	825	--	--	--	1,500	--	--
REGIONAL TOTALS	350	927	729	891	511	825	511	1,500	1,500	682	682	682
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	2,092	575	1,067	167	63	527	1,400	--	--	--	--	--
Sanpete	236	400	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	90	217	1,700	900	75	--	--	320	2,000	1,600	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	805	378	1,429	296	258	414	247	320	2,000	1,600	1,600	683
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
*Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	1,088	867	1,340	1,536	3,911	800	350	177	344	867	1,303	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	50	800	--	--	1,400	--	--	--	--	--	--
*Washington	596	750	2,741	675	275	771	605	380	783	1,604	2,029	--
*Wayne	645	333	--	--	650	--	--	--	--	--	--	--
REGIONAL TOTALS	702	667	1,951	867	1,053	691	580	357	663	1,484	1,958	902
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	240	310	209	79	205	27	42	--	--	--	--	--
Uintah	483	563	890	613	708	328	100	--	--	--	--	--
REGIONAL TOTALS	350	398	443	314	406	123	58	--	--	--	--	299
Southeastern Region												
Carbon	--	1,500	--	--	--	--	--	--	--	--	--	--
Emery	67	950	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	400	--	--	--	--	--	--	--
San Juan	238	0	127	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	206	425	127	--	400	--	--	--	--	--	--	290
STATE TOTALS	588	530	1,193	541	720	408	411	297	645	1,519	1,984	685

*Washington, Kane and Wayne counties, Gambel's quail; all others, California quail.

Table 4. Trends of quail observed per 100 mounts, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	--	--	--	--	1,800	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	956	729	525	--	--	--	--	--	--	--
Morgan	--	--	600	--	--	222	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	350	--	1,000	--	--	825	--	--	--	1,500	--	--
REGIONAL TOTALS	350	--	927	729	891	511	--	--	--	1,500	--	682
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	2,092	575	1,067	167	63	527	1,400	--	--	--	--	--
Sanpete	236	400	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	90	217	1,700	900	75	--	--	--	320	2,000	1,600	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	805	378	1,429	296	258	414	247	--	320	2,000	1,600	683
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
*Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	1,088	867	1,340	1,536	3,911	800	350	177	344	867	1,303	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	50	800	--	--	1,400	--	--	--	--	--	--
*Washington	596	750	2,741	675	275	771	605	380	783	1,604	2,029	--
*Wayne	645	333	--	--	650	--	--	--	--	--	--	--
REGIONAL TOTALS	702	667	1,951	867	1,053	691	580	357	663	1,484	1,958	902
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	240	310	209	79	205	27	42	--	--	--	--	--
Uintah	483	563	890	613	708	328	100	--	--	--	--	--
REGIONAL TOTALS	350	398	443	314	406	123	58	--	--	--	--	299
Southeastern Region												
Carbon	--	1,500	--	--	--	--	--	--	--	--	--	--
Emery	67	950	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	400	--	--	--	--	--	--	--
San Juan	238	0	127	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	206	425	127	--	400	--	--	--	--	--	--	290
STATE TOTALS	588	530	1,193	541	720	408	411	297	645	1,519	1,984	685

*Washington, Kane and Wayne counties, Gambel's quail; all others, California quail.

Table 5. Summary of quail hunter success and distribution of harvest and hunting pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-Days Afield	Birds Bagged	Birds Per Hunter-Day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	5	318	73	0.23	4.02	0.96
Cache	2	343	147	0.43	4.33	1.92
Davis	5	343	147	0.43	4.33	1.92
Morgan**	1	24	49	2.00	0.30	0.64
Rich	0	0	0	0.00	0.00	0.00
Summit**	1	24	0	0.00	0.30	0.00
Weber	2	220	24	0.11	2.78	0.32
REGIONAL TOTALS	16	1,274	441	0.35	16.08	5.76
<u>Central Region</u>						
Juab	1	24	0	0.00	0.30	0.00
Salt Lake	3	147	122	0.83	1.85	1.60
Sanpete	3	343	294	0.86	4.33	3.84
Tooele	2	49	49	1.00	0.61	0.64
Utah	28	2,426	1,421	0.59	30.65	18.58
Wasatch	2	98	49	0.50	1.23	0.64
REGIONAL TOTALS	39	3,088	1,936	0.63	38.99	25.32
<u>Southern Region</u>						
Beaver	0	0	0	0.00	0.00	0.00
Garfield	0	0	0	0.00	0.00	0.00
Iron	0	0	0	0.00	0.00	0.00
Kane	0	0	0	0.00	0.00	0.00
Millard	11	612	588	0.96	7.73	7.69
Piute	1	98	220	2.25	1.23	2.88
Sevier	0	0	0	0.00	0.00	0.00
Washington	23	1,397	3,260	2.33	17.64	42.62
Wayne	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	35	2,108	4,069	1.93	26.62	53.20
<u>Northeastern Region</u>						
Daggett	1	49	24	0.50	0.61	0.32
Duchesne	4	171	318	1.86	2.16	4.16
Uintah	10	563	294	0.52	7.12	3.84
REGIONAL TOTALS	15	784	637	0.81	9.90	8.33
<u>Southeastern Region</u>						
Carbon	1	24	24	1.00	0.30	0.32
Emery	4	392	416	1.06	4.95	5.44
Grand	1	245	122	0.50	3.09	1.60
San Juan	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	6	661	563	0.85	8.34	7.37
Unknown Counties	0	0	0	0.00	0.00	0.00
STATE TOTALS	111	7,918	7,648	0.97	100	100

*Total hunter-trips from questionnaire returns.

**Closed to quail hunting in 1986.

Table 6. Summary of quail bagged per hunter-day by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>							
Box Elder	0.07	0.25	0.50	0.21	0.50	0.00	0.23
Cache	0.00	1.67	1.40	0.00	0.00	1.00	0.43
Davis	0.97	0.53	1.00	0.43	0.45	0.44	0.43
Morgan	0.40	0.00	2.50	0.00	1.00	1.00	2.00
Rich	0.00	0.67	0.00	0.00	0.00	0.00	0.00
Summit	0.00	0.00	0.29	0.00	0.00	0.40	0.00
Weber	0.67	1.11	1.08	0.64	0.71	0.69	0.11
<u>REGIONAL TOTALS</u>	<u>0.59</u>	<u>0.79</u>	<u>0.94</u>	<u>0.40</u>	<u>0.54</u>	<u>0.50</u>	<u>0.35</u>
<u>Central Region</u>							
Juab	0.00	1.60	2.00	0.33	0.00	2.00	0.00
Salt Lake	0.88	1.13	1.00	0.32	1.88	0.43	0.83
Sanpete	0.00	0.00	0.75	0.00	1.50	1.00	0.86
Tooele	0.30	0.00	2.00	0.22	1.50	0.33	1.00
Utah	0.84	0.81	0.86	0.82	0.60	0.72	0.59
Wasatch	1.67	0.00	2.67	1.25	0.00	0.00	0.50
<u>REGIONAL TOTALS</u>	<u>0.79</u>	<u>0.86</u>	<u>0.96</u>	<u>0.65</u>	<u>0.85</u>	<u>0.69</u>	<u>0.63</u>
<u>Southern Region</u>							
Beaver	2.00	0.00	0.00	0.00	1.83	0.00	0.00
Garfield	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	0.00	0.00	0.00	1.50	0.00	0.00	0.00
Kane	1.16	0.00	0.00	0.00	0.00	0.00	0.00
Millard	1.16	1.97	1.33	1.00	0.63	1.55	0.96
Piute	2.00	0.00	0.00	0.50	0.00	1.00	2.25
Sevier	2.00	0.14	0.00	0.86	1.80	0.00	0.00
Washington	1.99	1.19	1.53	1.98	1.23	1.27	2.33
Wayne	1.20	1.00	3.00	0.00	0.00	0.00	0.00
<u>REGIONAL TOTALS</u>	<u>1.77</u>	<u>1.27</u>	<u>1.50</u>	<u>1.64</u>	<u>1.21</u>	<u>1.15</u>	<u>1.93</u>
<u>Northeastern Region</u>							
Daggett	0.00	0.00	4.50	0.00	0.00	0.00	0.50
Duchesne	1.07	1.05	1.46	0.08	0.70	0.44	1.86
Uintah	0.74	0.64	0.70	0.72	1.00	0.70	0.52
<u>REGIONAL TOTALS</u>	<u>0.84</u>	<u>0.83</u>	<u>1.11</u>	<u>0.54</u>	<u>0.86</u>	<u>0.63</u>	<u>0.81</u>
<u>Southeastern Region</u>							
Carbon	0.69	0.89	0.40	0.00	1.00	0.00	1.00
Emery	0.75	0.67	0.76	0.00	0.31	1.14	1.06
Grand	0.00	0.00	0.00	0.00	0.00	0.00	0.50
San Juan	3.00	1.33	0.00	0.00	0.00	0.00	0.00
<u>REGIONAL TOTALS</u>	<u>0.76</u>	<u>0.85</u>	<u>0.67</u>	<u>0.00</u>	<u>0.62</u>	<u>0.29</u>	<u>0.85</u>
Unknown counties	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>STATE TOTALS</u>	<u>1.06</u>	<u>0.93</u>	<u>1.10</u>	<u>0.85</u>	<u>0.88</u>	<u>0.72</u>	<u>0.97</u>

Table 7. Percentage distribution of quail harvest by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
Northern Region							
Box Elder	0.31	0.62	1.54	0.98	0.30	0.00	0.96
Cache	0.00	1.55	0.83	0.00	0.00	0.44	1.92
Davis	5.47	2.95	9.03	6.11	5.16	3.59	1.92
Morgan	0.31	0.00	0.59	0.00	0.60	0.90	0.64
Rich	0.00	0.31	0.00	0.00	0.00	0.00	0.00
Summit	0.00	0.00	0.23	0.00	0.00	0.90	0.00
Weber	2.50	9.47	4.87	2.19	6.07	4.94	0.32
REGIONAL TOTALS	8.59	14.91	17.09	9.29	12.15	10.80	5.76
Central Region							
Juab	0.00	1.24	0.23	0.48	0.00	0.90	0.00
Salt Lake	3.59	5.59	4.16	1.46	9.11	2.69	1.60
Sanpete	0.00	0.00	0.71	0.00	0.91	0.44	3.84
Tooele	0.47	0.00	1.42	0.98	0.91	0.90	0.64
Utah	20.16	22.98	13.66	18.33	12.45	34.24	18.58
Wasatch	0.78	0.00	0.94	1.22	0.00	0.00	0.64
REGIONAL TOTALS	25.00	29.81	21.12	22.49	23.40	39.18	25.32
Southern Region							
Beaver	0.31	0.00	0.00	0.00	3.33	0.00	0.00
Garfield	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	0.00	0.00	0.00	0.72	0.00	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	7.81	9.16	1.89	7.82	1.52	7.65	7.69
Piute	0.31	0.00	0.00	0.48	0.00	0.44	2.88
Sevier	0.16	0.16	0.00	1.46	2.72	0.00	0.00
Washington	40.78	20.81	24.37	46.45	35.56	29.27	42.62
Wayne	0.94	0.47	0.71	0.00	0.00	0.00	0.00
REGIONAL TOTALS	50.31	30.59	26.97	56.97	43.16	37.39	53.20
Northeastern Region							
Daggett	0.00	0.00	4.28	0.00	0.00	0.00	0.32
Duchesne	4.53	10.09	16.16	0.48	5.77	1.79	4.16
Uintah	7.03	7.30	12.24	10.76	9.11	7.19	3.84
REGIONAL TOTALS	11.56	17.39	32.68	11.24	14.89	9.00	8.33
Southeastern Region							
Carbon	3.13	3.88	0.23	0.00	4.85	0.00	0.32
Emery	0.94	2.17	1.89	0.00	1.52	3.59	5.44
Grand	0.00	0.00	0.00	0.00	0.00	0.00	1.60
San Juan	0.47	1.24	1.08	0.00	0.00	0.00	0.00
REGIONAL TOTALS	4.53	7.30	2.10	0.00	6.38	3.59	7.37
Unknown counties	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100

Table 8. Percentage distribution of quail hunting pressure by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>							
Box Elder	4.46	2.32	3.39	3.93	0.53	1.94	4.02
Cache	0.17	0.87	0.64	0.61	1.06	0.32	4.33
Davis	5.95	5.22	9.93	12.00	10.18	5.85	4.33
Morgan	0.83	0.29	0.25	0.41	0.53	0.65	0.30
Rich	0.00	0.43	0.00	0.00	0.00	0.00	0.00
Summit	0.00	0.43	0.91	0.00	0.00	1.63	0.30
Weber	3.97	7.97	4.96	2.90	7.51	5.20	2.78
REGIONAL TOTALS	15.37	17.54	20.08	19.87	19.83	15.63	16.08
<u>Central Region</u>							
Juab	1.65	0.72	0.13	1.23	0.26	0.3	0.30
Salt Lake	4.30	4.64	4.57	3.93	4.28	4.55	1.85
Sanpete	0.00	0.00	1.04	0.61	0.53	0.32	4.33
Tooele	1.65	0.58	0.78	3.72	0.53	1.94	0.61
Utah	25.45	26.52	13.37	19.04	18.23	34.19	30.65
Wasatch	0.50	0.00	0.39	0.83	0.53	0.00	1.23
REGIONAL TOTALS	33.55	32.46	24.28	29.39	24.39	41.37	38.99
<u>Southern Region</u>							
Beaver	0.17	0.14	0.00	0.00	1.60	1.63	0.00
Garfield	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	0.00	0.14	0.00	0.41	0.80	0.65	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	7.11	4.35	1.56	6.62	2.14	3.57	7.73
Piute	0.17	0.00	0.00	0.83	0.00	0.32	1.23
Sevier	0.17	1.01	0.39	1.45	1.34	0.65	0.00
Washington	21.65	16.38	17.51	19.87	25.47	16.60	17.64
Wayne	0.83	0.43	0.25	0.20	0.00	0.00	0.00
REGIONAL TOTALS	30.08	22.46	19.72	29.39	31.36	23.44	26.62
<u>Northeastern Region</u>							
Daggett	0.00	0.00	1.56	0.00	0.00	0.00	0.61
Duchesne	4.46	8.99	12.14	4.97	7.23	2.92	2.16
Uintah	10.08	10.58	19.20	12.63	8.03	7.48	7.12
REGIONAL TOTALS	14.55	19.57	32.90	17.59	15.27	10.42	9.90
<u>Southeastern Region</u>							
Carbon	4.79	4.06	0.64	2.90	4.28	6.83	0.30
Emery	1.32	3.04	2.74	0.61	4.28	2.28	4.95
Grand	0.00	0.00	0.13	0.20	0.26	0.00	3.09
San Juan	0.17	0.87	0.00	0.00	0.26	0.00	0.00
REGIONAL TOTALS	6.28	7.97	3.51	3.72	9.11	9.11	8.34
Unknown counties	0.00	0.17	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100

Table 9. Statewide summary of quail harvest statistics, 1951-1987.

Year	Total Hunters	Total Harvest	Hunter-days Afield	Quail Per Hunter-day	Quail Per Hunter
1951	3,856	6,362	7,069	0.90	1.65
1952	2,694	6,105	5,500	1.11	2.27
1953	2,676	5,753	4,494	1.28	2.15
1954	3,855	7,479	8,696	0.86	1.94
1955	--	--	--	0.17	2.10
1956	--	--	--	--	2.26
1957	--	--	--	--	1.85
1958	--	--	--	--	3.73
1959	8,554	22,854	18,174	1.26	2.67
1960	7,117	21,272	13,971	1.52	2.99
1961	9,980	27,362	25,746	1.06	2.74
1962	6,462	18,710	14,660	1.27	2.89
1963	8,059	28,088	16,383	1.71	3.49
1964	8,951	31,189	20,510	1.52	3.48
1965	6,163	17,532	16,528	1.06	2.45
1966	6,465	22,771	16,720	1.36	3.52
1967	8,455	26,187	23,806	1.10	3.10
1968	9,302	28,469	23,132	1.23	3.06
1969	9,160	26,119	22,529	1.16	2.85
1970	6,141	18,896	16,452	1.15	3.08
1971	8,039	21,082	21,595	0.98	2.62
1972	7,380	16,504	21,779	0.76	2.24
1973	5,654	14,324	17,777	0.81	2.53
1974	6,097	12,005	14,702	0.82	1.97
1975	6,397	16,903	16,805	1.01	2.64
1976	5,215	14,454	13,261	1.09	2.77
1977	4,446	9,496	9,646	0.98	2.14
1978	5,924	15,491	13,649	1.13	2.61
1979	5,632	15,821	13,550	1.17	2.81
1980	4,156	11,690	10,400	1.12	2.81
1981	4,946	13,586	12,843	1.06	2.75
1982	4,368	9,870	10,575	0.93	2.26
1983	4,012	11,248	10,232	1.10	2.81
1984	3,654	8,303	9,805	0.85	2.27
1985	3,065	7,051	7,994	0.88	2.30
1986	2,432	4,574	6,326	0.72	1.88
1987	2,549	7,648	7,918	0.97	3.00
<hr/>					
TOTALS (1959-87)	178,775	499,483	447,468	(31.78)	(78.73)
<hr/>					
AVERAGES (1959-86)	6,294	17,566	15,698	1.12	2.79
<hr/>					

Table 10. Gambel's quail long period waterhole count trend on the west slope of the Beaver Dam Mountains, Washington County, 1975-87. These counts have been conducted since 1962.

Index	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Total young	145	61	--	67	253	72	37	85	114	166	47	163	348
Total adults	20	53	--	29	77	52	25	33	14	86	11	48	139
Total quail	165	114	17	86	330	124	62	118	128	252	58	211	487
Young per 100 adults	725	115	--	353	329	138	148	258	814	193	427	340	250

HUNGARIAN PARTRIDGE

SUMMARY

Harvest data for 1986 indicated that 1987 breeding population densities were much improved. Limited brood data was collected in Box Elder county only and indicated an increasing Hun population.

The 1987 hunt indicated increased hunting pressure on Huns when compared to 1986. The number of Huns harvested again increased significantly in 1987. The hunter-days afield increased 85 percent from 1986. Total hunters, days afield and harvest remained significantly below the long-term average. However, hunter success was 27 percent above the long-term average.

We expect continued improvement in Hungarian partridge populations in Box Elder County due to the large quantity of agricultural land set aside in the Conservation Reserve Program.



Brood Counts

Results of the annual random brood counts for 1987 are shown in Table 1 of this section. Long-term trends of young-adult ratios, mean brood size and Huns observed per 100 hours are shown in Tables 2-4. Results of the survey for 1987 compared to 1986 and the previous 10-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total Huns observed	174	+544	+129
Young per 100 adults	569	+29	+7
Mean brood size	11.00	0	+5
Huns observed per 100 hours	435	+625	+172
Total hours effort	40	-11	-49

Harvest data for 1986 still indicated a significantly below average breeding population for 1987 but populations are higher than in 1986.

The hours of effort decreased 11 percent from 1986, and 49 percent below average. Hungarian partridge were observed during the summer inventory counts in Box Elder county only.

Harvest

Hunter Questionnaire

Results of the annual hunter questionnaire for 1987 are shown in Table 5. Long-term trends of Huns bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 6-8 and total statewide harvest statistics in Table 9. The 1987 season compared to 1986 and the previous 28-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Hungarian partridge hunters	2,010	+60	-46
Hungarian partridge harvest	5,711	+251	-29
Hunter-days afield	5,246	+85	-44
Huns per hunter-day	1.09	+91	+27
Huns per hunter	2.53	+95	+17

Hungarian partridge hunting pressure increased 85 percent, while success increased 91 percent during 1987 as compared to 1986. Nevertheless, harvest was 29 percent below the 28-year average.

Field Bag Checks

Results of the survey for 1987 are shown in Table 10. Hunter success trends determined via this method are shown in Table 11. Indices obtained for 1987 compared to 1986 and the previous 10-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total hunters checked	102	-75	-18
Total hours hunted	429	-84	+2
Huns per hunter (complete hunts)	1.69	+956	+177
Huns bagged per 100 hours	31	+1,450	+94
Average hours per hunter-day (complete hunts)	4.2	-34	0
Hours hunted per Hun bagged (complete hunts)	7.0	-83	-53

Field bag check data submitted in 1987 was for Box Elder County only, and was collected at the game checking station at Snowville, Utah. Many of these hunters are hunting sagegrouse, but Huns are often found in the same areas.

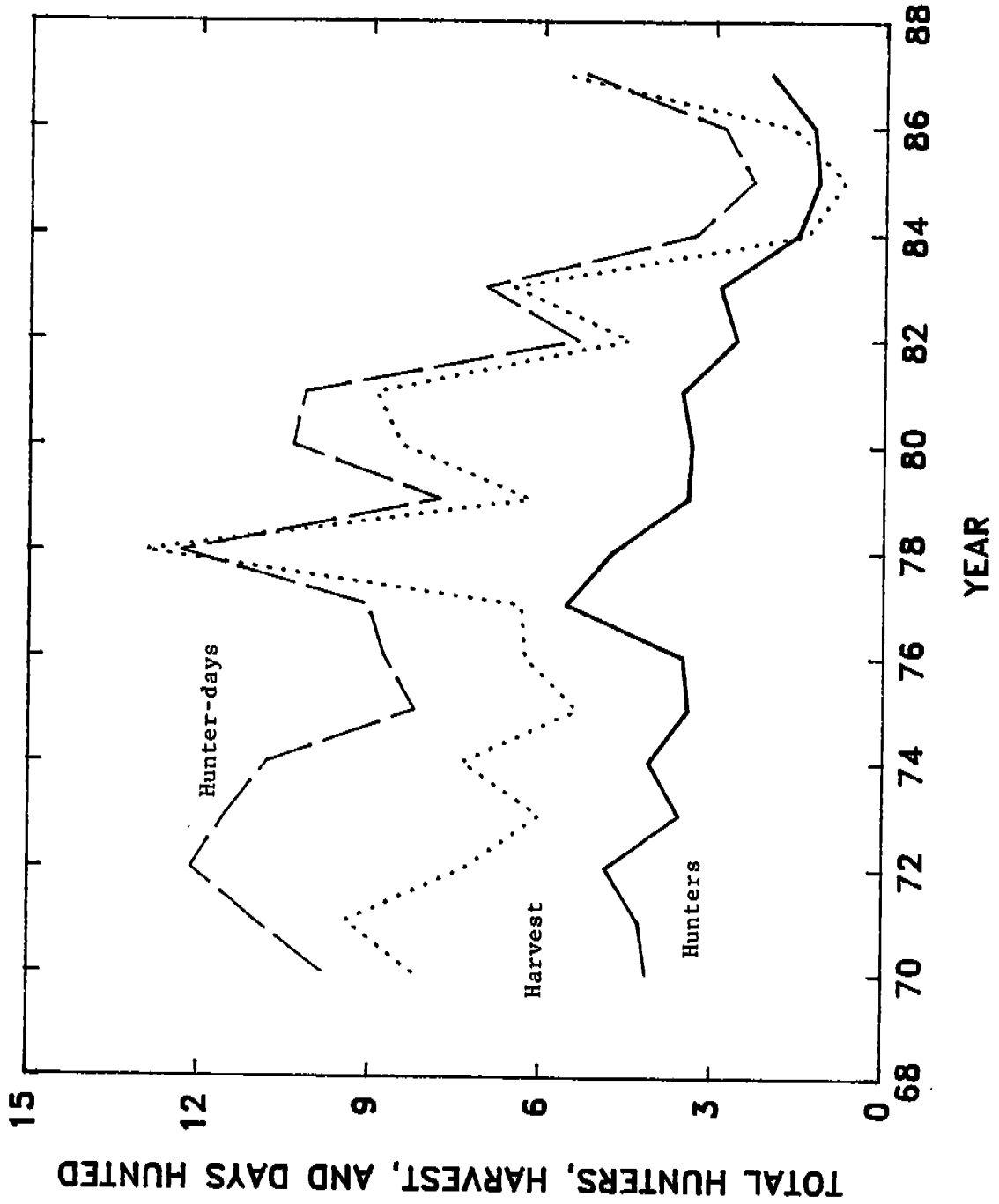


Figure 1. Statewide trend of Hungarian partridge harvest statistics.

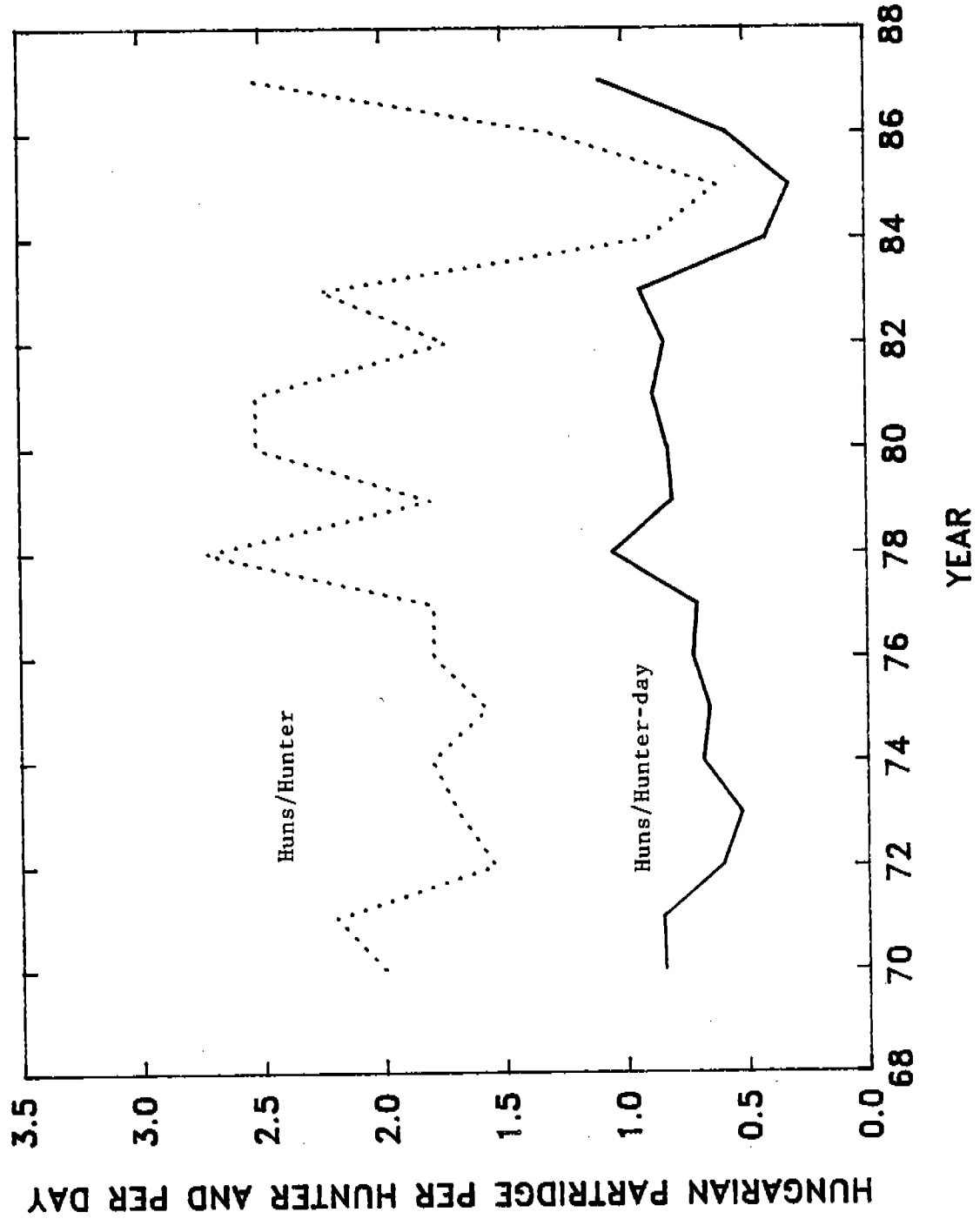


Figure 2. Statewide trend of Hungarian partridge hunter success rates, 1968-88.

Table 1. Hungarian partridge summer inventory summary, 1987.

Region and County	Distinct Broods		Mean Brood	Mixed Yng & Adults		Total Adults w/o Yng	Total Yng	Total Young/100 Ad	Veh. Miles	Hours of Effort		Birds/100 Hr				
	# Ad	Yng		Ad	Yng					Veh.	Hours		Walk			
<u>Northern Region</u>																
Box Elder	8	16	95	11.88	10	53	0	26	148	569	185	16	15	0	31	561
Cache	0	0	0	--	0	0	0	--	--	--	115	9	0	0	9	--
Davis	0	0	0	--	0	0	0	--	--	--	--	--	--	--	--	--
Morgan	0	0	0	--	0	0	0	--	--	--	--	--	--	--	--	--
Rich	0	0	0	--	0	0	0	--	--	--	--	--	--	--	--	--
Summit	0	0	0	--	0	0	0	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	8	16	95	11.88	10	53	0	26	148	569	300	25	15	0	40	435
<u>Central Region</u>																
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<u>Southern Region</u>																
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<u>Northeastern Region</u>																
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<u>Southeastern Region</u>																
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	8	16	95	11.88	10	53	0	26	148	569	300	25	15	0	40	435

Table 2. Trend of Hungarian partridge young per 100 adults, 1977-87.

Region and County	Year										Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	
<u>Northern Region</u>											
Box Elder	467	580	840	688	671	409	400	--	--	45	569
Cache	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	700	300	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	467	580	840	691	600	409	400	--	--	450	569
<u>Central Region</u>											
Juab	--	--	500	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Snapete	173	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	0	--	--	--	--	--	--	--
Wasatch	20	--	--	--	--	--	--	--	400	--	--
REGIONAL TOTALS	173	--	500	--	--	--	--	--	400	--	358
<u>Southern Region</u>											
Beaver											
Garfield											
Iron											
Kane											
Millard											
Piute											
Sevier											
Washington											
Wayne											
REGIONAL TOTALS											
<u>Northeastern Region</u>											
Daggett											
Duchesne											
Uintah											
REGIONAL TOTALS											
<u>Southeastern Region</u>											
Carbon											
Emery											
Grand											
San Juan											
REGIONAL TOTALS											
STATE TOTALS	369	580	780	663	600	409	400	--	440	569	530

Table 3. Trend of Hungarian partridge mean brood size from 1977-87.

Region and County	Year										Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	
Northern Region											
Box Elder	10.77	11.60	8.40	11.00	12.00	11.25	10.67	--	--	18.00	11.88
Cache	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	7.00	6.00	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	10.77	11.60	8.40	9.50	10.80	11.25	10.67	--	--	18.00	11.88
Central Region											
Juab	--	--	5.00	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	4.00	--	--
REGIONAL TOTALS	--	--	5.00	--	--	--	--	--	4.00	--	4.50
Southern Region											
Beaver											
Garfield											
Iron											
Kane											
Millard											
Piute											
Sevier											
Washington											
Wayne											
REGIONAL TOTALS											
Northeastern Region											
Daggett											
Duchesne											
Uintah											
REGIONAL TOTALS											
Southeastern Region											
Carbon											
Emery											
Grand											
San Juan											
REGIONAL TOTALS											
STATE TOTALS	10.77	11.60	7.83	9.50	10.80	11.25	10.67	--	--	11.00	11.88
											10.43

Table 4. Trend of Hungarian partridge observed per 100 hours, 1977-87.

Region and County	Year										Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	
Northern Region											
Box Elder	109	203	235	154	570	144	67	--	0	96	561
Cache	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	109	151	174	158	639	144	67	--	0	50	435
Central Region											
Juab	--	--	600	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Sanpete	820	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	0	33	--	--	--	--	--	500	--
REGIONAL TOTALS	820	--	200	17	--	--	--	--	--	500	384
Southern Region											
Beaver											
Garfield											
Iron											
Kane											
Millard											
Piute											
Sevier											
Washington											
Wayne											
REGIONAL TOTALS											
Northeastern Region											
Daggett											
Duchesne											
Uintah											
REGIONAL TOTALS											
Southeastern Region											
Carbon											
Emery											
Grand											
San Juan											
REGIONAL TOTALS	131	151	177	144	565	144	67	--	0	60	435
STATE TOTALS											160

Table 5. Summary of Hungarian partridge hunter success and distribution of harvest and hunting pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
Northern Region						
Box Elder	66	3,579	4,584	1.28	68.22	80.25
Cache	12	539	563	1.05	10.28	9.87
Davis	1	73	0	0.00	1.40	0.00
Morgan	2	73	49	.67	1.40	.85
Rich	1	49	73	1.50	.93	1.28
Summit	1	24	49	2.00	.46	.85
Weber	3	98	122	1.25	1.86	2.14
REGIONAL TOTALS	86	4,437	5,442	1.23	84.57	95.27
Central Region						
Juab	2	245	73	.30	4.67	1.28
Salt Lake	0	0	0	0.00	0.00	0.00
Sanpete	1	24	0	0.00	0.46	0.00
Tooele	2	147	0	0.00	2.80	0.00
Utah	2	73	24	.33	1.40	.42
Wasatch	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	7	490	98	.20	9.34	1.71
Southern Region						
Beaver	0	0	0	0.00	0.00	0.00
Garfield	0	0	0	0.00	0.00	0.00
Iron	0	0	0	0.00	0.00	0.00
Kane	0	0	0	0.00	0.00	0.00
Millard	0	0	0	0.00	0.00	0.00
Piute	0	0	0	0.00	0.00	0.00
Sevier	2	49	98	2.00	0.93	1.71
Washington	1	24	0	0.00	0.46	0.00
Wayne	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	3	73	98	1.33	1.39	1.71
Northeastern Region						
Daggett	0	0	0	0.00	0.00	0.00
Duchesne	0	0	0	0.00	0.00	0.00
Uintah	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	0	0	0	0.00	0.00	0.00
Southeastern Region						
Carbon	0	0	0	0.00	0.00	0.00
Emery	0	0	0	0.00	0.00	0.00
Grand	0	0	0	0.00	0.00	0.00
San Jaun	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	0	0	0	0.00	0.00	0.00
Unknown Counties	1	245	73	0.30	4.67	1.28
STATE TOTALS	97	5,246	5,711	1.09	100	100

*Total hunter-trips from questionnaire returns.

Table 6. Summary of Hungarian partridge bagged per hunter-day by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>							
Box Elder	1.31	0.83	0.99	0.44	0.25	0.60	1.28
Cache	0.60	1.03	0.80	0.15	2.00	0.00	1.05
Davis	0.00	5.00	0.29	0.00	0.00	0.00	0.00
Morgan	0.50	1.40	0.75	0.00	0.00	0.00	0.67
Rich	0.50	2.00	0.94	0.00	0.00	0.00	1.50
Summit	1.50	0.00	0.00	0.00	0.00	0.00	2.00
Weber	0.00	1.00	1.36	1.00	0.00	0.00	1.25
REGIONAL TOTALS	1.10	0.89	0.93	0.41	0.26	0.59	1.23
<u>Central Region</u>							
Juab	1.20	0.00	0.00	0.00	0.00	0.00	0.30
Salt Lake	0.06	0.00	0.00	0.50	0.50	0.00	0.00
Sanpete	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tooele	0.09	0.00	1.91	0.00	0.46	0.00	0.00
Utah	0.25	0.00	0.13	2.00	0.00	0.00	0.33
Wasatch	0.40	0.00	1.77	1.00	1.50	0.00	0.00
REGIONAL TOTALS	0.18	0.00	0.96	0.55	0.48	0.00	0.20
<u>Southern Region</u>							
Beaver	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Garfield	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	0.00	0.00	1.00	0.00	0.00	2.00	0.00
Piute	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sevier	0.00	0.00	0.50	0.00	0.00	0.20	2.00
Washington	0.00	0.13	2.00	0.00	0.00	0.00	0.00
Wasatch	0.40	0.00	1.77	1.00	0.00	0.00	0.00
REGIONAL TOTALS	0.18	0.00	0.96	0.55	0.00	0.78	1.33
<u>Northeastern Region</u>							
Daggett	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Duchesne	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Uintah	1.00	1.00	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	1.00	1.33	0.00	0.00	0.50	0.00	0.00
<u>Southeastern Region</u>							
Carbon	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emery	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Grand	0.00	0.00	0.00	0.00	0.00	0.00	0.00
San Jaun	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown Counties	0.00	0.00	0.00	0.00	0.00	0.00	0.30
STATE TOTALS	0.88	0.83	0.93	0.41	0.31	0.57	1.09

Table 7. Percentage distribution of Hungarian partridge harvest by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>							
Box Elder	78.81	74.66	67.61	79.04	60.34	91.14	80.25
Cache	13.81	11.64	14.39	2.94	5.94	0.00	9.87
Davis	0.00	1.71	0.40	0.00	0.00	0.00	0.00
Morgan	0.71	7.19	1.23	0.00	0.00	0.00	0.85
Rich	0.48	1.37	3.27	0.00	0.00	0.00	1.28
Summit	0.71	0.00	0.00	0.00	0.00	0.00	0.85
Weber	0.00	1.71	3.07	8.90	0.00	0.00	2.14
REGIONAL TOTALS	94.52	98.29	89.97	91.03	66.62	91.14	95.27
<u>Central Region</u>							
Juab	1.43	0.00	0.00	0.00	0.00	0.00	1.28
Salt Lake	0.24	0.00	0.00	1.47	2.97	0.00	0.00
Sanpete	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tooele	1.43	0.00	4.30	0.00	18.10	0.00	0.00
Utah	1.19	0.00	0.40	5.96	0.00	0.00	0.42
Wasatch	0.48	0.00	4.72	1.47	9.05	0.00	0.00
REGIONAL TOTALS	4.76	0.00	9.42	8.90	30.27	0.00	1.71
<u>Southern Region</u>							
Beaver	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Garfield	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	0.00	0.34	0.00	0.00	0.00	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	0.00	0.00	0.40	0.00	0.00	7.59	0.00
Piute	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sevier	0.00	0.00	0.20	0.00	0.00	1.27	1.71
Washington	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wayne	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	0.00	0.34	0.60	0.00	0.00	8.86	1.71
<u>Northeastern Region</u>							
Daggett	0.00	0.00	0.00	0.00	2.97	0.00	0.00
Duchesne	0.24	0.00	0.00	0.00	0.00	0.00	0.00
Uintah	0.24	1.37	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	0.48	1.37	0.00	0.00	2.97	0.00	0.00
<u>Southeastern Region</u>							
Carbon	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emery	0.24	0.00	0.00	0.00	0.00	0.00	0.00
Grand	0.00	0.00	0.00	0.00	0.00	0.00	0.00
San Juan	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	0.24	0.00	0.00	0.00	0.00	0.00	0.00
Unknown counties	0.00	0.00	0.00	0.00	0.00	0.00	1.28
STATE TOTALS	100	100	100	100	100	100	100

Table 8. Percentage distribution of Hungarian partridge hunting pressure by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
Northern Region							
Box Elder	52.72	74.65	63.43	73.62	74.98	87.68	68.22
Cache	20.08	9.40	16.80	7.95	0.91	0.72	10.28
Davis	0.21	0.28	1.33	1.81	0.00	0.00	1.40
Morgan	1.26	4.27	1.51	3.66	1.82	0.00	1.40
Rich	0.84	0.57	3.24	0.60	0.00	0.72	0.93
Summit	0.42	1.14	1.14	0.00	0.00	0.00	0.46
Weber	0.21	1.42	2.10	3.66	0.00	0.00	1.86
REGIONAL TOTALS	75.75	91.75	89.56	91.39	77.79	89.13	84.57
Central Region							
Juab	1.05	0.00	1.14	0.00	0.00	0.72	4.67
Salt Lake	3.35	0.28	0.00	1.21	1.82	0.00	0.00
Sanpete	0.00	0.00	0.37	0.00	0.91	0.72	0.46
Tooele	13.60	3.99	2.10	3.66	12.01	0.72	2.80
Utah	4.18	1.99	3.04	1.21	2.77	1.44	1.40
Wasatch	1.05	0.85	2.47	0.60	1.82	0.00	0.00
REGIONAL TOTALS	23.22	7.12	9.13	6.74	19.45	3.62	9.34
Southern Region							
Beaver	0.00	0.00	0.19	1.21	0.00	0.72	0.00
Garfield	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron	0.00	0.28	0.00	0.00	0.00	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	0.00	0.00	0.37	0.00	0.00	2.17	0.00
Piute	0.00	0.00	0.00	0.16	0.00	0.00	0.00
Sevier	0.00	0.00	0.37	0.00	0.00	3.62	0.93
Washington	0.00	0.00	0.00	0.00	0.00	0.00	0.46
Wayne	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	0.00	0.28	0.93	1.21	0.00	6.52	1.39
Northeastern Region							
Daggett	0.00	0.28	0.00	0.00	0.91	0.00	0.00
Duchesne	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Uintah	0.21	0.57	0.00	0.60	0.91	0.72	0.00
REGIONAL TOTALS	0.42	0.85	0.00	0.60	1.82	0.72	0.00
Southeastern Region							
Carbon	0.00	0.00	0.19	0.00	0.00	0.00	0.00
Emery	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Grand	0.00	0.00	0.00	0.00	0.91	0.00	0.00
San Juan	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	0.21	0.00	0.19	0.00	0.91	0.00	0.00
Unknown counties	0.42	0.00	0.19	0.00	0.00	0.00	4.67
STATE TOTALS	100	100	100	100	100	100	100

Table 9. Statewide summary of Hungarian partridge harvest statistics, 1955-87.

Year	Total Hunters	Total Harvest	Hunter-days Afield	Huns Per Hunter-day	Huns Per Hunter
1955	--	--	--	--	0.39
1956	--	--	--	--	0.89
1957	--	--	--	--	0.45
1958	--	--	--	--	1.34
1959	1,846	1,820	3,354	0.54	0.99
1960	2,847	4,877	4,929	0.99	1.71
1961	3,205	3,648	6,645	0.54	1.13
1962	3,440	8,970	9,153	0.98	2.61
1963	4,676	13,343	13,291	1.00	2.85
1964	4,249	11,812	9,688	1.22	2.78
1965	4,498	12,183	11,798	1.03	2.71
1966	4,549	15,348	11,473	1.34	3.37
1967	6,321	16,049	15,105	1.06	2.54
1968	6,935	17,089	16,674	1.02	2.46
1969	5,591	11,966	15,515	0.77	2.14
1970	4,128	8,236	9,818	0.84	2.00
1971	4,276	9,407	11,011	0.85	2.20
1972	4,754	7,335	12,135	0.60	1.54
1973	3,566	6,014	11,516	0.52	1.69
1974	4,103	7,389	10,789	0.68	1.80
1975	3,409	5,358	8,216	0.65	1.57
1976	3,517	6,287	8,753	0.72	1.79
1977	5,557	6,360	9,058	0.70	1.79
1978	4,743	12,969	12,328	1.05	2.73
1979	3,435	6,200	7,787	0.80	1.80
1980	3,359	8,466	10,366	0.82	2.52
1981	3,545	8,916	10,147	0.88	2.52
1982	2,590	4,475	5,379	0.83	1.73
1983	2,889	6,506	6,998	0.93	2.25
1984	1,523	1,360	3,309	0.41	0.89
1985	1,157	707	2,314	0.31	0.61
1986	1,257	1,627	2,843	0.57	1.30
1987	2,010	5,711	5,246	1.09	2.53
TOTAL (1959-87)	105,975	230,428	265,638	(23.74)	(58.55)
AVERAGES (1959-86)	3,713	8,026	9,300	0.86	2.16

Table 10. Hungarian partridge field bag check summary, 1987.

Region and County	ALL HUNTS				COMPLETE HUNTS				
	Total Parties	Total Hunters	Total Hours	Total Birds/100 Hr	Total Complete Hunts	Total Hunters	Total Hours	Total Birds/100 Hr	Birds/Hunter
<u>Northern Region</u>									
Box Elder	38	83	364	112 31	21	36	199	61 31	1.69
Cache	10	19	65	3 5	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	48	102	429	115 27	21	36	199	61 31	1.69
<u>Central Region</u>									
Juab									
Salt Lake									
Sanpete									
Tooele									
Utah									
Wasatch									
REGIONAL TOTALS									
<u>Southern Region</u>									
Beaver									
Garfield									
Iron									
Kane									
Millard									
Piute									
Sevier									
Washington									
Wayne									
REGIONAL TOTALS									
<u>Northeastern Region</u>									
Daggett									
Duchesne									
Uintah									
REGIONAL TOTALS									
<u>Southeastern Region</u>									
Carbon									
Emery									
Grand									
San Juan									
REGIONAL TOTALS									
STATE TOTALS	48	102	429	115 27	21	36	199	61 31	1.69

NO DATA

NOT APPLICABLE

NOT APPLICABLE

NOT APPLICABLE

Table 11. Hungarian partridge hunter success trend determined by field bag checks, 1982-87.

Region and County	1982		1983		1984		1985		1986		1987	
	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter	Birds/ 100 Hr Hunter
<u>Northern Region</u>												
Box Elder	32	1.33	17	0.62	--	--	3	0.16	2	0.16	31	1.69
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	32	1.33	17	0.62	--	--	3	0.16	2	0.16	31	1.69
<u>Central Region</u>												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
<u>Southeastern Region</u>												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	32	1.33	17	0.62	--	--	3	0.16	2	0.16	31	1.69

WILD TURKEY

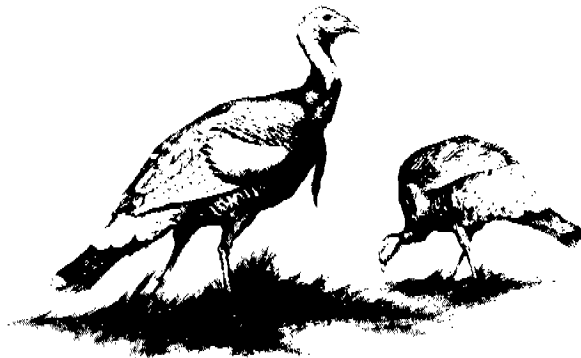
SUMMARY

Turkey populations continue to improve on all units, and the increasing numbers are reflected in reported observations and annual harvest.

Hunter success and turkey observation data for the 1987 spring season indicated that the East Zion area had another year of increasing turkey population. The Boulder Mountains and LaSal Mountains also indicated growing populations. However, the remaining units of the state were closed to hunting. Rio Grande turkeys were released on Pine Valley mountain in 1984, but the population was not considered to be huntable in 1987. A fall turkey hunting season was not held anywhere in 1987.

Spring hunting pressure was up from 1986 and hunter success was up 31 percent. A total of 60 turkeys were harvested in the spring hunt of 1987 compared to 43 taken in 1986. Observations of turkeys remained higher than average in 1987, with most observations again being made on the East Zion area.

Temperatures in southcentral and southeastern Utah were at or above normal February through May, and precipitation was about normal, January through June. This should have improved hatching success, however temperatures were below normal and precipitation was above normal in July and August which may have reduced brood survival.



Harvest

Spring Gobbler Season

Results of the 1987 spring season are shown in Table 1 of this section. The trend of these data by hunting area since the first spring season in 1967 is shown in Table 2. Specific harvest information is listed in Table 3. Statewide summary of fall hunt statistics is in Table 4. The 1987 spring season compared to 1986 and the previous 20-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Permits sold	384	+6	+122
Hunters afield	347	+4	+146
Turkeys harvested	60	+40	+233
Hunter-days afield	1,150	+9	+180
Percent hunter success	17	+31	+31
Turkeys bagged per hunter-day	0.05	+25	+25
Percent of hunters who observed turkeys	57	0	+46

Permit sales and hunters afield increased from 1986 and were well above average. Total harvest increased from 43 in 1986 to 60 in 1987, which is 233 percent above the 20-year average. The proportion of hunters who reported having observed turkeys was 46 percent above average. The East Zion unit again accounted for 43 percent of the hunting pressure based on hunter-days afield.

The trend of spring turkey harvest statistics is shown in Figure 1. All successful hunters reporting claimed to use shotguns in taking turkeys. Six percent of the hunters (13) used bows and 1 percent used muzzleloaders (2). Five turkeys were reported crippled and not recovered. Five of 24 known kills are suspected of being jakes or females. Forty-seven percent of the harvest (14 of 30) occurred on opening weekend, 10 percent the following weekend, 3 percent the following weekend and 20 percent the last 4 days of the hunt.

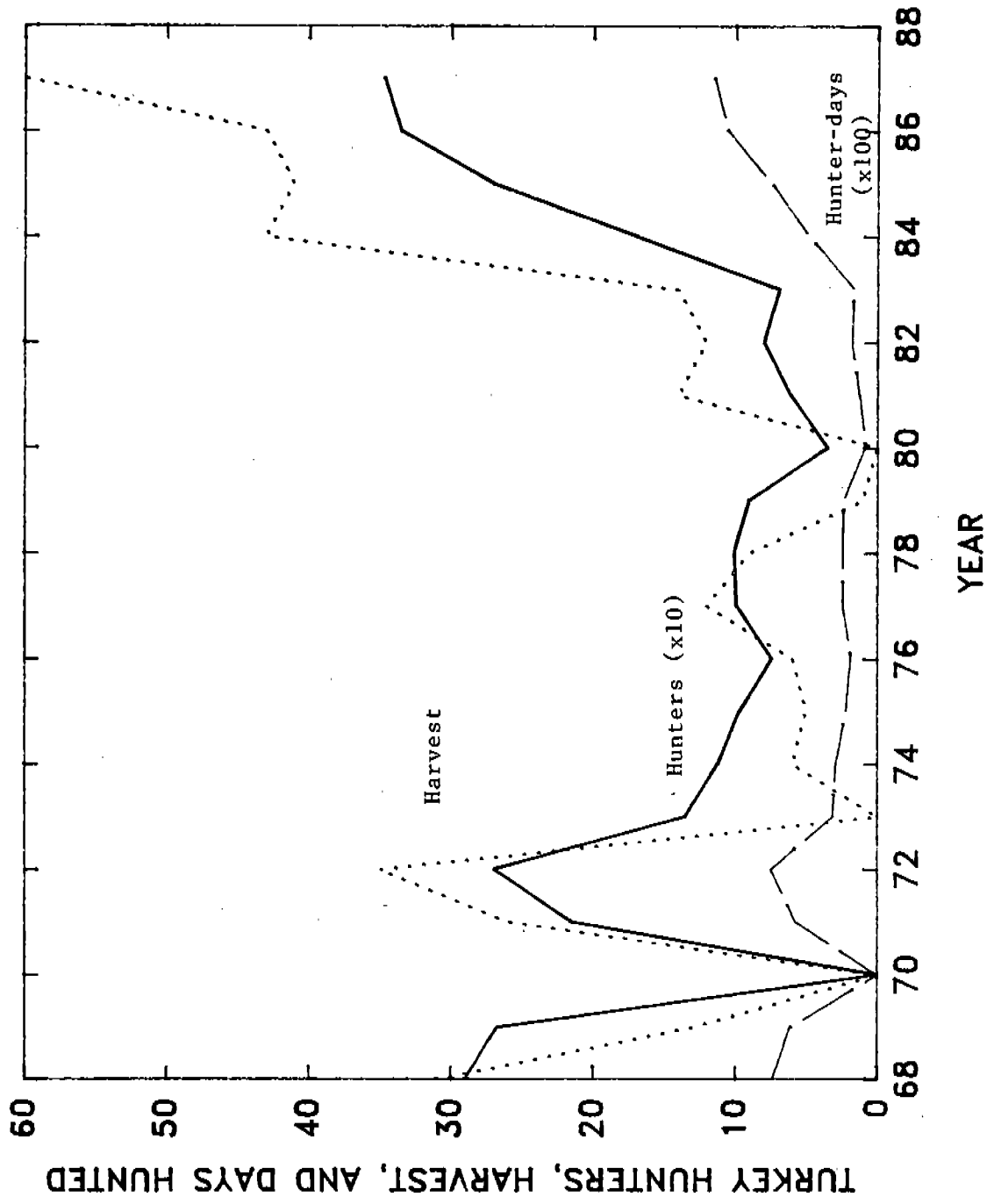


Figure 1. Spring wild turkey hunters, harvest, and days hunted, 1968-1988.

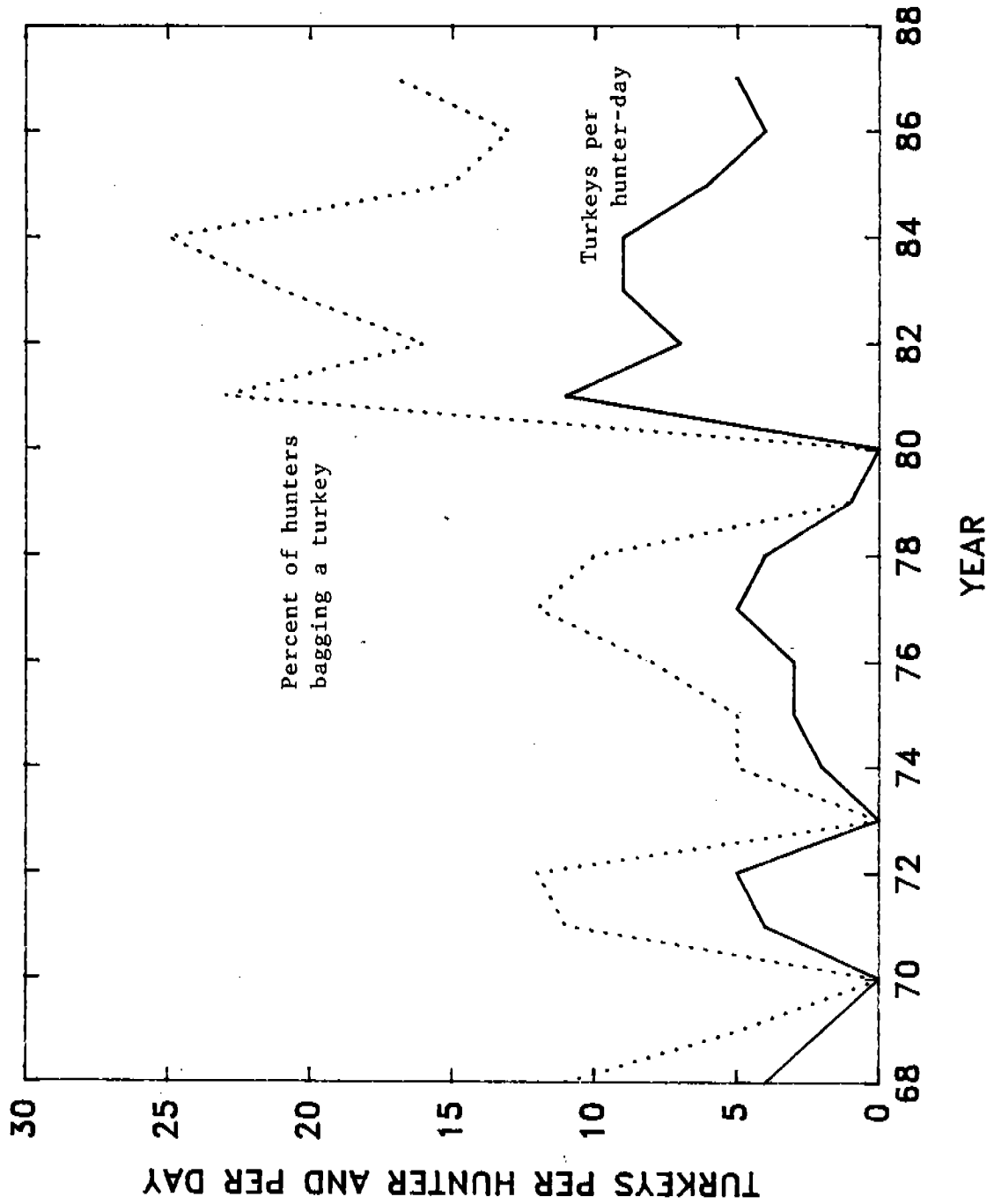


Figure 2. Spring wild turkey hunting success, 1968-1988.

Table 1. Summary of the 1987 spring turkey season.

Data	Elk Ridge		East Zion		Boulder		LaSalle		Beaver		Pine Valley		Mixed Units		STATE TOTALS	
	Rep't	Calc	Rep't	Calc	Rep't	Calc	Rep't	Calc	Rep't	Calc	Rep't	Calc	Rep't	Calc	Rep't	Calc
Permits sold															384	--
No hunts															23	37
Hunters afield	C	95	153	65	105	46	74	C	8	13	11 ^a	13	11 ^a	(12)	215	347
Hunter-days	L	310	500	225	363	135	218	L	42	68	(28)	68	(28)	(36)	713	1,150
Turkeys bagged	O	25	40	7	11	4	6	O	1	2	0	2	0	0	37	60
Percent success	S	26	--	11	--	9	--	S	13	--	--	--	--	--	17	--
Turkeys bagged per hunter-day	E	0.08	--	0.03	--	0.03	--	E	0.02	--	--	--	--	--	0.05	--
Reported crippling loss (loss/100 bagged)	D	12	--	14	--	25	--	D	0	--	0	--	0	--	14	--
Turkeys observed	S	513	--	168	--	96	--	S	14	--	0	--	0	--	791	--
Gobblers	E	164	--	69	--	25	--	E	3	--	0	--	0	--	261	--
Hens	A	286	--	92	--	51	--	A	7	--	0	--	0	--	436	--
Unidentified	S	62	--	11	--	19	--	S	4	--	0	--	0	--	96	--
Number of hunters who saw turkeys	O	70	--	26	--	23	--	O	4	--	0	--	0	--	123	--
Percent of hunters who saw turkeys	N	74	--	40	--	50	--	N	50	--	0	--	0	--	57	--

Projection factor = 384 permits sold/238 questionnaires returned = 1.6134453

() Hunters hunted more than one area; data included in specific area hunted.

^afigures do not sum because one hunter reported hunting the Henry Mountains for 1 day.

Table 2. Summary of turkey harvest statistics for spring gobbler seasons, 1967-87.

Hunting Unit	Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per Hunter-day		Percent of Hunters Observing Turkeys	Total Permits**
		Afield	Afield		Afield	Afield					
EAST ZION	1967	24	59	9	38	0.15	58				
	1968	130	364	16	11	0.04	48				
	1969	77	210	4	6	0.02	35				
	1970				N O S E A S O N						
	1971	106	272	14	12	0.05	38				
	1972	113	321	20	14	0.06	47				
	1973	43	96	0	0	0.00	14				
	1974	34	73	2	7	0.03	23				
	1975	29	42	3	8	0.06	33				
	1976	31	74	5	16	0.05	38				
	1977	47	117	6	13	0.05	48				
	1978	36	80	4	13	0.06	56				
	1979	35	95	1	4	0.01	11				
	1980	35	84	0	0	0.00	17				
	1981	39	94	13	32	0.14	68				
	1982	62	134	11	18	0.08	70				
	1983	48	122	12	25	0.10	68				
	1984	108	313	30	27	0.09	70				
	1985	129	368	24	19	0.07	60				
1986	173	508	31	18	0.06	68					
1987	153	500	40	26	0.08	74					

Table 2. (continued)

Hunting Unit	Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per		Percent of Hunters Observing	Total Permits**
		Afield			Afield			Hunter-day	Turkeys		
BOULDER MOUNTAINS	1967	17		2	43		12	0.05		75	
	1968	134		15	330		10	0.05		33	
	1969	141		6	300		4	0.02		16	
	1970					N O S E A S O N					
	1971	27		1	64		4	0.02		13	
	1972	42		3	107		8	0.03		28	
	1973	22		0	52		0	0.00		6	
	1974	23		0	56		0	0.00		25	
	1975	16		1	34		7	0.04		8	
	1976	12		0	25		0	0.00		10	
	1977	6		0	13		0	0.00		40	
	1978	16		1	31		0	0.00		14	
	1979	5		0	10		0	0.00		0	
	1980					N O S E A S O N					
	1981					N O S E A S O N					
	1982					N O S E A S O N					
	1983	6		1	7		20	0.17		40	
	1984	33		9	85		27	0.11		73	
	1985	73		7	187		10	0.04		46	
1986	123		8	354		7	0.02		44		
1987	105		11	363		7	0.03		34		

Table 2. (continued)

Hunting Unit	Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per		Percent of Hunters Observing Turkeys	Total Permits**
		Afield			Afield	Hunter-day		Hunter-day			
LASAL MOUNTAINS	1967	6	0	0	16	0	0	0.00	33		
	1968	17	0	0	44	0	0	0.00	62		
	1969	39	3	3	102	9	9	0.03	24		
	1970				N O S E A S O N						
	1971	17	1	1	34	6	6	0.03	20		
	1972	50	3	3	129	7	7	0.03	29		
	1973	23	0	0	53	0	0	0.00	16		
	1974	20	0	0	66	0	0	0.00	11		
	1975	11	0	0	30	0	0	0.00	33		
	1976	8	0	0	25	0	0	0.00	14		
	1977	24	4	4	53	15	15	0.07	45		
	1978	32	2	2	78	7	7	0.03	38		
	1979	34	0	0	74	0	0	0.00	7		
	1980				N O S E A S O N						
	1981	18	1	1	31	6	6	0.03	24		
	1982	18	1	1	50	6	6	0.02	35		
	1983	12	1	1	27	10	10	0.10	30		
	1984	24	4	4	70	19	19	0.06	88		
	1985	72	10	10	194	14	14	0.05	42		
1986	51	4	4	192	7	7	0.02	45			
1987	74	6	6	218	9	9	0.03	50			

Table 2. (continued)

Hunting Unit	Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per		Percent of Hunters		Total Permits**	
		Afield			Afield			Hunter-day	Observing	Turkeys	Permits**		
BEAVER MOUNTAINS	1971	27		2	54		8	0.04		39			
	1972	17		2	53		13	0.04		20			
	1973	17		0	34		0	0.00		7			
	1974	1		0	1		0	0.00		0			
	1975	5		0	7		0	0.00		0			
	1976	2		0	8		0	0.00		0			
	1977	4		0	14		0	0.00		0			
	1978	2		0	7		0	0.00		50			
	1979												
	1980												
	1981												
	1982												
	1983												
	1984												
	1985												
	1986												
	1987												

Table 2 (continued)

Hunting Unit	Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per		Percent of Hunters Observing	Total Permits**
		Afield			Afield	Hunter-day		Turkeys	Turkeys		
PINE VALLEY MOUNTAINS	1971	23		4	92	15	0.04	70			
	1972	22		1	52	5	0.02	42			
	1973	17		0	38	0	0.00	7			
	1974	8		1	23	14	0.05	43			
	1975	6		0	12	0	0.00	0			
	1976			0	13	0	0.00	40			
	1977	2		0	7	0	0.00	0			
	1978	0		0	0	0	0.00	0			
	1979	3		0	15	0	0.00	0			
	1980	0		0	0	0	0.00	0			
	1981	2		0	2	0	0.00	0			
	1982	0		0	0	0	0.00	0			
	1983	3		0	5	0	0.00	0			
	1984***			NO SEASON							
	1985***			NO SEASON							
	1986			NO SEASON							
	1987	8		2	68	13	0.02	50			

Table 2 (continued)

Hunting Unit	Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per		Percent of Hunters Observing Turkeys	Total Permits**
		Afield			Afield	Hunter-day					
BLUJE MOUNTAIN-	1974	17		2	34	13		0.07		27	
ELK RIDGE	1975	19		1	62	6		0.02		56	
	1976	11		0	23	0		0.00		33	
	1977	7		1	14	17		0.08		17	
	1978	12		2	39	18		0.06		36	
	1979	8		0	17	0		0.00		0	
	1980				N 0	S E A S O N					
	1981				N 0	S E A S O N					
	1982				N 0	S E A S O N					
	1983				N 0	S E A S O N					
	1984				N 0	S E A S O N					
	1985				N 0	S E A S O N					
	1986				N 0	S E A S O N					
	1987				N 0	S E A S O N					

Table 2 (continued)

Hunting Unit	Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per		Percent of Hunters Observing Turkeys	Total Permits**
		Afield			Afield	Hunter-day		Hunter-day			
MIXED UNITS	1971	15		4	--		15	--		61	
	1972	25		5	89		18	0.05		50	
	1973	12		0	38		0	0.00		0	
	1974	9		0	36		0	0.00		12	
	1975	11		0	32		0	0.00		22	
	1976	4		1	17		25	0.07		100	
	1977	9		1	29		13	0.04		50	
	1978	3		0	11		0	0.00		67	
	1979	6		0	27		0	0.00		20	
	1980	0		0	0		0	0.00		0	
	1981	1		0	2		0	0.00		100	
	1982	0		0	0		0	0.00		0	
	1983	0		0	0		0	0.00		0	
	1984	4		0	15		0	0.00		33	
	1985	4		0	6		0	0.00		67	
	1986	12		0	36		0	0.00		60	
	1987	11		0	28		0	0.00		0	

Table 2 (continued)

Hunting Unit	Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per Hunter-day		Percent of Hunters Observing Turkeys	Total Permits**	
		Afield			Afield							
STATE TOTALS	1968	290		31	738		11	0.04		41	310	
	1969	267		13	612		5	0.02		22	276	
	1970				NO SEASON							
	1971	215		26	576		11	0.04		38	223	
	1972	269		35	751		12	0.05		39	285	
	1973	135		0	311		0	0.00		10	150	
	1974	112		6	289		5	0.02		22	121	
	1975	97		5	219		5	0.03		29	103	
	1976	74		6	185		8	0.03		32	81	
	1977	99		12	248		12	0.05		39	108	
	1978	101		9	246		10	0.04		42	116	
	1979	90		1	237		1	0.01		8	113	
	1980	35		0	84		0	0.00		17	40	
	1981	60		14	129		23	0.11		53	83	
	1982	80		12	184		16	0.07		62	91	
	1983	69		14	161		21	0.09		55	92	
	1984	169		43	482		25	0.09		72	190	
	1985	270		41	747		15	0.06		52	314	
	1986	335		43	1,054		13	0.04		57	362	
	1987	347		60	1,150		17	0.05		57	384	
STATE TOTALS (1967-87)		2,893		382	8,521		--	--		(754)	3,494	
STATE AVERAGES (1967-86)		141		18	410		13	0.04		39	173	

*Based on the number of hunters bagging one or more turkeys.

**Total permits are sold on a statewide basis and not by unit.

***Note the Pine Valley Mountains Unit was closed by emergency action in 1984 and by amendment to the proclamation in 1985 and 1986 to protect Rio Grande turkeys released on the area in February 1984.

Table 3. Date of kill, weapon used (S = shotgun, R = rifle, B = bow), beard and spur length of turkeys harvested during Spring 1987.

Hunting Unit	Date of Kill	Beard Length	Spur Length (Inches)	Weapon
EAST ZION	5/22	9.00	0.75	S
	5/23	8.00	0.875	S
	5/11	9.00	--	S
	5/9	8.00	--	S
	5/9	7.00	--	S
	5/13	9.25	0.75	S
	5/21	2.00	--	S
	5/2	9.50	1.00	S
	5/9	8.50	1.00	S
	5/4	8.00	--	S
	5/3	8.50	--	S
	5/3	4.00	--	S
	5/18	9.50	0.875	S
	5/2	8.50	0.750	S
	5/17	9.00	0.250	S
	5/2	8.00	0.875	S
	--	6.00	--	S
	5/2	9.00	0.50	S
	5/3	7.00	0.25	S
	5/2	--	--	S
	5/2	6.00	1.00	S
5/22	8.00	--	S	
5/24	4.00	0.50	S	
5/19	4.50	1.75	S	
LA SAL	--	2.00	--	S
	--	2.00	--	S
	5/21	3.50	--	S
	5/3	5.00	0.25	S
PINE VALLEY	5/3	7.00	0.875	S
BOULDER	5/3	8.50	0.875	S
	5/2	8.50	0.75	S
	5/21	5.00	0.25	S
	5/21	4.00	0.25	S
	5/2	9.00	1.125	S
	5/3	3.00	0.75	S
	5/24	--	--	S

Table 4. Statewide summary of fall wild turkey harvest statistics, 1963-87.

Year	Permits Sold		Hunters		Hunter-days		Turkeys Bagged	Percent Success**	Turkeys/ Hunter-Day	Crippling Loss/ 100 Bagged	Turkeys Observed	% Hunters Observing Turkeys
	Afield		Afield		Afield							
1963	297		248	--	--	75	30	--	15	--	--	48
1964	229		211	362	362	81	38	0.22	15	1,158		60
1965	214		207	406	406	50	24	0.12	8	730		29
1966*	192		187	471	471	43	23	0.09	7	756		36
1967	146		135	405	405	40	30	0.10	16	748		48
1968*	368		344	883	883	183	38	0.21	15	2,321		54
1969	223		210	549	549	36	11	0.06	19	466		17
1970	197		174	418	418	58	24	0.14	6	564		31
1971	184		174	444	444	60	21	0.14	8	451		28
1972	124		118	303	303	12	7	0.04	10	173		21
1973***	--		--	--	--	--	--	--	--	--	--	--
1974	29		26	79	79	3	12	0.04	33	83		38
1975	58		46	115	115	7	15	0.06	0	57		26
1976	68		56	136	136	15	27	0.11	7	182		32
1977	60		53	133	133	7	15	0.06	0	48		18
1978*	102		88	223	223	7	9	0.03	33	335		38
1979	46		36	71	71	3	9	0.05	0	61		19
1980	43		35	69	69	11	32	0.16	38	127		44
1981	63		55	114	114	12	22	0.11	56	141		32
1982	56		50	136	136	11	23	0.08	10	185		47
1983	61		49	112	112	15	28	0.13	0	303		49
1984	97		86	193	193	28	32	0.14	14	380		49
1985***	--		--	--	--	--	--	--	--	--	--	--
1986***	--		--	--	--	--	--	--	--	--	--	--
1987***	--		--	--	--	--	--	--	--	--	--	--
TOTALS (1963-86)	2,801		2,538	5,486	5,486	746	(470)	0.14	(310)	9,084		(764)

AVERAGES (1963-84)	133	121	261	36	22	0.14	15	433	36
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*Some hunters hunted more than one area or failed to designate areas hunted. This accounts for the difference between totals given above and combined tables of separate units in Tables 5, 6 and 7.
 **During 1968, the Boulder Mountain and East Zion units had two-bird season limits and the LaSal Mountains a one-bird limit; from 1969 through 1972, all areas had a two-bird limit. Hunter success was based on the number of successful hunters rather than total turkeys bagged.
 ***Closed Season.

SHARP-TAILED GROUSE

SUMMARY

The Columbian sharp-tailed grouse is one of four species of grouse native to Utah. Sharptails were formerly abundant in the valley and foothill areas of northern and central Utah. Sharp-tailed grouse habitats were the most attractive areas for agricultural development and grazing. As a result, 'sharp-tail' habitat was directly converted to farmland or was seriously impacted by heavy grazing.

There was no legal harvest of sharp-tailed grouse from 1980 through 1987. In 1987, the number of birds present on active dancing grounds was substantially greater than in recent years (Table 1.). In addition, two grounds (White's Valley and North White's Valley) which had been inactive for several years were active in 1987. Coupled with a large increase in sightings of birds during 1987 upland game seasons in their recently occupied ranges indicates that perhaps sharp-tailed grouse are making a mild recovery. Concurrent with the upswing in sharp-tail populations has been a succession of mild winters. Since the catastrophic winter of 83-84, all winters have been normal or milder than normal. This certainly must be a factor in the population resurgence (Grandison 1988 personal communications).

In Box Elder County, habitat associated with existing populations of sharp-tailed grouse has been relatively unchanged since 1983. While vast acreages have been entered into CRP, it is still too early for beneficial changes to have materialized. The effect of this additional habitat remains to be seen.

Over the last 10 years the population has fluctuated naturally within the limits of existing habitat with 1984 being a bad year and 1978 being a good year.

We have almost no recent data on sharp-tailed grouse populations in the Cache, Weber, and Morgan county areas. By 1984, populations in these marginal areas were at nearly catastrophic low levels. Since that time, we have not recognized any sign of significant recovery. Habitats in all these areas remain marginal. Land use patterns have not shown any sign of reversing the trend of gradual loss of habitat (Grandison 1988 personal communication).

We have been notified by the U.S. Fish and Wildlife Service, Endangered Species Office of their intent to place sharp-tailed grouse in Category 2 status for possible listing on the Endangered Species list. Category 2 comprises taxa for which information now in possession of the Service indicates that proposing to list the species as Endangered or Threatened is possibly appropriate, but for which substantial data are not currently available to biologically support a proposed rule. Further biological research and field study will usually be necessary to ascertain the status of the taxa in this category, and it is likely that some of the taxa will not warrant listing.

Table 1. Summary of sharp-tailed grouse dancing ground counts, 1976-88.

County	No.	Name	Dancing Ground															
			1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988			
Box Elder	1.	West Hills #1 (located 1977)	21	--	--	12	3	12	0	12	0	0	0	0	0	0	0	
	2.	West Hills #2 (located 1977)	7	--	--	3	1	0	0	2	0	18	--	40	33	--	--	
	3.	West Hills #3 (located 1977)	13	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0
	4.	Hunsaker's Field (located 1977)	13	16	3	0	0	0	0	0	0	0	0	0	0	0	0	3
	5.	Whites Valley (located 1977)	12	--	--	0	0	0	6	0	0	2	--	6	7	--	--	--
	6.	North Whites Valley (located 1977)	10	15	--	0	0	0	0	0	0	0	--	18	11	--	--	--
	7.	Pocatello Valley #1 (located 1978)	7	4	1	9	19*	6	2	0	--	3	--	--	3	--	--	--
	8.	Pocatello Valley #2 (located 1978)	25	3	6	10	0	8	3	9	--	20	--	16	--	--	--	--
	9.	Pocatello Valley #3 (located 1978)	4	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--
	10.	Pocatello Valley #4 (located 1978)	6	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--
	11.	Ag. Station						3	0	0	0	0	--	--	--	--	--	--
	12.	Microwave Tower (located 1987)															6	7
Cache	1.	Bankhead Well (relocated 1975)	6	8	7	2	2	0	0	--	--	--	--	--	--	--	--	--
	2.	Baxter Ridge (relocated 1975)	0	0	--	--	3	5	3	--	--	--	--	--	--	--	--	--
	3.	Crow Mtn. #1 (located 1979)			0	7	4	6	3	--	--	--	--	--	0	--	--	0
	4.	Crow Mtn. #2 (located 1979)				6	0	5	0	--	--	--	--	--	0	--	--	0
	5.	High Creek (located 1981)						7	--	--	--	--	--	--	0	--	--	0
Morgan	1.	Cottonwood #1 (located 1975)	9	14	6	3	--	--	--	--	--	--	--	--	--	--	--	--
	2.	Cottonwood #2 (located 1975)	9	6	16	25	--	--	--	--	--	--	--	--	--	--	--	--
	3.	Deep Creek #2				4	--	--	--	--	--	--	--	--	--	--	--	--
Weber	1.	Monastery (located 1969)	10	Active	Active	3	0	0	0	--	--	--	--	--	--	--	--	--
Total grounds counted			5	10	9	15	16	17	15	11	2	11	--	8	12	--	--	--
Total grouse counted			34	104	102	71	24	57	31	28	5	29	--	90	80	--	--	--
Average number of grouse/ground			6.8	10.4	11.3	4.7	1.5	3.4	2.1	2.5	2.5	2.6	--	11.3	6.7	--	--	--

*Counts for Pocatello Valley #1 and #2 were combined.

PTARMIGAN

SUMMARY

The white-tailed ptarmigan (Lagopus leucurus) was introduced into the Uinta Mountains of northern Utah in 1976 with the release of birds captured in Colorado. The initial transplant consisted of 22 paired birds released in June 1976. A second release of 35 mixed young and adults was accomplished in September of that same year.

Surveys on the ptarmigan population continue to document habitat expansion. Two survey techniques are used. A breeding territory survey is conducted from mid- to late June. A brood survey is conducted from mid- to late August. Results of the last 10 years of survey data are located in Tables 1 and 2.

The 1986-87 and 1987-88 winters were relatively mild in northern Utah.

The 1987 spring survey was made in the Flat Top Mountain area for a couple of days in June.

Brood surveys were made in August 1987, on Flat Top Mountain in Henry's Fork, Smith's Fork and Leidy Peak. Seven brood were observed. Average brood size was 3.86 young.

Hunter Success

Forty-five hunters obtained permits to hunt ptarmigan in Utah for the sixth season (Table 3.). An estimated 9 hunters actually pursued ptarmigan and 7 birds were reported killed. Hunter success was 0.89 birds bagged per hunter-day.

Six of the hunters hunted in areas where it was unlikely they would see ptarmigan. These were not included in the total hunters afield. Many permits are obtained by sportsmen who think they might hunt during a fishing or elk hunting trip, but don't seriously plan on the ptarmigan hunt.

Table 1. Summary of white-tailed ptarmigan breeding territories (pairs), 1978-87.

County	Location	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Summit	Lake Blanchard				2						
Duchesne	Painter Basin	10 ²									
Duchesne	Gilbert Basin	2									
Duchesne	Atwood Basin										
Duchesne	Yellowstone River		2								
Summit	Henry's Fork		4								
Summit	Flat Top Mtn.										
Summit	Beaver Creek		3	0	0						
Summit	Smith's Fork			1							
Utintah	Leidy Peak			0 ³				1	0	0	3

¹Three territorial males were yearling birds, the result of successful reproduction by released birds in 1976. Two were spring-released birds and two were fall-released.

²An additional 4 males and 1 female were located. Birds from the June 1976 transplant are well represented in the population while only two September released birds have been located. Recruitment from the 1976 and 1977 nesting seasons was evident in the 1978 population.

³A sighting of ptarmigan was reported by a hunter in October 1979. Division Biologists reported droppings at the base of Leidy in the willow on June 25, 1981.

⁴Excessive snow cover precluded access to trail-heads during the June breeding period.

Table 2. Ptarmigan brood inventory, 1978-87.

Area:	DATE									
	8/13-19/78	8/14-24/79	8/17-29/80	8/18-31/81	8/17-30/82	8/23-30/83	8/26-28/84	8/14-22/85	8/86	8/87
<u>Painter Basin</u>										
n	7	7	7	12	0 ³	2 ⁴	3			
mean brood	4.71	3.29	4.71	3.67		4.50				
young/100 adult hens	413	329	471	314	450					
hens w/o broods	1	0	0	2	0					
adult males	5	5	0	14	0					
<u>Henry's Fork</u>										
n	0	1	0	4	0	0	0		4	3
mean brood		4.00		4.50					3.75	4.00
young/100 adult hens		400		450					3.75	217
hens w/o broods		0		0					0	3
adult males		1		0						
<u>Yellowstone</u>										
n0	0	0	4	4						
mean brood				4.50		4.25				
young/100 adult hens				450						
hens w/o broods				0						
adult males				0						
<u>Smith's Fork</u>										
n0	0	0	0	0	2 ⁵	1 ⁵				1
mean brood						3.50	6.00			6.00
young/100 adult hens						350	300			120
hens w/o broods						0	1			4
adult males		2		0		0	0			
<u>Atwood Basin</u>										
n		1	1							
mean brood		4.00	5.00							
young/100 adult hens		400	500							
hens w/o broods		0	0							
adult males		3	0							

Table 2. (continued)

Area:	DATE								
Statistics	8/13-19/78	8/14-24/79	8/17-29/80	8/18-31/81	8/23-30/82	8/26-28/84	8/14-22/85	8/86	8/87
<u>Flat Top Mountain</u>									
n						1			1
mean brood						6.00			6.00
young/100 adult hens									9.00
hens w/o broods						1			0
adult males									0
<u>Little E. Fork - Black's Fork</u>									
n			0						
Mean brood									
young/100 adult hens									
hens w/o broods									
adult males									
<u>Rainbow Basin</u>									
n			1						
mean brood			4.0						
young/100 adult hens			400						
hens w/o brood			0						
adult males			0						
<u>Gilbert Basin</u>									
n		3	2						
mean brood		5.00	5.00						
young/100 adult hens		500	500						
hens w/o broods		0	0						
adult males		3	0						
<u>Samuel's Draw</u>									
n			1						
mean brood			4.00						
young/100 adult hens			400						
hens w/o broods			0						
adult males			0						
<u>Leidy Peak</u>									
n									1
mean brood									2.00
young/100 adult hens									200
hens w/o broods									0
adult males									0

Table 2. (continued)

Area:	DATE									
Statistics	8/13-19/78	8/14-24/79	8/17-29/80	8/18-31/81	8/17-30/82	8/23-30/83	8/26-28/84	8/14-22/85	8/86	8/87
<u>East F. Black's Fork</u>										
n			0							
mean brood										
young/100 adult hens										
hens w/o broods										
adult males										
<u>Joulious Creek</u>										
n										1
mean brood										1.00
young/100 adult hens										300
hens w/o broods										0
adult males										0
TOTAL										
n	7	12 ¹	112	20	5	4	4	4	4	7
mean brood	4.71	4.50	4.73	4.00	4.20	4.00	3.50	3.75	3.86	
young/100 adult hens	413	450	473	364	400	400	350	375	236	
hens w/o brood	1	0	0	2	2	0	0	0	7	
adult males	5	18	0	14	0	0	0	0	0	
Total birds observed	46	84	63	316	20	20	18	19	47	

¹Not included is observation of 2 hens with brood from Leidy Peak, some 43 miles distant from release site.

²Considerably more time spent this year than in previous years.

³After 4 days of searching.

⁴Only 3 days of searching, suspect a minimum of 5 broods present on Trail Rider Pass this year.

⁵Flat Top Mountain between Henry's Fork and Smith's Fork.

ⁿNumber of broods.

Table 3. Summary of ptarmigan harvest statistics, 1982-87.

Year	Permits Sold		Hunters Afield		Hunter-days Afield		Ptarmigan Bagged		Birds/Hunter		Ptarmigan/Hunter-Day		Crippling Loss/100 Bagged		Ptarmigan Observed		% Hunters Observing Ptarmigan	
1982	48	21	33	0	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0
1983	31	13	21	14	1.08	0.67	14	0	0	0	0	0	0	0	25	30	30	
1984	28	20	25	36	1.80	1.44	36	0	0	0	0	0	0	0	0	0	0	
1985	55	10	13	7	0.70	0.54	7	14	14	0	0	0	0	0	9	14	14	
1986	49	14	21	8	0.57	0.36	8	0	0	0	0	0	0	0	8	22	22	
1987*	45	9	9	8	0.89	0.89	8	0	0	0	0	0	0	0	0	0	0	

*Projection factor = 1.1842

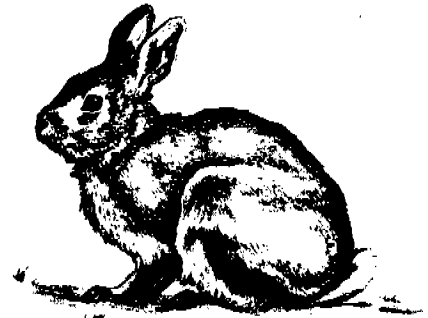
RABBITS AND HARES

SUMMARY

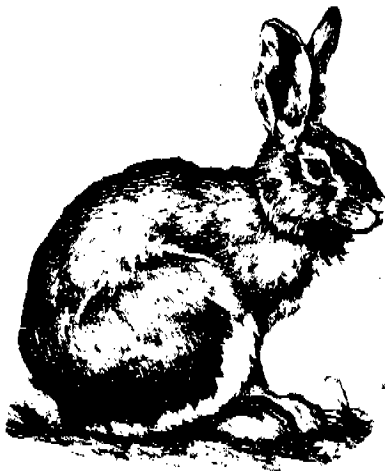
Cottontail populations are recovering but are still below the 10 year average. A depressed breeding population for 1987 was indicated by the 1986 harvest statistics.

Summer roadside counts indicated an increased population density statewide. Harvest statistics indicated significant improvement in hunter success with a total harvest increase of 172 percent. Populations are now rapidly recovering from the 1985 record low numbers.

Cottontail Rabbits



Snowshoe Hares



The 1987 snowshoe hare hunting season indicated improved populations but still below the 10 year average.

Harvest statistics for 1987 indicated increased hunter participation and greatly increased hunter success. Although efforts have been made to educate hunters in the identification of the snowshoe hare and the white-tailed jackrabbit, it is still a potential problem which could bias the snowshoe data.

COTTONTAIL RABBIT

Roadside Counts

Results of the annual roadside counts for 1987 are shown in Table 1 of this section. The trend of cottontails observed per mile and young per 100 adults since 1976 is shown in Tables 2 and 3, respectively. Indices for 1987 compared to 1986 and the 10-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total miles driven	1,552	-4	-26
Total cottontails counted	521	+83	-37
Cottontails observed per mile	0.34	+89	+3
Young observed per 100 adults	96	+28	-2

An increased, but yet, below average breeding population for 1987 was again indicated by 1986 harvest statistics. Production was 28 percent above 1986 but about average.

The cottontail per mile index increased statewide but was about average.

Harvest

Hunter Questionnaire

Results of the 1987 hunter questionnaire are found in Table 4. Trends of cottontails bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county since 1980 are found in Tables 5-7. Trends of statewide harvest statistics are found in Table 8 and Figure 2. Results of the 1987 season compared to 1986 and the 20-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Cottontail hunters	20,322	+45	-20
Cottontail harvest	110,411	+172	-33
Hunter-days afield	77,047	+58	-24
Cottontails per hunter-day	1.43	+72	-12
Cottontails per hunter	5.43	+87	-17

Total hunters and effort increased in 1987. Total harvest again increased significantly from 1986. However, total harvest was 33 percent below average and success was 12 percent below average, indicating another year of below average populations of cottontails. The winters of 1982-83 and 1983-84 appear to have had a profound effect on the rabbit population statewide. The population crash was apparent in the spring of 1984, and has been confirmed by the 1984, 1985 and 1986 harvest data. Populations are recovering rapidly. The winters of 1985-86, 1986-87, and 1987-88 have not been harsh.

Field Bag Checks

Results of the survey for 1987 are shown in Table 9. Trends of hunter success as determined by bag checks are shown in Table 10. Following is a comparison of the 1987 field bag check data to 1986 and the 10 year average.

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Total hunters checked	96	+231	-49
Total hours hunted	183	+95	-64
Cottontails per hunter (complete hunts)	1.68	+39	-11
Cottontails bagged per 100 hours	43	+16	-31
Hours per hunter-day (complete hunts)	1.9	-44	-39
Hours per cottontail bagged (complete hunts)	1.9	-32	-14

This data is consistent with mail questionnaire data. Field bag check data was limited to the Northern and Northeastern regions. Data from other regions was not obtained.

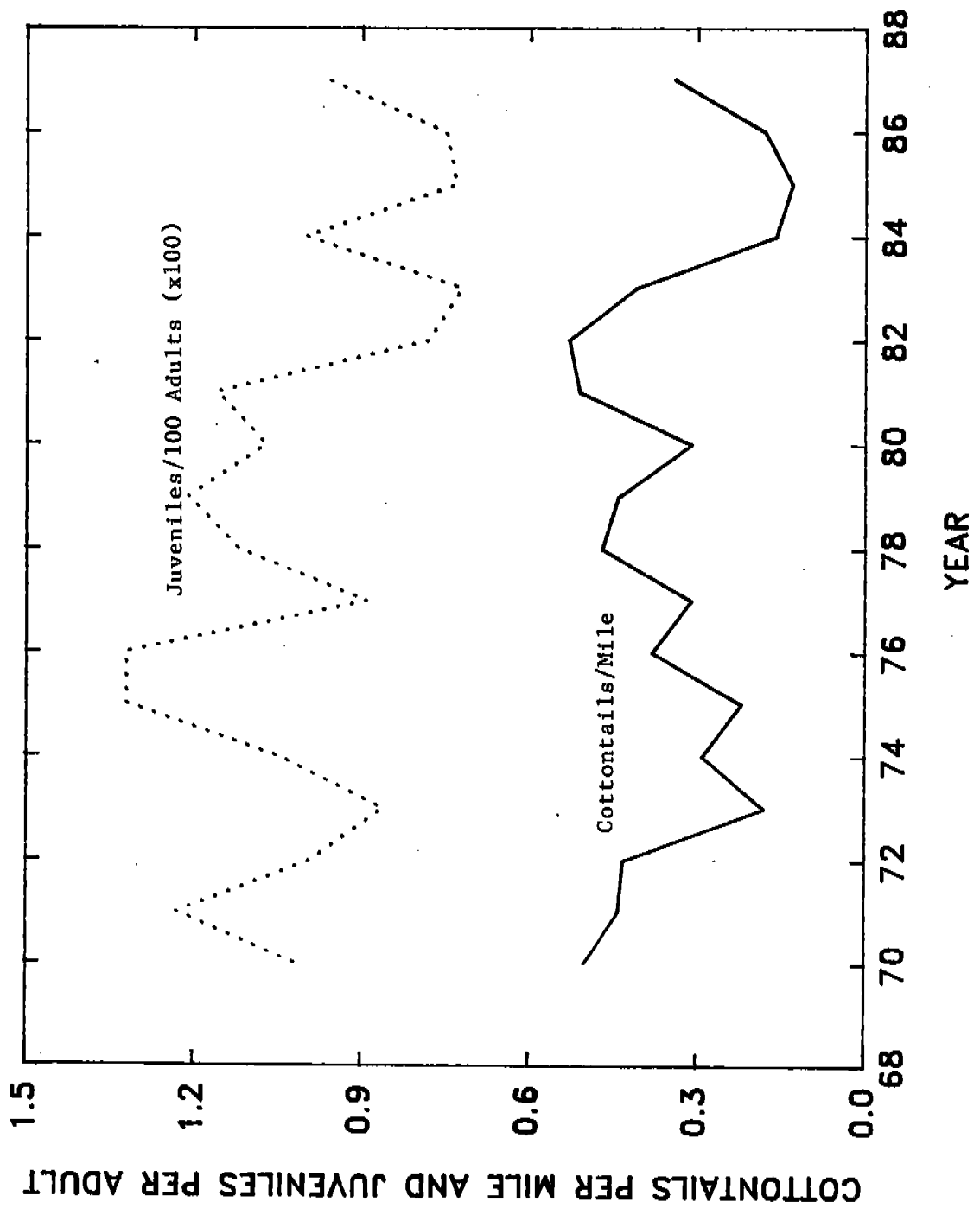


Figure 1. Cottontail rabbit population indexes trend.

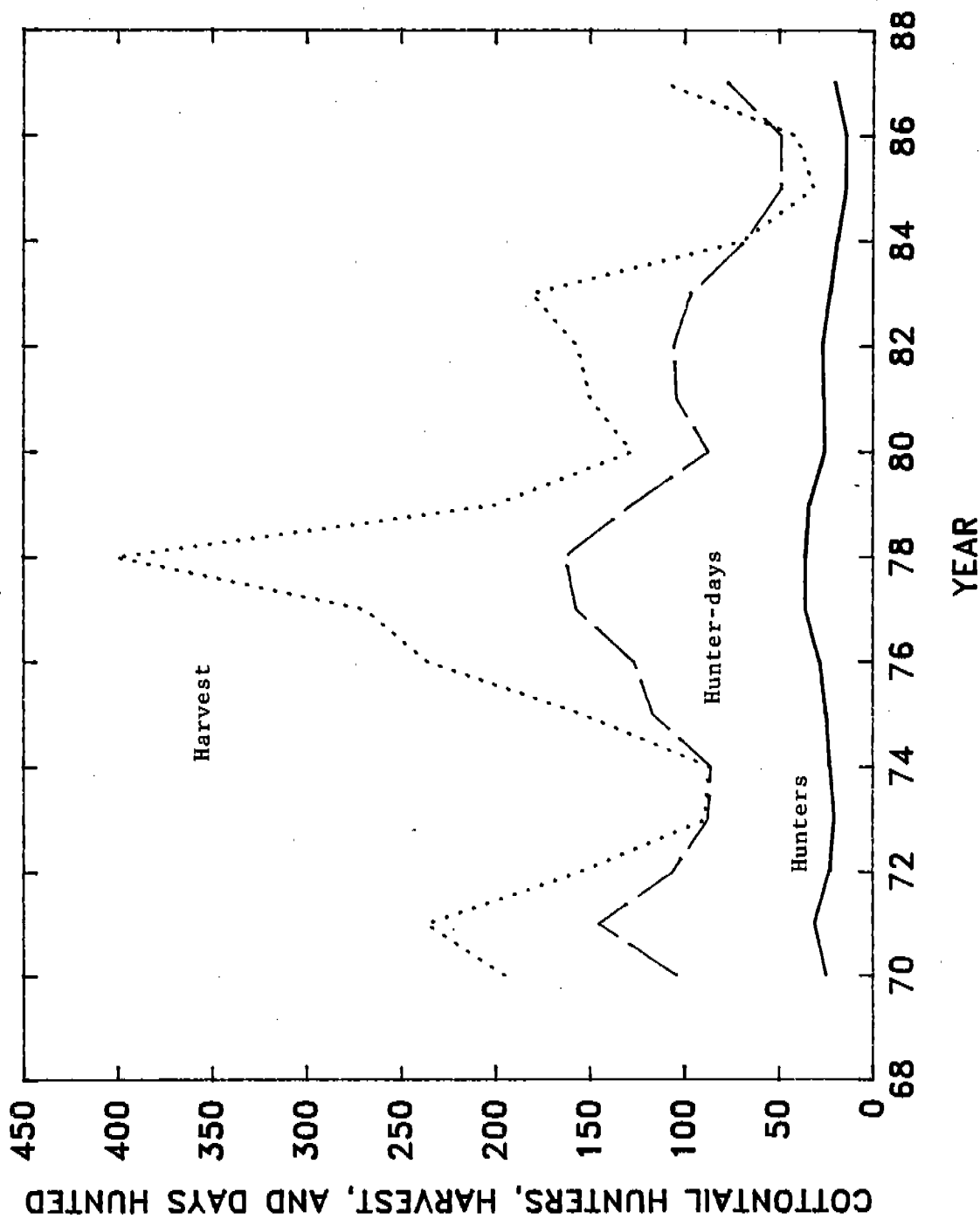


Figure 2. Cottontail rabbit harvest trend.

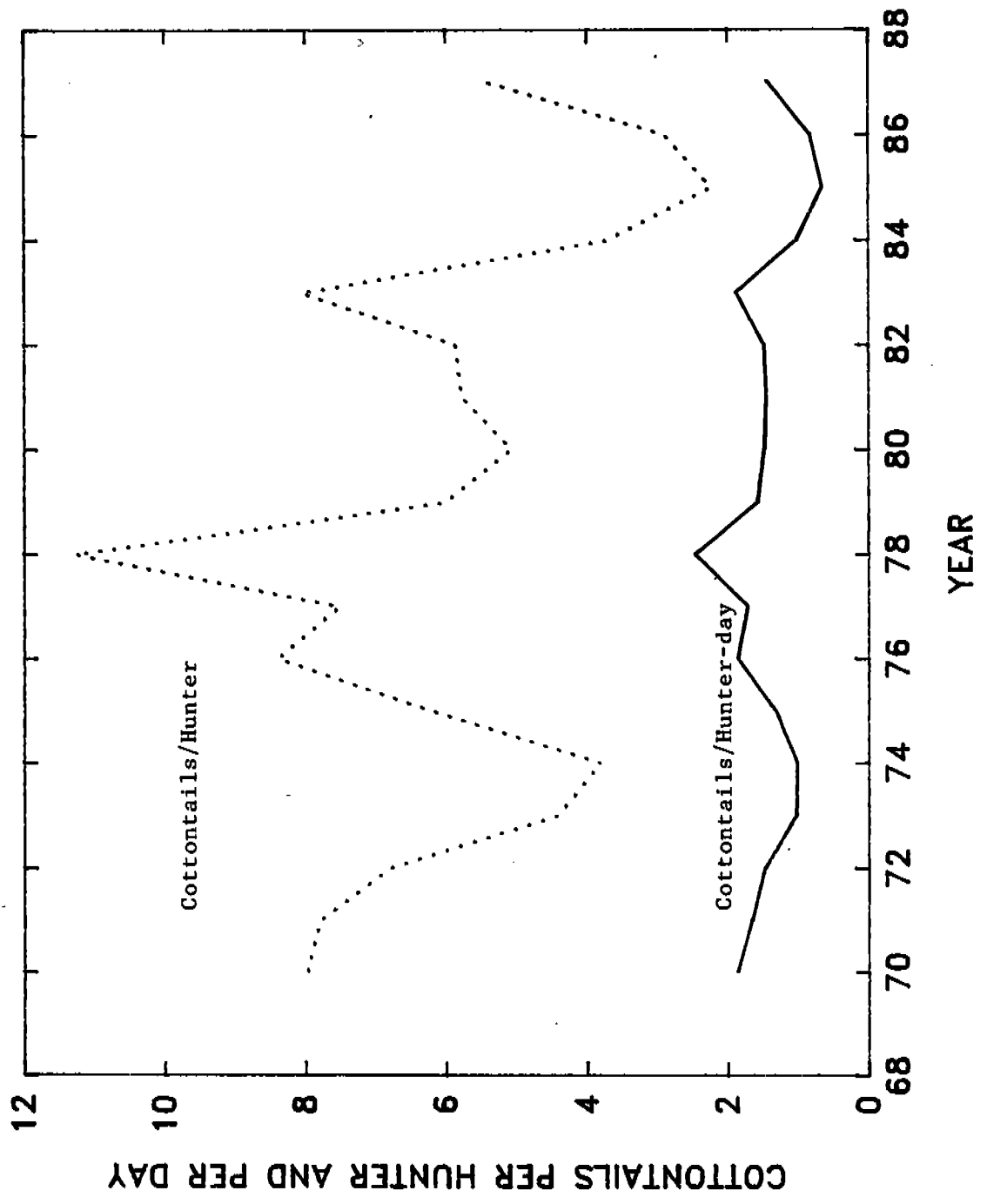


Figure 3. Cottontail rabbit harvest trend.

Table 1. Cottontail rabbit summer inventory summary, 1987.

Region and County	Miles Driven	Rabbits Observed		Young Per 100 Adults	Rabbits Per Mile		
		Adults	Young				
Northern Region							
Box Elder	150	4	1	0	5	25	0.03
Cache	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--
REGIONAL TOTALS	150	4	1	0	5	25	0.03
Central Region							
Juab	30	0	0	0	0	0	0.00
Salt Lake	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--
Tooele	90	1	1	0	2	100	0.02
Utah	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--
REGIONAL TOTALS	120	1	1	0	2	100	0.02
Southern Region							
Beaver	90	4	0	0	4	0	0.04
Garfield	--	--	--	--	--	--	--
Iron	23	--	--	6	6	--	0.26
Kane	120	55	61	--	116	111	0.97
Millard	196	7	8	2	17	114	0.09
Piute	60	0	0	3	3	--	0.05
Sevier	--	--	--	--	--	--	--
Washington	90	4	7	0	11	175	0.12
Wayne	90	1	21	0	22	2,100	0.24
REGIONAL TOTALS	669	71	97	11	179	137	0.27
Northeastern Region							
Daggett	151	37	43	20	100	116	0.66
Duchesne	120	72	17	14	103	24	0.86
Uintah	102	11	29	0	40	264	0.39
REGIONAL TOTALS	373	120	89	34	243	74	0.65
Southeastern Region							
Carbon	60	3	17	0	20	567	0.33
Emery	90	13	7	16	36	54	0.40
Grand	--	--	--	--	--	--	--
San Juan	90	15	7	4	26	47	0.29
REGIONAL TOTALS*	240	31	31	30	92	100	0.38
STATE TOTALS	1,552	227	219	75	521	96	0.34

Table 2. Summary of cottontail rabbits observed per mile during summer inventory, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	0.97	0.29	0.33	--	0.37	0.01	--	--	--	0.02	0.03	--
Cache	--	0.05	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	0.16	0.10	--	--	--	--	--	--	--	--	--	--
Rich	0.26	0.47	0.30	0.11	0.13	0.16	--	--	--	0.02	--	--
Summit	--	--	--	--	--	--	0.18	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	0.59	0.30	0.32	0.11	0.26	0.06	0.18	--	--	0.02	0.03	0.23
Central Region												
Juab	0.18	0.19	0.23	0.29	1.12	0.38	--	0.00	0.00	0.02	0.00	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	0.37	0.86	1.15	1.06	1.29	0.78	0.57	--	--	--	--	--
Tooele	0.19	0.21	0.51	0.26	0.13	0.10	--	0.02	0.00	0.01	0.02	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	0.25	0.43	0.64	0.54	0.85	0.43	0.57	0.01	0.00	0.01	0.02	0.37
Southern Region												
Beaver	0.11	0.22	0.22	0.06	0.19	0.12	0.04	0.01	0.03	0.10	0.04	--
Garfield	0.15	0.13	0.15	--	--	0.27	0.25	--	0.06	0.13	--	--
Iron	0.36	0.66	0.45	0.45	--	0.18	0.38	0.27	0.33	0.53	0.26	--
Kane	0.32	0.23	0.34	--	0.69	--	--	--	0.52	0.47	0.97	--
Millard	0.14	0.42	0.52	0.18	0.56	0.28	0.16	0.04	0.02	0.08	0.09	--
Piute	0.00	0.01	0.02	--	0.10	0.13	0.03	--	--	0.06	0.05	--
Sevier	0.38	0.90	0.55	0.27	0.83	0.27	0.23	--	--	--	--	--
Washington	0.21	0.16	0.35	0.10	0.24	0.32	0.38	--	0.23	0.12	0.12	--
Wayne	0.09	0.48	0.56	0.54	0.49	0.69	--	0.80	--	0.20	0.24	--
REGIONAL TOTALS	0.19	0.35	0.37	0.22	0.45	0.29	0.19	0.18	0.19	0.24	0.27	0.26
Northeastern Region												
Daggett	0.25	2.77	1.58	0.40	0.32	0.45	0.58	0.22	0.12	0.22	0.66	--
Duchesne	1.21	1.42	0.24	0.42	1.78	2.28	0.58	0.28	0.13	0.44	0.86	--
Uintah	0.68	1.22	0.53	0.27	0.48	1.97	2.97	0.11	0.00	0.02	0.36	--
REGIONAL TOTALS	0.67	1.75	0.84	0.36	0.81	1.46	1.21	0.21	0.09	0.25	0.65	0.77
Southeastern Region												
Carbon	0.10	0.12	0.12	0.15	0.12	0.10	0.11	--	0.05	0.08	0.33	--
Emery	0.26	0.21	0.28	0.16	0.41	0.18	0.23	0.18	0.20	--	0.40	--
Grand	0.19	0.33	0.21	0.11	0.32	0.67	0.15	0.13	0.67	0.08	--	--
San Juan	0.31	0.31	0.20	0.60	0.42	1.26	0.40	--	0.14	0.37	0.29	--
REGIONAL TOTALS	0.21	0.23	0.21	0.30	0.36	0.58	0.25	0.17	0.13	0.17	0.38	0.26
STATE TOTALS	0.31	0.47	0.44	0.31	0.51	0.53	0.41	0.16	0.13	0.18	0.34	0.35

Table 3. Summary of cottontail rabbits young per 100 adults, 1977-87.

Region and County	Year											Average 1977-86
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
Northern Region												
Box Elder	103	126	100	--	77	--	--	--	--	0	25	
Cache	--	--	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	100	--	--	--	--	--	--	--	--	--	--	
Rich	54	130	60	67	43	63	67	--	--	50	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	96	137	85	67	71	63	67	--	--	20	25	76
Central Region												
Juab	100	44	13	78	102	53	--	0	0	0	0	0
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	200	217	312	352	197	209	225	--	--	--	--	--
Tooele	129	125	100	71	200	80	--	--	0	0	100	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	154	161	167	194	147	140	225	0	0	0	100	170
Southern Region												
Beaver	33	70	63	40	55	83	33	0	0	22	0	
Garfield	71	64	250	--	--	38	120	--	33	38	--	
Iron	93	33	44	23	--	57	35	40	82	75	--	
Kane	65	56	82	--	106	--	--	--	100	71	111	
Millard	67	88	190	96	170	94	125	75	200	170	114	
Piute	--	--	--	--	--	--	200	--	--	--	--	
Sevier	126	147	171	350	--	33	61	--	--	--	--	
Washington	57	400	94	--	123	150	81	--	73	133	175	
Wayne	225	282	214	308	287	343	--	380	--	360	2,100	
REGIONAL TOTALS	86	96	139	114	184	145	82	215	85	100	137	125
Northeastern Region												
Daggett	48	98	123	58	104	140	66	33	46	136	116	
Duchesne	66	167	200	61	42	37	16	22	15	26	24	
Uintah	134	153	82	160	176	44	76	233	0	100	264	
REGIONAL TOTALS	78	125	118	73	67	48	63	42	31	58	74	70
Southeastern Region												
Carbon	112	118	230	133	83	66	40	--	--	150	567	
Emery	30	111	25	70	97	43	75	217	216	--	54	
Grand	100	77	50	250	137	148	150	33	300	300	--	
San Juan	120	35	30	68	105	72	43	--	43	61	47	
REGIONAL TOTALS	84	71	46	79	103	82	54	156	88	69	100	83
STATE TOTALS	89	112	121	107	116	78	72	100	73	75	96	94

Table 4. Summary of cottontail rabbit hunter success and distribution of harvest and hunting pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-days Afield	Cottontails Bagged	Cottontails/Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	102	6,300	14,169	2.25	8.17	12.83
Cache	9	563	1,005	1.78	0.73	0.91
Davis	2	73	49	0.67	0.09	0.04
Morgan	2	147	171	1.17	0.19	0.15
Rich	10	441	588	1.33	0.57	0.53
Summit	11	441	637	1.44	0.57	0.57
Weber	7	563	1,593	2.83	0.73	1.44
REGIONAL TOTALS	143	8,530	18,213	2.14	11.07	16.49
<u>Central Region</u>						
Juab	63	3,284	5,711	1.74	4.26	5.17
Salt Lake	12	1,054	1,323	1.26	1.36	1.19
Sanpete	55	4,976	6,202	1.25	6.45	5.61
Tooele	140	9,732	12,894	1.32	12.63	11.67
Utah	144	10,075	12,232	1.21	13.07	11.07
Wasatch	15	1,495	1,912	1.28	1.94	1.73
REGIONAL TOTALS	429	30,618	40,276	1.32	39.73	36.47
<u>Southern Region</u>						
Beaver	9	1,054	1,054	1.00	1.36	0.95
Garfield	4	416	294	0.71	0.54	0.26
Iron	9	661	294	0.44	0.85	0.26
Kane	3	637	367	0.58	0.82	0.33
Millard	36	4,682	3,848	0.82	6.07	3.48
Piute	2	98	98	1.00	0.12	0.08
Sevier	25	1,299	1,348	1.04	1.68	1.22
Washington	10	907	857	0.95	1.17	0.77
Wayne	9	441	539	1.22	0.57	0.48
REGIONAL TOTALS	107	10,197	8,702	0.85	13.23	7.88
<u>Northeastern Region</u>						
Daggett	27	1,544	4,878	3.16	2.00	4.41
Duchesne	62	5,196	8,481	1.63	6.74	7.68
Uintah	60	4,118	7,770	1.89	5.34	7.03
REGIONAL TOTALS	149	10,859	21,131	1.95	14.09	19.13
<u>Southeastern Region</u>						
Carbon	49	5,147	6,912	1.34	6.68	6.26
Emery	46	6,226	6,226	1.00	8.08	5.63
Grand	16	1,397	2,794	2.00	1.81	2.53
San Juan	12	1,250	3,211	2.57	1.62	2.90
REGIONAL TOTALS	123	14,022	19,145	1.37	18.19	17.34
Unknown Counties	7	2,819	2,941	1.04	3.65	2.66
STATE TOTALS	958	77,047	110,411	1.43	100	100

*Total hunter trips from questionnaire returns.

Table 5. Summary of cottontail rabbits bagged per hunter-day by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>								
Box Elder	1.92	1.99	1.12	1.44	0.72	0.46	0.73	2.25
Cache	1.35	0.68	0.61	0.77	0.71	0.93	0.18	1.78
Davis	0.90	0.07	0.00	1.05	0.57	0.00	4.00	0.67
Morgan	1.09	1.46	0.95	1.65	1.19	0.55	0.05	1.17
Rich	1.79	1.87	1.03	2.28	1.61	0.52	0.74	1.33
Summit	0.56	1.21	0.87	1.44	0.17	0.35	0.29	1.44
Weber	0.58	1.10	0.70	0.56	0.68	0.13	0.69	2.83
REGIONAL TOTALS	1.61	1.65	1.00	1.43	1.76	0.40	0.57	2.14
<u>Central Region</u>								
Juab	2.15	1.73	1.43	1.21	1.41	0.56	0.78	1.74
Salt Lake	0.56	0.71	1.07	1.74	0.88	0.21	1.06	1.26
Sanpete	0.99	1.44	0.86	1.12	0.48	0.35	0.60	1.25
Tooele	1.69	1.29	1.12	1.21	0.82	0.53	0.71	1.32
Utah	1.12	0.99	0.74	1.02	0.82	0.65	0.94	1.21
Wasatch	0.80	0.82	0.80	0.49	0.69	0.48	0.84	1.28
REGIONAL TOTALS	1.51	1.26	1.06	1.16	0.88	0.53	0.78	1.32
<u>Southern Region</u>								
Beaver	0.93	1.79	2.00	1.25	0.28	0.50	0.61	1.00
Garfield	1.86	1.05	1.86	0.98	0.84	1.00	1.25	0.71
Iron	1.27	1.03	0.77	0.80	1.48	0.60	0.87	0.44
Kane	1.39	0.81	1.84	0.58	2.19	2.07	1.12	0.58
Millard	1.70	1.57	1.58	1.04	0.89	0.86	0.70	0.82
Piute	1.53	1.52	0.38	0.80	0.67	1.00	1.00	1.00
Sevier	1.22	0.97	0.87	0.66	0.79	0.56	0.56	1.04
Washington	0.95	1.03	1.53	0.92	0.93	1.08	0.94	0.95
Wayne	1.48	2.69	1.41	1.52	1.93	1.45	1.53	1.22
REGIONAL TOTALS	1.35	1.32	1.39	0.93	1.06	0.94	0.89	0.85
<u>Northeastern Region</u>								
Daggett	1.50	1.12	1.38	1.77	1.19	1.00	1.96	3.16
Duchesne	1.39	1.80	2.17	3.41	1.62	0.63	1.01	1.63
Uintah	1.16	1.41	2.18	3.09	1.47	0.49	0.49	1.89
REGIONAL TOTALS	1.30	1.53	2.13	3.12	1.51	0.59	0.96	1.95
<u>Southeastern Region</u>								
Carbon	1.05	1.42	1.61	1.73	0.52	0.69	0.49	1.34
Emery	1.36	1.30	1.38	1.61	0.78	0.64	1.05	1.00
Grand	1.62	1.56	2.44	2.27	1.53	1.74	1.28	2.00
San Juan	1.90	1.87	2.93	2.09	1.51	0.89	1.27	2.57
REGIONAL TOTALS	1.30	1.53	1.81	1.79	0.90	0.77	0.93	1.37
Unknown counties	1.00	2.60	1.35	1.78	0.00	1.11	2.50	1.04
Mixed counties	5.00	1.11	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	1.47	1.44	1.48	1.88	1.02	0.65	0.83	1.43

Table 6. Percentage distribution of cottontail rabbit harvest by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
Northern Region								
Box Elder	20.87	14.87	6.05	5.93	5.49	3.82	5.68	12.83
Cache	0.83	0.72	0.36	0.33	0.50	0.96	0.25	0.91
Davis	0.12	0.03	0.00	0.16	0.12	0.00	0.41	0.04
Morgan	0.84	0.82	0.38	0.64	0.73	1.16	0.10	0.15
Rich	1.75	0.80	0.36	0.96	2.08	0.89	1.98	0.53
Summit	1.16	1.66	0.65	0.83	0.29	1.16	0.56	0.57
Weber	0.40	0.62	0.38	0.11	0.56	0.27	0.56	1.44
REGIONAL TOTALS	25.96	19.50	8.19	8.95	9.77	8.26	9.53	16.49
Central Region								
Juab	9.35	6.79	5.76	1.95	5.28	2.04	2.84	5.17
Salt Lake	0.37	0.41	1.09	1.16	2.29	0.48	0.91	1.19
Sanpete	2.76	1.31	0.94	1.21	0.82	1.23	2.38	5.61
Tooele	21.32	10.58	10.04	6.53	9.18	10.51	9.99	11.67
Utah	6.01	5.63	3.55	3.44	5.43	8.26	7.66	11.07
Wasatch	0.88	0.59	0.73	0.17	0.91	1.57	1.83	1.73
REGIONAL TOTALS	40.69	25.32	22.10	14.44	23.91	24.09	25.61	36.47
Southern Region								
Beaver	1.43	0.72	0.76	0.30	0.32	1.30	1.12	0.95
Garfield	0.35	1.14	0.64	0.32	0.47	0.61	3.04	0.26
Iron	1.01	1.79	0.81	0.52	1.82	1.23	2.94	0.26
Kane	0.85	0.66	0.34	0.29	2.05	1.98	2.43	0.33
Millard	5.00	5.50	4.94	1.50	3.64	5.66	4.26	3.48
Piute	0.61	0.46	0.08	0.06	0.12	0.20	0.30	0.08
Sevier	1.84	1.94	0.79	0.48	0.56	1.23	0.91	1.22
Washington	1.12	2.06	2.99	1.49	5.05	10.99	6.09	0.77
Wayne	1.19	2.77	0.98	0.61	2.43	2.18	1.17	0.48
REGIONAL TOTALS	13.39	17.04	12.33	5.56	16.46	25.35	22.26	7.88
Northeastern Region								
Daggett	0.84	0.53	1.28	1.36	2.20	1.84	5.58	4.41
Duchesne	3.86	7.92	15.10	16.19	13.17	9.21	7.05	7.68
Uintah	3.40	7.13	14.70	29.37	14.23	5.87	3.35	7.03
REGIONAL TOTALS	8.10	15.58	31.08	46.93	29.61	16.93	15.97	19.13
Southeastern Region								
Carbon	4.22	6.96	9.98	9.60	4.90	7.30	4.87	6.26
Emery	4.05	4.68	5.47	6.98	4.69	9.76	9.53	5.63
Grand	1.68	2.96	2.79	2.15	5.99	4.16	5.07	2.53
San Juan	1.75	6.93	5.78	4.55	4.66	3.41	6.90	2.90
REGIONAL TOTALS	11.70	21.53	24.01	23.28	20.25	24.64	26.37	17.34
Unknown counties	0.03	0.19	2.28	0.84	0.00	0.68	0.25	2.66
Mixed counties	0.13	0.84	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100	100

Table 7. Percentage distribution of cottontail rabbit hunting pressure by region and county, 1980-87.

Region and County	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
Northern Region								
Box Elder	15.90	10.75	8.04	7.73	7.77	5.40	6.52	8.17
Cache	0.90	1.50	0.88	0.79	0.72	0.66	1.18	0.73
Davis	0.20	0.55	0.15	0.29	0.21	1.42	0.08	0.09
Morgan	1.13	0.80	0.59	0.72	0.63	1.37	1.65	0.19
Rich	1.43	0.62	0.52	0.79	1.32	1.11	2.24	0.57
Summit	3.01	1.97	1.10	1.08	1.74	2.13	1.61	0.57
Weber	1.02	0.80	0.81	0.38	0.84	1.33	0.68	0.73
REGIONAL TOTALS	23.58	17.00	12.10	11.79	13.23	13.42	13.97	11.07
Central Region								
Juab	6.39	5.65	5.98	3.05	3.84	2.39	3.05	4.26
Salt Lake	0.98	0.84	1.51	1.25	2.67	1.46	0.72	1.36
Sanpete	4.10	1.32	1.61	2.03	1.74	2.26	3.30	6.45
Tooele	18.48	11.80	13.25	10.12	11.43	12.98	11.68	12.63
Utah	7.87	8.14	7.15	6.26	6.78	8.24	6.81	13.07
Wasatch	1.60	1.03	1.36	0.65	1.35	2.13	1.82	1.94
REGIONAL TOTALS	39.43	28.77	30.86	23.36	27.82	29.46	27.38	39.73
Southern Region								
Beaver	2.25	0.58	0.57	0.44	1.20	1.68	1.52	1.36
Garfield	0.27	1.56	0.51	0.61	0.57	0.40	2.03	0.54
Iron	1.17	2.49	1.57	1.22	1.26	1.33	2.84	0.85
Kane	0.90	1.17	0.28	0.93	0.96	0.62	1.82	0.82
Millard	4.30	5.06	4.64	2.73	4.20	4.30	5.08	6.07
Piute	0.59	0.43	0.30	0.14	0.18	0.13	0.25	0.12
Sevier	2.21	2.88	1.35	1.38	0.72	1.42	1.35	1.68
Washington	1.72	2.88	2.90	3.05	5.52	6.60	5.42	1.17
Wayne	1.17	1.48	1.03	0.75	1.29	0.97	0.63	0.57
REGIONAL TOTALS	14.58	18.52	13.14	11.25	15.91	17.46	20.95	13.23
Northeastern Region								
Daggett	0.82	0.68	1.38	1.45	1.89	1.19	2.37	2.00
Duchesne	4.08	6.31	10.33	8.93	8.34	9.44	5.80	6.74
Uintah	4.28	7.25	9.98	17.87	9.87	7.84	5.71	5.34
REGIONAL TOTALS	9.18	14.24	21.69	28.25	20.11	18.48	13.88	14.09
Southeastern Region								
Carbon	5.90	7.03	9.20	10.42	9.66	6.82	8.34	6.68
Emery	4.38	5.18	5.88	8.18	6.12	9.92	7.58	8.08
Grand	1.52	2.73	1.70	1.78	3.99	1.55	3.30	1.81
San Juan	1.35	5.34	2.93	4.09	3.15	2.48	4.53	1.62
REGIONAL TOTALS	13.16	20.28	19.70	24.46	22.93	20.78	23.74	18.19
Unknown counties	0.04	0.10	2.51	0.89	0.00	0.40	0.08	3.65
Mixed counties	0.04	1.09	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100	100

Table 8. Statewide summary of cottontail rabbit harvest statistics, 1967-87.

Year	Total Hunters	Total Harvest	Hunter-days Afield	Cottontails Per Hunter-day	Cottontails Per Hunter
1967	23,249	181,812	92,681	1.95	7.79
1968	26,889	225,450	93,126	2.42	8.38
1969	29,760	184,034	119,596	1.54	6.18
1970	24,486	195,248	103,725	1.86	7.97
1971	30,824	239,511	145,287	1.65	7.78
1972	22,835	155,102	105,941	1.46	6.79
1973	20,109	88,603	87,036	1.02	4.41
1974	22,737	86,506	85,499	1.01	3.80
1975	24,803	154,182	116,707	1.32	6.22
1976	28,239	235,952	126,737	1.86	8.39
1977	35,831	269,263	157,257	1.71	7.51
1978	35,590	401,071	163,019	2.46	11.27
1979	33,385	200,223	127,497	1.57	6.00
1980	25,156	127,652	87,051	1.47	5.07
1981	25,906	149,765	104,183	1.44	5.78
1982	26,714	156,696	105,644	1.48	5.87
1983	22,467	180,767	96,151	1.88	8.05
1984	18,616	69,186	67,643	1.02	3.72
1985	14,059	31,397	48,371	0.65	2.23
1986	13,992	40,636	48,694	0.83	2.90
1987	20,322	110,411	77,047	1.43	5.43
TOTALS (1967-87)	525,969	3,428,288	2,106,759	(30.43)	(125.67)
AVERAGES (1967-86)	25,282	165,894	101,486	1.63	6.56

Table 9. Cottontail rabbit field bag check summary, 1987.

Region and County	ALL HUNTS						COMPLETE HUNTS					
	Total Parties	Total Hunters	Total Hours	Total Rabbits	Total Rabbits/100 Hr	Total Complete Hunts	Total Hunters	Total Hours	Total Rabbits	Total Rabbits/100 Hr	Rabbits/Hunter	
Northern Region												
Box Elder	22	44	173	54	31	13	28	141	40	28	1.43	
Cache	--	--	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	2	4	10	0	0	0	0	0	0	0	0	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	24	48	183	54	30	13	28	141	40	28	1.43	
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	--	--	--	--	--	--	--	--	--	--	--	
Tooele	--	--	--	--	--	--	--	--	--	--	--	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	
Northeastern Region												
Daggett	1	3	8	1	13	0	0	0	0	0	0.00	
Duchesne	4	6	19	13	68	2	3	16	10	63	3.33	
Uintah	19	39	72	48	67	13	25	63	44	70	1.76	
REGIONAL TOTALS	24	48	99	62	63	15	28	79	54	68	1.93	
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	
Emery	--	--	--	--	--	--	--	--	--	--	--	
Grand	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	
STATE TOTALS	48	96	183	116	63	28	56	220	94	43	1.68	

Table 10. Cottontail hunter success trend determined by field bag checks, 1982-87.

Region and County	1982		1983		1984		1985		1986		1987	
	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter	Bag/ 100 Hr Hunter
Northern Region												
Box Elder	--	--	17	0.60	--	--	--	--	0	0	28	1.43
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	29	1.33	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	24	1.00	--	--	--	--	0	0	28	1.43
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	21	0.80	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	21	0.80	--	--	--	--	--
Northeastern Region												
Daggett	104	2.88	172	4.43	107	3.20	--	--	--	--	0	0.00
Duchesne	75	2.00	148	3.70	100	0.75	--	--	0	0.00	63	3.33
Uintah	101	2.22	225	6.75	111	1.91	--	--	100	1.50	70	1.76
REGIONAL TOTALS	98	2.30	173	4.50	108	2.00	--	--	50	0.75	68	1.93
Southeastern Region												
Carbon	94	1.78	--	--	67	2.87	--	--	158	3.80	--	--
Emery	33	0.88	--	--	--	--	--	--	33	1.00	--	--
Grand	--	--	--	--	0	0.00	--	--	--	--	--	--
San Juan	225	4.50	57	3.43	50	1.33	--	--	--	--	--	--
REGIONAL TOTALS	62	1.44	57	3.43	61	2.13	--	--	133	3.33	--	--
STATE TOTALS	85	1.99	106	3.07	76	2.06	21	0.80	36	1.21	43	1.68

*Cottontails per hunter based on all hunts.

SNOWSHOE HARE

Harvest

Results of the 1987 hunter questionnaire are found in Table 11. Trends of snowshoe hares bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) are found in Tables 12-14. Trend in statewide harvest statistics by year is shown in Table 15. The 1987 season compared to 1986 and the 10-year average follow:

	<u>1987</u>	<u>Percent change from</u>	
		<u>1986</u>	<u>Average</u>
Snowshoe hare hunters	3,702	+13	-32
Snowshoe hares harvested	6,005	+69	-49
Hunter-days afield	8,947	-6	-44
Snowshoes per hunter-day	0.67	+81	-9
Snowshoes per hunter	1.62	+50	-26

Significant misidentification of whitetail jackrabbits as snowshoe hares was anticipated prior to mailing the harvest questionnaire following the first season in 1975. This proved to be the case as a significant harvest of snowshoe hares was reported for counties outside the known range of the species. It was assumed that the problem was statewide, not just confined to those counties.

The 1976 harvest questionnaire was modified in an attempt to better inform respondents concerning the potential for misidentification and aid them in distinguishing between these two varying hares. Comparative reported harvests between 1975 and 1976 suggest that this was accomplished, at least to a significant degree, but the relatively large harvest in counties outside of the snowshoe's range suggested continued confusion. Further refinement was made in the 1977 harvest questionnaire in an effort to more clearly define the snowshoe hare harvest.

In 1978, a leaflet containing pictures and descriptions of the different species of hares found in Utah was mailed with the questionnaire. As a result of the identification leaflet, it is assumed that the data have been more accurate.

Results of the 1986 questionnaire indicate a 13 percent increase in snowshoe hare hunters and a 69 percent increase in harvest compared to 1986. This corresponds to a below average but increasing rabbit populations statewide.

It is unknown what proportion of the reported snowshoe harvest is actually whitetail jackrabbits incorrectly identified by the hunters. However, it is believed that identification has been improving as a result of efforts to educate the hunter on the differences between the various species of hares found in Utah.

Table 11. Summary of snowshoe hare hunter success and distribution of harvest and hunting pressure by region and county, 1987.

Region and County	Sample Size*	Hunter-days Afield	Snowshoes Bagged	Snowshoe/Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	15	563	196	0.35	6.30	3.26
Cache	7	367	612	1.67	4.10	10.20
Davis	3	98	24	0.25	1.09	0.40
Morgan	1	24	0	0.00	0.27	0.00
Rich	7	367	465	1.27	4.10	7.75
Summit	14	588	294	0.50	6.57	4.89
Weber	4	196	73	0.38	2.19	1.22
REGIONAL TOTALS	51	2,206	1,666	0.76	24.65	27.75
<u>Central Region</u>						
Juab	1	49	0	0.00	0.54	0.00
Salt Lake	2	196	0	0.00	2.19	0.00
Sanpete	10	735	416	0.57	8.21	6.93
Tooele	9	392	294	0.75	4.38	4.89
Utah	16	1,323	514	0.39	14.79	8.57
Wasatch	19	882	490	0.56	9.86	8.16
REGIONAL TOTALS	57	3,579	1,715	0.48	40.00	28.57
<u>Southern Region</u>						
Beaver	1	24	0	0.00	0.27	0.00
Garfield	2	196	0	0.00	2.19	0.00
Iron	0	0	0	0.00	0.00	0.00
Kane	0	0	0	0.00	0.00	0.00
Millard	3	122	343	2.80	1.36	5.71
Piute	1	24	0	0.00	0.27	0.00
Sevier	7	245	147	0.60	2.73	2.44
Washington	0	0	0	0.00	0.00	0.00
Wayne	5	171	196	1.14	1.91	3.26
REGIONAL TOTALS	19	784	686	0.88	8.76	11.42
<u>Northeastern Region</u>						
Daggett	2	49	49	1.00	0.54	0.81
Duchesne	10	637	416	0.65	7.12	6.93
Uintah	6	392	514	1.31	4.38	8.57
REGIONAL TOTALS	18	1,078	980	0.91	12.04	16.32
<u>Southeastern Region</u>						
Carbon	10	343	343	1.00	3.83	5.71
Emery	9	686	392	0.57	7.67	6.53
Grand	0	0	0	0.00	0.00	0.00
San Juan	1	24	122	5.00	0.27	2.04
REGIONAL TOTALS	20	1,054	857	0.81	11.78	14.28
Unknown Counties	1	245	98	0.40	2.73	1.63
STATE TOTALS	166	8,947	6,005	0.67	100	100

*Total hunter trips from questionnaire returns.

**Probable misidentification as snowshoe are not known to exist in this county.

Table 12. Summary of snowshoe hares bagged per hunter-day by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>							
Box Elder	0.43	0.31	0.27	2.93	0.14	0.38	0.35
Cache	0.46	0.62	0.53	1.27	0.75	0.00	1.67
Davis	0.25	0.00	0.00	0.29	0.11	0.50	0.25
Morgan	0.25	0.50	0.45	0.14	0.00	0.03	0.00
Rich	2.17	0.53	0.67	0.58	0.06	0.56	1.27
Summit	0.91	0.77	0.94	0.61	0.63	0.29	0.50
Weber	1.00	0.32	0.39	0.31	0.17	1.00	0.38
<u>REGIONAL TOTALS</u>	<u>0.72</u>	<u>0.46</u>	<u>0.47</u>	<u>1.30</u>	<u>0.33</u>	<u>0.29</u>	<u>0.76</u>
<u>Central Region</u>							
Juab	0.83	1.83	1.20	0.33	0.00	1.44	0.00
Salt Lake	1.00	0.20	0.00	0.23	0.17	0.30	0.00
Sanpete	0.84	0.97	0.48	0.80	0.23	0.30	0.57
Tooele	0.08	1.01	0.94	0.68	0.24	0.21	0.75
Utah	0.26	0.39	0.38	0.71	0.64	0.53	0.39
Wasatch	0.97	0.84	0.65	0.44	0.32	0.68	0.56
<u>REGIONAL TOTALS</u>	<u>0.53</u>	<u>0.88</u>	<u>0.60</u>	<u>0.55</u>	<u>0.33</u>	<u>0.54</u>	<u>0.48</u>
<u>Southern Region</u>							
Beaver	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Garfield	0.00	0.00	0.00	0.00	0.40	0.11	0.00
Iron	0.75	0.00	0.17	3.00	0.50	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.75	0.00	0.00
Millard	0.00	1.00	0.00	0.00	0.00	1.00	2.80
Piute	0.00	0.50	1.45	0.20	0.00	0.00	0.00
Sevier	0.29	0.75	0.36	0.00	0.25	0.63	0.60
Washington	0.00	0.00	1.00	0.00	0.50	0.00	0.00
Wayne	2.00	0.58	0.81	1.22	1.00	0.38	1.14
<u>REGIONAL TOTALS</u>	<u>0.62</u>	<u>0.65</u>	<u>0.67</u>	<u>0.65</u>	<u>0.46</u>	<u>0.45</u>	<u>0.88</u>
<u>Northeastern Region</u>							
Daggett	0.00	0.47	0.60	0.33	1.00	0.50	1.00
Duchesne	0.67	0.79	0.89	0.43	0.30	0.41	0.65
Uintah	0.34	0.58	0.61	0.20	0.49	0.13	1.31
<u>REGIONAL TOTALS</u>	<u>0.51</u>	<u>0.67</u>	<u>0.69</u>	<u>0.30</u>	<u>0.41</u>	<u>0.28</u>	<u>0.91</u>
<u>Southeastern Region</u>							
Carbon	0.34	1.32	0.10	0.13	0.29	0.09	1.00
Emery	0.71	1.28	0.59	0.19	0.67	0.13	0.57
Grand	1.00	3.00	0.00	0.00	0.00	0.75	0.00
San Juan	0.00	0.00	0.00	2.00	0.00	1.00	5.00
<u>REGIONAL TOTALS</u>	<u>0.43</u>	<u>1.30</u>	<u>0.36</u>	<u>0.17</u>	<u>0.37</u>	<u>0.16</u>	<u>0.81</u>
Unknown counties	2.33	0.81	0.65	0.00	0.00	0.00	0.40
Mixed counties	0.78	0.00	0.00	0.00	0.00	0.00	0.00
<u>STATE TOTALS</u>	<u>0.61</u>	<u>0.71</u>	<u>0.57</u>	<u>0.60</u>	<u>0.36</u>	<u>0.37</u>	<u>0.67</u>

Table 13. Percentage distribution of snowshoe hare harvested by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>							
Box Elder	5.80	5.63	5.30	36.79	3.12	3.49	3.26
Cache	6.63	2.15	4.87	4.40	3.73	0.00	10.20
Davis	0.55	0.00	0.00	0.62	1.87	0.58	0.40
Morgan	0.55	2.32	2.75	0.31	0.00	0.58	0.00
Rich	7.18	2.98	2.11	2.20	0.61	5.80	7.75
Summit	17.40	5.96	7.00	7.85	24.99	6.98	4.89
Weber	3.59	1.49	1.90	1.25	1.22	5.23	1.22
REGIONAL TOTALS	41.70	20.53	23.93	53.46	35.61	22.67	27.75
<u>Central Region</u>							
Juab	1.38	7.28	1.27	0.62	0.00	13.37	0.00
Salt Lake	1.93	0.33	0.00	0.93	0.61	1.74	0.00
Sanpete	4.42	4.64	2.54	1.25	1.87	5.80	6.93
Tooele	0.28	13.74	10.17	4.07	5.60	3.49	4.89
Utah	4.97	3.48	6.36	6.91	9.97	14.53	8.57
Wasatch	7.74	7.62	4.67	5.02	3.73	14.53	8.16
REGIONAL TOTALS	20.72	37.09	25.01	18.87	21.87	53.49	28.57
<u>Southern Region</u>							
Beaver	0.00	0.33	0.00	0.00	0.00	0.00	0.00
Garfield	0.00	0.00	0.00	0.00	1.22	0.58	0.00
Iron	0.83	0.00	0.21	0.93	1.22	0.00	0.00
Kane	0.00	0.00	0.00	0.00	1.87	0.00	0.00
Millard	0.00	0.17	0.00	0.00	0.00	2.33	5.71
Piute	0.00	0.33	3.38	0.31	0.00	0.00	0.00
Sevier	1.38	0.50	1.68	0.00	1.22	2.91	2.44
Washington	0.00	0.00	0.84	0.00	2.48	0.00	0.00
Wayne	2.21	1.16	4.67	6.91	2.48	1.74	3.26
REGIONAL TOTALS	4.42	2.48	10.78	8.16	10.62	7.56	11.42
<u>Northeastern Region</u>							
Daggett	0.00	1.32	0.63	0.31	3.12	0.58	0.81
Duchesne	14.09	13.91	11.66	8.16	9.97	6.98	6.93
Uintah	5.80	10.43	19.09	5.34	11.87	2.33	8.57
REGIONAL TOTALS	19.89	25.66	31.39	13.83	24.99	9.88	16.32
<u>Southeastern Region</u>							
Carbon	3.59	5.46	0.84	3.45	4.37	2.33	5.71
Emery	1.38	6.13	5.73	0.93	2.48	1.16	6.53
Grand	0.55	0.50	0.00	0.00	0.00	1.74	0.00
San Juan	0.00	0.00	0.00	1.25	0.00	1.16	2.04
REGIONAL TOTALS	5.52	12.09	6.57	5.65	6.85	6.40	14.28
Unknown counties	1.93	2.15	2.33	0.00	0.00	0.00	1.63
Mixed counties	5.80	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100

Table 14. Percentage distribution of snowshoe hare hunting pressure by region and county, 1981-87.

Region and County	Year						
	1981	1982	1983	1984	1985	1986	1987
<u>Northern Region</u>							
Box Elder	8.21	12.66	11.21	7.49	8.34	3.46	6.30
Cache	8.71	2.46	5.19	2.06	1.80	2.81	4.10
Davis	1.34	0.59	0.00	1.31	6.09	0.43	1.09
Morgan	1.34	3.28	3.49	1.31	2.25	7.78	0.27
Rich	2.01	3.99	1.80	2.24	3.60	3.89	4.10
Summit	11.56	5.51	4.22	7.68	14.22	8.86	6.57
Weber	2.18	3.28	2.77	2.43	2.71	1.94	2.19
REGIONAL TOTALS	35.34	31.77	28.68	24.53	39.05	29.16	24.65
<u>Central Region</u>							
Juab	1.01	2.81	0.60	1.12	1.13	3.46	0.54
Salt Lake	1.17	1.17	0.36	2.43	1.35	2.16	2.19
Sanpete	3.18	3.40	3.01	0.93	2.93	7.13	8.21
Tooele	2.01	9.61	6.15	3.55	8.34	6.05	4.38
Utah	11.56	6.33	9.64	5.80	5.64	10.15	14.79
Wasatch	4.86	6.45	4.10	6.73	4.29	7.99	9.86
REGIONAL TOTALS	23.79	29.78	23.86	20.60	23.70	36.93	40.00
<u>Southern Region</u>							
Beaver	0.00	0.23	0.12	1.31	0.00	0.00	0.00
Garfield	0.00	0.00	0.12	0.18	1.13	1.94	0.27
Iron	0.67	0.00	0.72	0.18	0.90	0.00	2.19
Kane	0.00	0.00	0.00	0.00	0.90	0.00	0.00
Millard	0.17	0.12	0.48	0.18	0.90	0.86	1.36
Piute	0.00	0.47	1.33	0.93	0.00	0.00	0.27
Sevier	2.85	0.47	2.65	1.31	1.80	1.73	2.73
Washington	0.00	0.00	0.48	0.00	1.80	0.00	0.00
Wayne	0.67	1.41	3.26	3.37	0.90	1.73	1.91
REGIONAL TOTALS	4.36	2.70	9.15	7.49	8.34	6.26	8.76
<u>Northeastern Region</u>							
Daggett	0.50	1.99	0.60	0.55	1.13	0.43	0.54
Duchesne	12.73	12.54	7.48	11.42	12.19	6.26	7.12
Uintah	10.39	12.78	17.72	15.73	8.80	6.48	4.38
REGIONAL TOTALS	23.62	27.32	25.80	27.71	22.12	13.17	12.04
<u>Southeastern Region</u>							
Carbon	6.37	2.93	4.82	16.10	5.41	9.94	3.83
Emery	1.17	3.40	5.55	2.99	1.35	3.24	7.67
Grand	0.34	0.12	0.00	0.18	0.00	0.86	0.00
San Juan	0.00	0.12	0.12	0.37	0.00	0.43	0.27
REGIONAL TOTALS	7.87	6.57	10.48	19.66	6.76	14.47	11.78
Unknown counties	0.50	1.88	2.05	0.00	0.00	0.00	2.73
Mixed counties	4.52	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100

Table 15. Statewide summary of snowshoe hare harvest statistics, 1975-87.

Year	Total Hunters	Total Harvest	Hunters-days Afield	Hares Per Hunter-day	Hares Per Hunter
1975	12,072	19,770	19,770	0.61	2.03
1976	15,500	20,367	20,367	0.76	1.82
1977	21,232	26,535	26,535	0.80	2.18
1978	34,535	30,155	30,155	1.15	4.21
1979	14,641	18,115	18,115	0.81	2.16
1980	7,603	11,140	11,140	0.68	1.88
1981	7,750	12,782	12,782	0.61	2.18
1982	9,257	13,073	13,073	0.71	2.18
1983	6,302	11,088	11,088	0.57	1.78
1984	6,455	10,840	10,840	0.60	1.70
1985	3,429	9,494	9,494	0.36	1.02
1986	3,544	9,541	9,541	0.37	1.08
1987	3,702	6,005	8,947	0.67	1.62
<hr/>					
TOTALS (1975-87)	68,738	148,325	201,847	8.70	25.84
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AVERAGES (1975-86)	5,420	11,860	16,075	0.74	2.19
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A P P E N D I X

APPENDIX A

WEATHER CONDITIONS

Weather information used in this report is from the office of the Utah State Climatologist and N.O.A.A. Climatological Data Periodical. (Table 1, 2 and Figures 1 and 2.)

The 1986-87 winter weather was mild again. Below average precipitation fell between October and March and only January was colder than normal. This should have led to good hatching success for most upland game.

Temperatures remained above average until July and August. Mean temperatures averaged 3° and 4° F below normal in July and August, respectively. This cooler weather and above average precipitation may have reduced brood survival for some upland game populations and triggered an early migration of mourning doves.

Table 1. Comparison of 1987 monthly average temperatures (F) to the normal for each weather division and statewide.

Weather Division	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
No. 1 WESTERN												
Normal	26.9	32.7	38.7	47.0	56.5	65.7	74.4	72.0	62.4	50.5	37.2	28.4
1987	22.3	33.9	39.3	52.4	58.8	68.2	70.7	70.7	62.6	52.9	37.2	26.3
Departure (degrees)	-4.6	+1.2	+0.6	+5.4	+2.3	+2.5	-3.7	-1.3	+0.2	+2.4	0.0	-2.1
No. 2 DIXIE												
Normal	38.7	43.9	48.8	56.4	65.4	75.2	82.0	79.7	72.6	61.5	47.8	39.8
1987	37.9	44.1	47.7	60.5	67.6	79.2	79.4	78.6	73.1	64.9	47.2	37.1
Departure (degrees)	-0.8	+0.2	-1.1	+4.1	+2.2	+4.0	-2.6	-1.1	+0.5	+3.4	-0.6	-2.7
No. 3 NORTH CENTRAL												
Normal	27.0	31.9	38.6	47.4	57.1	65.9	74.6	72.2	63.1	51.3	38.0	28.9
1987	24.2	34.6	40.4	54.0	59.9	68.6	71.7	70.9	63.9	54.4	38.9	28.3
Departure (degrees)	-2.8	+2.7	+1.8	+6.6	+2.8	+2.7	-2.9	-1.3	+0.8	+3.1	+0.9	-0.6
No. 4 SOUTH CENTRAL												
Normal	27.1	31.6	37.0	44.9	54.0	63.1	70.4	68.0	60.2	49.8	37.1	28.8
1987	25.0	32.3	36.2	49.9	55.0	66.0	67.8	67.2	61.0	52.7	36.7	26.4
Departure (degrees)	-2.1	+0.7	-0.8	+5.0	+1.0	+2.9	-2.6	-0.8	+0.8	+2.9	-0.4	-2.4
No. 5 NORTHERN MOUNTAINS												
Normal	21.2	24.7	30.6	40.0	49.6	57.6	65.3	63.1	55.0	44.9	32.0	23.6
1987	19.5	27.8	31.9	46.1	51.9	60.4	63.7	62.0	56.4	47.9	32.8	22.0
Departure (degrees)	-1.7	+3.1	+1.3	+6.1	+2.3	+2.8	-1.6	-1.1	+1.4	+3.0	+0.8	-1.6
No. 6 UTAH BASIN												
Normal	17.2	24.1	35.5	46.2	56.2	64.9	72.1	69.3	60.3	48.5	33.5	21.2
1987	20.5	31.8	36.2	50.5	57.8	67.5	70.3	67.9	60.6	50.8	35.6	21.8
Departure (degrees)	+3.3	+7.7	+0.7	+4.3	+1.6	+2.6	-1.8	-1.4	+0.3	+2.3	+2.1	+0.6
No. 7 SOUTHEAST												
Normal	27.0	33.8	41.0	50.2	59.8	69.7	76.6	73.8	65.4	53.7	39.5	29.3
1987	27.0	35.5	39.9	54.1	61.2	72.4	73.7	72.4	65.8	56.5	39.7	28.6
Departure (degrees)	0.0	+1.7	-1.1	+3.9	+1.4	+2.7	-2.9	-1.4	+0.4	+2.8	+0.2	-0.7
STATE AVERAGES												
Normal	26.4	31.8	38.6	47.4	56.9	66.0	73.6	71.2	62.7	51.5	37.9	28.6
1987	25.2	34.3	38.8	52.5	58.9	68.9	71.0	69.9	63.3	54.3	38.3	27.2
Departure (degrees)	-1.2	+2.5	+0.2	+5.1	+2.0	+2.9	-2.6	-3.7	+0.6	+2.8	+0.4	-1.4

Table 2. Comparison of 1987 monthly average precipitation to the normal for each weather division and statewide.

Weather Division	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
No. 1 WESTERN												
Normal	0.59	0.57	0.74	0.81	0.91	0.67	0.63	0.72	0.55	0.65	0.62	0.54
1987	0.56	0.80	1.11	0.30	1.57	0.39	1.33	0.89	0.11	1.23	1.22	0.60
Departure (inches)	-0.03	+0.23	+0.37	-0.51	+0.66	-0.28	+0.70	+0.17	-0.44	+0.58	+0.60	+0.06
No. 2 DIXIE												
Normal	1.35	1.36	1.42	0.82	0.66	0.36	0.78	1.01	0.76	0.78	0.99	0.96
1987	1.51	1.11	1.65	0.47	1.15	0.46	1.41	1.40	0.06	2.54	2.80	0.52
Departure (inches)	+0.16	-0.25	+0.23	-0.35	+0.49	+0.10	+0.63	+0.39	-0.70	+1.76	+1.81	-0.44
No. 3 NORTH CENTRAL												
Normal	1.56	1.39	1.60	1.96	1.60	1.19	0.65	0.95	0.99	1.31	1.34	1.41
1987	1.59	1.33	1.52	0.57	3.19	0.45	1.31	1.12	0.17	1.26	1.83	1.26
Departure (inches)	+0.03	-0.06	-0.08	-1.39	+1.59	-0.74	+0.66	+0.17	-0.82	-0.05	+0.49	-0.15
No. 4 SOUTH CENTRAL												
Normal	1.09	1.06	1.15	1.04	0.94	0.54	0.96	1.31	1.00	0.92	0.98	0.97
1987	0.85	1.14	1.48	0.37	1.41	0.40	1.44	1.91	0.41	1.78	1.93	1.00
Departure (inches)	-0.24	+0.08	+0.33	-0.67	+0.47	-0.14	+0.48	+0.60	-0.59	+0.86	+0.95	+0.03
No. 5 NORTHERN MOUNTAINS												
Normal	2.16	1.92	1.89	1.88	1.54	1.17	0.88	1.23	1.15	1.45	1.62	1.98
1987	1.59	1.04	1.78	0.36	2.45	0.60	1.97	1.62	0.29	1.27	1.47	1.43
Departure (inches)	-0.57	-0.88	-0.11	-1.52	+0.91	-0.57	+1.09	+0.39	-0.86	-0.18	-0.15	-0.55
No. 6 UINTAH BASIN												
Normal	0.51	0.45	0.57	0.68	0.78	0.72	0.58	0.81	0.71	0.87	0.54	0.61
1987	0.46	0.62	0.94	0.30	1.66	0.19	1.86	1.48	0.06	1.24	0.97	0.59
Departure (inches)	-0.05	+0.17	+0.37	-0.38	+0.88	-0.53	+1.28	+0.67	-0.65	+0.37	+0.43	-0.02
No. 7 SOUTHEAST												
Normal	0.72	0.61	0.64	0.61	0.67	0.40	0.77	1.05	0.78	1.09	0.73	0.74
1987	0.71	0.99	0.97	0.46	0.90	0.22	1.81	1.76	0.35	1.75	2.01	0.82
Departure (inches)	-0.01	+0.38	+0.33	-0.15	+0.23	-0.18	+1.04	+0.71	-0.43	+0.66	+1.28	+0.08
STATE AVERAGES												
Normal	1.14	1.05	1.14	1.11	1.01	0.72	0.75	1.01	0.85	1.01	0.97	1.03
1987	1.04	1.00	1.35	0.40	1.76	0.39	1.59	1.45	0.21	1.58	1.75	0.89
Departure (inches)	-0.10	-0.05	+0.21	-0.71	+0.75	-0.33	+0.84	+0.44	-0.64	+0.57	+0.78	-0.14

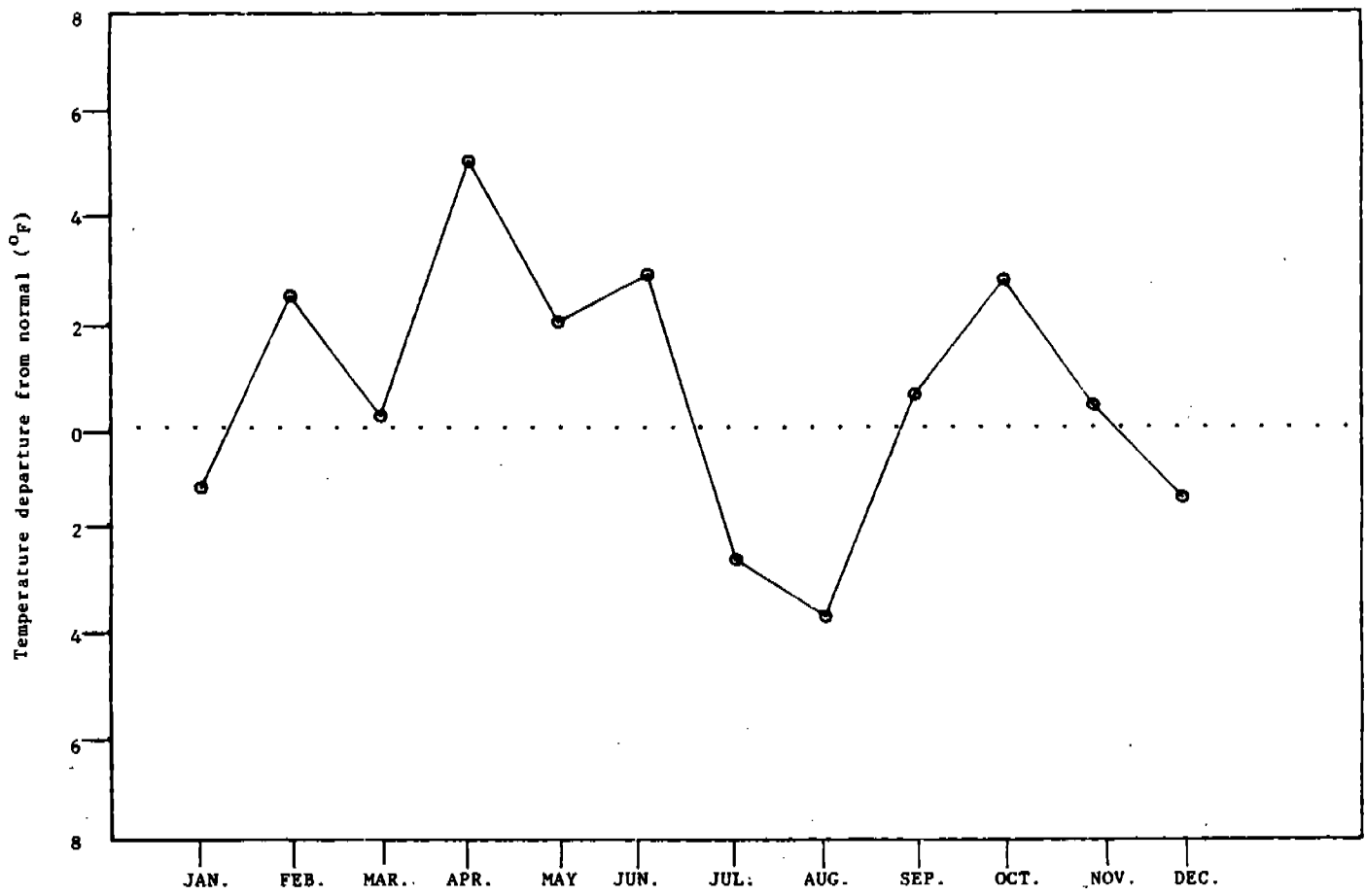


Figure 1. Monthly average temperature departure from normal, 1987.

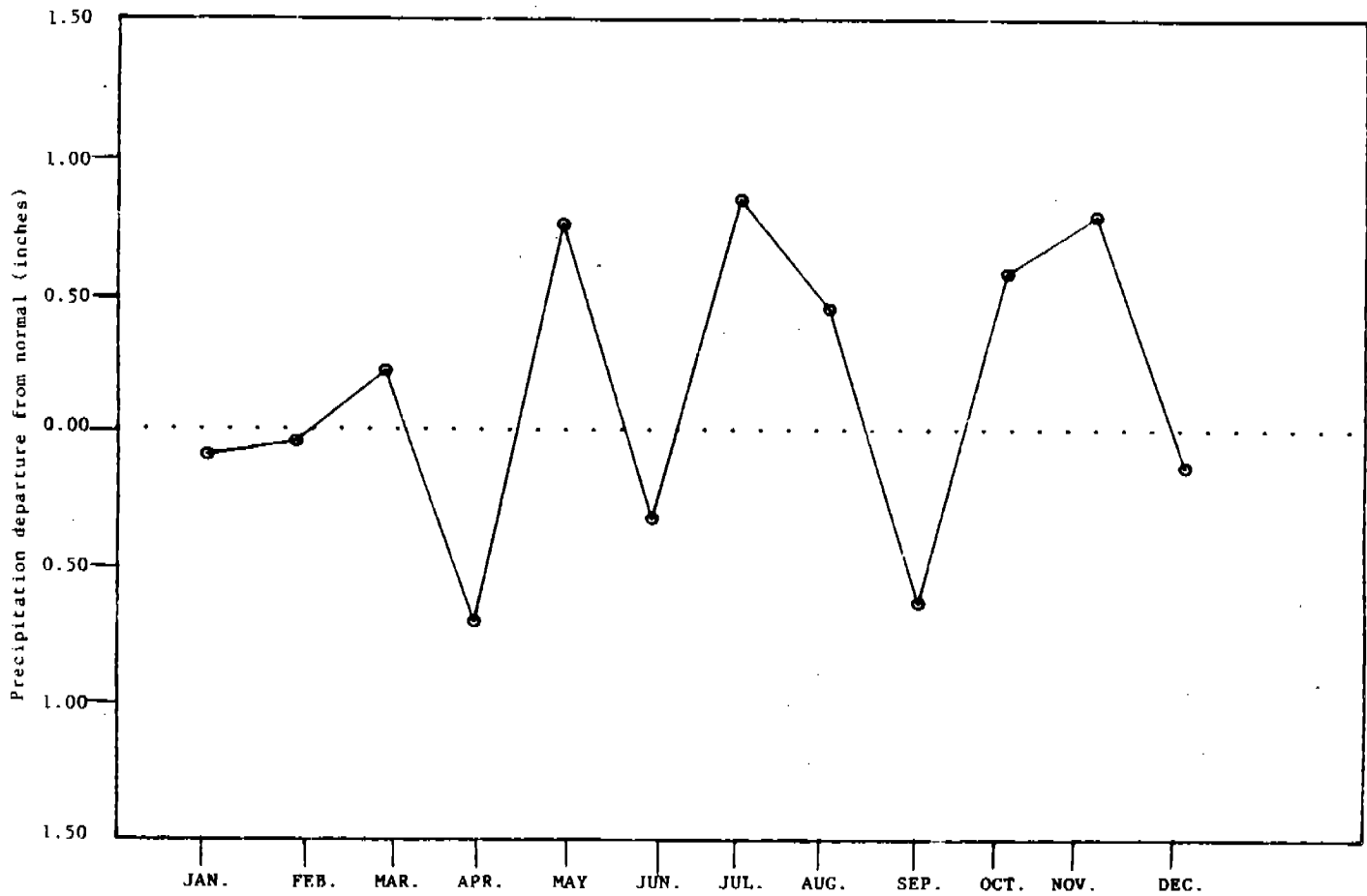


Figure 2. Monthly average precipitation departure from normal, 1987.

APPENDIX B

LICENSE SALES

Small game license sales by type and cost are listed in Table 1. The number of licenses sold for all types decreased slightly in 1987 for the third straight year. Likewise, the proportion of Utah's population hunting small game is declining (Table 2). In the early 1970's about 10 percent of Utah's population was hunting small game. By 2000, we project that only 5 percent will be hunting small game.

Table 3 identifies revenue generated to Utah Division of Wildlife Resources from small game license sales. Small game program budgets run about half the revenue generated, with the other half going to support services such as law enforcement, administration, accounting, and field service.

Table 1. Statewide small game license sales information, 1954-87.

Year	Adult Res. Small Game		Juv. Res. Small Game		Non. Res. Small Game		Combination	
	No.	Cost	No.	Cost	No.	Cost	No.	Cost
1954	12,990	3.50	5,170	2.00	561	15.00	79,574	6.00
1955	12,086	3.50	5,369	2.00	478	15.00	79,960	6.00
1956	12,102	3.50	5,735	2.00	524	15.00	80,968	6.00
1957	12,239	3.50	6,192	2.00	505	15.00	81,271	6.00
1958	14,290	3.50	6,563	2.00	696	15.00	85,198	6.00
1959	13,421	3.50	5,966	2.00	669	15.00	90,069	6.00
1960	12,020	3.50	5,022	2.00	576	15.00	90,085	6.00
1961	12,177	3.50	6,108	2.00	617	15.00	88,180	6.00
1962	12,953	3.50	6,536	2.00	607	15.00	91,412	6.00
1963	13,365	3.50	6,319	2.00	642	15.00	94,768	6.00
1964	13,073	3.50	6,453	2.00	681	15.00	98,556	6.00
1965	12,913	3.50	6,755	2.00	716	15.00	100,410	6.00
1966	13,854	3.50	7,477	2.00	725	15.00	103,849	6.00
1967	18,588	4.50	12,851	2.50	652	20.00	86,218	10.00
1968	20,647	4.50	15,205	2.50	703	20.00	91,020	10.00
1969	20,221	4.50	15,567	2.50	853	20.00	96,117	10.00
1970	19,564	4.50	15,827	2.50	1,009	20.00	100,467	10.00
1971	20,681	4.50	16,044	2.50	1,000	20.00	102,284	10.00
1972	19,796	4.50	16,523	2.50	1,075	20.00	107,414	10.00
1973	18,836	4.50	16,522	2.50	964	20.00	115,436	10.00
1974	17,434	4.50	16,334	2.50	974	20.00	117,770	10.00
1975	17,057	4.50	15,869	2.50	967	20.00	115,362	10.00
1976	33,078	6.00	16,261	3.00	1,141	20.00	76,587	18.00
1977	36,473	6.00	15,795	3.00	1,270	20.00	74,600	18.00
1978	37,082	6.00	15,419	3.00	1,449	20.00	81,227	18.00
1979	36,721	6.00	14,200	3.00	1,575	20.00	84,450	18.00
1980	30,189	8.00	14,042	4.00	1,330	30.00	100,177	23.00
1981	37,804	8.00	13,874	4.00	1,559	30.00	83,486	23.00
1982	36,850	8.00	14,040	4.00	1,637	30.00	82,970	23.00
1983	39,602	8.00	13,814	4.00	1,685	30.00	73,529	23.00
1984	36,070	8.00	13,170	4.00	1,633	30.00	73,081	23.00
1985	30,102	12.00	12,987	6.00	1,500	40.00	82,137	35.00
1986	29,202	12.00	11,921	6.00	1,274	40.00	67,187	35.00
1987	26,781	12.00	11,228	6.00	1,235	40.00	66,715	35.00

Table 2. Actual (1971-1987) and projected (1990-2000) proportion of Utah population hunting small game based upon assumption of improved sportsman access to private lands and successful transplants of turkey, chukar, and hungarian partridge on public lands.

Year	Utah Population	Licenses Sold			Proportion Hunting Small Game
		RSG ¹	NRSG	Total	
1954	750,000		561		
1955	783,000		478		
1956	809,000		524		
1957	826,000		505		
1958	845,000		696		
1959	870,000		669		
1960	890,627		576		
1961	936,000		617		
1962	958,000		607		
1963	974,000		642		
1964	978,000		681		
1965	991,000		716		
1966	1,009,000		725		
1967	1,019,000		652		
1968	1,029,000		703		
1969	1,047,000		853		
1970	1,059,273		1,009		
1971	1,101,000	101,421	1,000	101,521	9.2
1972	1,135,000	110,691	1,075	111,766	9.8
1973	1,169,000	115,129	964	116,093	9.8
1974	1,197,000	112,963	974	113,937	9.4
1975	1,234,000	108,636	967	109,603	8.8
1976	1,272,000	85,268	1,141	86,409	6.7
1977	1,316,000	86,549	1,270	87,819	6.6
1978	1,364,000	95,637	1,449	97,086	7.0
1979	1,416,000	100,116	1,575	101,691	7.1
1980	1,461,037	110,039	1,330	111,369	7.5
1981	1,524,830	103,041	1,559	104,600	6.8
1982	1,588,622	99,744	1,637	101,381	6.3
1983	1,652,415	93,303	1,685	94,988	5.6
1984	1,716,207	88,084	1,633	89,717	5.2
1985	1,780,000	94,991	1,500	96,491	5.4
1986a	1,665,000	82,777	1,274	84,051	5.0
1987a	1,678,000	85,099	1,235	86,334	5.0
1990	1,988,650	110,000	2,250	112,250	5.5
1995	2,134,250	115,000	2,500	117,500	5.4
2000	2,258,450	120,000	3,000	123,000	5.3

¹Adjusted for waterfowl hunters subtracted from combination licenses, R.S.G. = Adjusted combination plus juvenile small game plus adult small game.

²Utah Statistical Abstracts 1984 - projections constitute the December 1982 official State of Utah baseline projections (Office of State Planning Coordinator and Bureau of Economic and Business Research, University of Utah).

³Utah Population Estimate Committee Report for July 1

Table 3. Small game license sales and income, 1971-87 (JSG=juvenile small game, RSG=adult resident small game, CMB=combination license, NRSNG=nonresident small game).

Year	License Fees			Number of Licenses Sold			No. Federal		Total Gross Revenue Attributed to Small Game (\$)				
	JSG	RSG	CMB	JSG ⁴	RSG	CMB	NRSNG	Duck Stamp Sold ³	JSG ⁴	RSG	CMB ²	NRSNG	TOTAL ¹
1971	2.50	4.50	10.00	16,044	20,681	102,284	1,000	37,588	20,055	93,064	200,557	20,000	336,676
1972	2.50	4.50	10.00	16,523	19,796	107,414	1,075	33,042	20,653	89,082	230,553	21,500	361,789
1973	2.50	4.50	10.00	16,522	18,836	115,436	964	35,665	20,652	84,762	247,290	19,280	371,985
1974	2.50	4.50	10.00	16,334	17,434	117,770	974	38,575	20,417	78,453	245,504	19,480	363,855
1975	2.50	4.50	10.00	15,869	17,057	115,362	967	39,652	19,836	76,756	234,701	19,340	350,633
1976	3.00	6.00	18.00	16,261	33,078	76,587	1,141	40,658	24,391	198,468	184,675	22,820	430,355
1977	3.00	6.00	18.00	15,795	36,473	74,600	1,270	40,319	23,692	218,838	176,204	25,400	434,135
1978	3.00	6.00	18.00	15,419	37,082	81,227	1,449	38,091	23,128	222,492	221,719	28,980	556,320
1979	3.00	6.00	18.00	14,200	36,721	84,450	1,575	35,255	21,300	220,326	252,862	31,500	525,988
1980	4.00	8.00	23.00	14,042	30,189	100,177	1,330	34,369	28,084	241,512	425,120	39,900	734,616
1981	4.00	8.00	23.00	13,874	37,804	83,486	1,559	32,123	27,748	302,432	331,805	46,770	708,755
1982	4.00	8.00	23.00	14,040	36,850	82,970	1,637	34,116	28,080	294,800	315,597	49,110	709,087
1983	4.00	8.00	23.00	13,814	39,602	73,529	1,685	33,642	25,620	305,249	257,670	50,134	638,672
1984	4.00	8.00	23.00	13,170	36,070	73,081	1,633	34,237	26,340	288,560	250,544	48,990	614,434
1985	6.00	12.00	35.00	12,987	30,102	82,137	1,500	30,235	38,961	361,224	484,246	60,000	944,431
1986	6.00	12.00	35.00	11,946	29,567	67,435	1,274	25,533	35,838	354,804	395,973	50,960	837,575
1987	6.00	12.00	35.00	11,228	26,781	66,715	1,235	19,625	33,684	321,372	439,350	49,400	843,806

¹Value does not include cougar, bear, turkey permits and commercial hunting area licenses.

²Combination license values are based on the assumption that all waterfowl hunters purchased only combination licenses. They may fish and hunt big game but they do not hunt any other small game. Therefore, duck stamp sales are subtracted from combination license sale when projecting revenue generated. The proportion of the combination license fee attributed to small game equals the resident small game license fee divided by the resident fishing license fee plus the resident big game license fee plus the resident small game license fee or \$9.33 for 1987.

³Total federal duck stamps sold does not include those sold during the second quarter, April-June, because persons purchasing stamps during this quarter tend not to be hunters.

⁴Half of the juvenile small game license sales were attributed to waterfowl hunters. Federal Duck Stamps are not required of juveniles less than 16 years of age.

APPENDIX C: Regional and statewide summary of effort expended on upland game summer surveys.

Generally hours spent and miles driven on upland game surveys in Utah have declined since 1971. This is the result of competing uses of time for biologists and conservation officers. When effort and results have reached a lower critical sample size, surveys have been eliminated.

Table 1. Regional and statewide summary of effort expended on upland game summer inventory, 1971-87.

Species	R E G I O N											STATE TOTALS		
	Northern		Central		Southern		Northeastern		Southeastern		STATE TOTALS			
	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours		
<u>Pheasant</u>														
1971	507	--	878	--	796	--	588	--	346	--	3,115	--		
1972	469	--	963	--	752	--	535	--	297	--	3,016	--		
1973	322	--	691	--	740	--	488	--	320	--	2,561	--		
1974	479	--	819	--	848	--	508	--	317	--	2,971	--		
1975	490	--	846	--	993	--	515	--	393	--	3,237	--		
1976	476	--	822	--	773	--	434	--	400	--	2,905	--		
1977	484	--	731	--	790	--	554	--	343	--	2,902	--		
1978	479	--	642	--	654	--	512	--	588	--	2,875	--		
1979	438	--	642	--	721	--	562	--	209	--	2,572	--		
1980	358	--	672	--	750	--	546	--	270	--	2,596	--		
1981	459	--	525	--	801	--	535	--	330	--	2,650	--		
1982	437	--	639	--	583	--	477	--	332	--	2,468	--		
1983	260	--	442	--	780	--	426	--	330	--	2,238	--		
1984	444	--	359	--	473	--	463	--	166	--	1,905	--		
1985	383	--	303	--	650	--	492	--	180	--	2,008	--		
1986	455	--	617	--	669	--	520	--	270	--	2,531	--		
1987	432	--	518	--	574	--	546	--	90	--	2,160	--		
<u>Quail</u>														
1971	192	24	289	40	344	28	587	49	140	13	1,652	154		
1972	46	9	342	30	575	39	870	63	120	8	1,953	149		
1973	80	10	264	35	32	8	538	38	25	17	939	108		
1974	24	4	43	27	853	66	227	28	214	21	1,361	146		
1975	27	8	107	23	841	64	594	43	230	12	1,799	150		
1976	81	10	206	29	503	62	597	44	75	10	1,462	155		
1977	22	4	351	39	445	42	341	26	60	16	1,219	127		
1978	--	--	239	18	563	61	541	46	88	17	1,431	142		
1979	68	11	95	7	478	41	346	32	15	6	1,002	97		
1980	36	9	265	23	240	36	410	34	0	0	951	102		
1981	58	11	180	12	329	43	366	31	0	3	933	100		
1982	0	0	151	14	304	44	475	44	0	0	930	102		
1983	5	9	93	9	562	61	295	26	0	0	955	105		
1984	--	--	82	8	266	40	--	--	--	--	348	48		
1985	--	2	82	5	252	33	--	--	--	--	334	40		
1986	--	--	10	2	306	28	--	--	--	--	316	30		
1987	--	1	20	2	257	29	--	--	--	--	277	31		

Table 1 (continued)

Species	R E G I O N												STATE TOTALS	
	Northern		Central		Southern		Northeastern		Southeastern		STATE TOTALS		Miles	Hours
	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours
Chukar														
1971	182	82	929	130	1,103	100	636	50	496	105			3,346	468
1972	712	91	1,423	131	950	37	1,012	69	984	58			5,081	386
1973	1,063	119	1,494	167	72	10	705	48	702	68			4,036	363
1974	125	31	1,591	107	564	43	440	30	1,115	67			3,835	278
1975	188	30	808	85	892	41	908	88	786	55			3,582	299
1976	875	75	964	110	465	32	727	67	687	66			3,718	350
1977	405	50	1,198	120	601	37	600	71	429	44			3,233	322
1978	359	28	459	42	135	14	315	23	536	52			1,804	159
1979	546	54	793	76	415	22	293	23	267	14			2,314	199
1980	283	68	1,668	124	235	12	0	0	53	10			2,239	214
1981	330	56	591	49	147	11	245	21	260	32			1,573	169
1982	473	34	571	56	475	35	260	37	101	9			1,880	171
1983	17	15	190	17	20	2	488	44	103	7			818	85
1984	654	81	303	32	--	--	--	--	118	16			1,075	129
1985	236	73	453	36	--	--	--	--	174	12			903	135
1986	394	65	432	37	--	--	135	14	--	--			961	116
1987	813	119	398	36	0	3	305	32	175	23			1,691	213
Forest Grouse														
1971	1,201	240	785	173	796	249	794	77	440	89			4,016	828
1972	1,370	212	804	103	214	260	1,346	140	351	82			4,085	797
1973	627	127	917	105	296	429	949	147	761	72			3,550	880
1974	967	152	924	157	157	461	1,090	99	1,574	133			4,712	1,002
1975	1,194	199	1,287	160	775	629	1,474	136	1,476	135			6,206	1,259
1976	1,516	351	1,503	216	427	271	1,108	140	1,127	134			5,681	1,112
1977	737	132	1,317	162	610	286	1,040	135	1,079	128			4,783	843
1978	1,300	297	1,171	129	432	219	1,083	147	626	114			4,612	906
1979	746	344	1,312	177	714	275	729	107	435	42			3,936	945
1980	577	201	1,260	158	160	230	502	74	266	39			2,765	702
1981	688	147	958	147	575	295	835	120	184	29			3,240	738
1982	506	74	1,488	157	--	354	742	111	--	--			2,736	696
1983	1,049	218	1,180	93	459	80	636	93	--	--			3,324	504
1984	615	157	364	30	230	78	--	--	--	--			1,209	305
1985	858	202	436	52	564	90	--	--	--	--			1,858	384
1986	997	127	380	41	254	51	412	61	--	--			2,043	280
1987	1,148	147	305	77	200	65	438	58	--	--			2,091	350

Table 1 (continued)

Species	R E G I O N												STATE TOTALS	
	Northern		Central		Southern		Northeastern		Southeastern		STATE TOTALS		Miles	Hours
	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours
Sage Grouse														
1971	1,743	296	909	145	1,423	98	1,465	144	1,089	128	6,629	812		
1972	1,628	323	1,187	143	751	144	2,125	170	1,280	141	6,971	921		
1973	3,146	353	927	147	1,171	116	1,952	238	496	41	7,692	895		
1974	2,026	321	1,551	115	1,881	193	2,964	248	887	124	9,299	1,001		
1975	1,254	249	963	123	714	226	1,868	236	1,098	131	5,897	965		
1976	1,965	281	426	121	379	183	1,881	227	1,222	161	5,873	973		
1977	1,966	305	1,370	133	465	157	1,995	215	928	116	6,724	926		
1978	1,408	267	541	124	490	152	1,616	226	879	97	4,934	866		
1979	1,051	150	700	132	563	143	1,719	203	279	20	4,312	648		
1980	1,003	218	806	150	518	94	1,471	184	278	30	4,076	676		
1981	619	194	691	99	285	57	771	163	377	39	2,743	552		
1982	1,669	169	762	92	454	83	862	116	--	--	3,747	460		
1983	610	158	720	164	284	51	992	125	108	10	2,714	508		
1984	1,411	278	283	82	289	54	530	95	151	17	2,664	526		
1985	2,164	169	481	74	410	45	666	84	106	9	3,827	381		
1986	1,024	197	281	39	169	43	948	94	146	14	2,568	387		
1987	1,939	205	172	37	286	50	1,114	124	195	18	3,706	434		
Hungarian Partridge														
1971	676	85	104	18	--	--	--	--	--	--	780	103		
1972	1,255	119	126	21	--	--	--	--	--	--	1,381	139		
1973	1,643	156	12	4	--	--	--	--	--	--	1,655	160		
1974	1,035	176	14	2	--	--	--	--	--	--	1,049	178		
1975	344	64	0	0	--	--	--	--	--	--	344	64		
1976	940	83	113	21	--	--	--	--	--	--	1,053	104		
1977	1,145	156	125	5	--	--	--	--	--	--	1,270	161		
1978	1,065	90	197	17	--	--	--	--	--	--	1,262	107		
1979	440	27	37	3	--	--	--	--	--	--	477	30		
1980	250	55	50	6	--	--	--	--	--	--	300	61		
1981	270	23	65	3	--	--	--	--	--	--	330	26		
1982	324	39	--	--	--	--	--	--	--	--	324	39		
1983	0	60	--	--	--	--	--	--	--	--	0	60		
1984	815	221	--	--	--	--	--	--	--	--	815	221		
1985	114	38	--	--	--	--	--	--	--	--	114	38		
1986	213	44	--	--	--	--	--	--	--	--	213	44		
1987	300	40	--	--	--	--	--	--	--	--	300	40		

Table 1 (continued)

Species	R E G I O N												STATE TOTALS	
	Northern		Central		Southern		Northeastern		Southeastern		Miles		Hours	
	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours
<u>Wild Turkey</u>														
1971	--	--	--	--	726	73	--	--	--	--	215	28	941	101
1972	--	--	--	--	73	62	--	--	--	290	54	54	363	116
1973	--	--	--	--	143	11	--	--	--	--	--	--	143	11
1974	--	--	--	--	0	0	--	--	--	799	64	64	799	64
1975	--	--	--	--	215	18	--	--	--	792	100	100	1,007	118
1976	--	--	--	--	125	16	--	--	--	362	45	45	487	61
1977	--	--	--	--	193	29	--	--	--	421	58	58	614	87
1978	--	--	--	--	--	--	--	--	--	204	55	55	204	55
1979	--	--	--	--	--	--	--	--	--	190	14	14	190	14
1980	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1981	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1982	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1983	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1984	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1985	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1986	--	--	--	--	--	--	--	--	--	--	41	15	41	15
1987	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<u>Cottontail</u>														
1971	338	--	330	--	1,054	--	410	--	570	--	570	--	2,702	--
1972	510	--	279	--	939	--	360	--	555	--	555	--	2,643	--
1973	337	--	242	--	849	--	270	--	270	--	270	--	1,968	--
1974	270	--	180	--	1,040	--	370	--	542	--	542	--	2,402	--
1975	330	--	231	--	1,237	--	340	--	712	--	712	--	2,850	--
1976	510	--	260	--	1,372	--	300	--	626	--	626	--	3,068	--
1977	360	--	262	--	1,329	--	400	--	556	--	556	--	2,907	--
1978	382	--	264	--	1,038	--	300	--	761	--	761	--	2,745	--
1979	270	--	264	--	1,174	--	388	--	390	--	390	--	2,486	--
1980	90	--	265	--	655	--	359	--	540	--	540	--	1,909	--
1981	270	--	270	--	903	--	400	--	580	--	580	--	2,423	--
1982	240	--	240	--	722	--	298	--	602	--	602	--	2,102	--
1983	90	--	90	--	822	--	340	--	590	--	590	--	1,932	--
1984	--	--	177	--	356	--	340	--	196	--	196	--	1,069	--
1985	--	--	175	--	631	--	400	--	450	--	450	--	1,656	--
1986	240	--	148	--	534	--	358	--	330	--	330	--	1,610	--
1987	150	--	120	--	669	--	373	--	240	--	240	--	1,552	--

APPENDIX D: Season dates, bag limits and areas open by upland game species, 1987.

Species	Season Dates	Daily Bag Limit	Possession Limit	Area Open
Pheasant	Oct. 31-Nov. 13	2 cocks	4 cocks	Statewide
	Oct. 31-Nov. 30	2 cocks	4 cocks	All state and federal lands (subject to restrictions and closures imposed by administering agencies) in Carbon, Duchesne, Emery, Grand, Juab, San Juan, Sanpete, Tooele, and Uintah counties.
Mourning dove	Sept. 1-30	10	20	Statewide.
Band-tailed pigeon	Sept. 1-30	5	10	Beaver, Garfield, Grand, Iron, Kane, Millard, Piute, San Juan, Sanpete, Sevier, Utah, Washington and Wayne counties.
Chukar	Sept. 12-Nov. 30	5	10	Cache, Davis, Morgan, Piute, Rich, Summit, Wasatch, and Weber counties and portions of the following counties lying east of Interstate 15: Beaver, Box Elder, Iron, Salt Lake, Utah, and Washington; and those parts of Duchesne and Uintah counties south of Highway U-40; and a portion of Juab, Millard, Sanpete and Sevier counties east of Interstate 15 except a small area closed for chukar transplant.
	Sept. 12, 1987-Jan. 31, 1988	5	10	Garfield, Kane, Wayne and portions of Beaver, Box Elder, Iron, Juab, Millard, Salt Lake, Utah and Washington counties west of I-15. Also part of Tooele County.
	Sept. 12, 1987-Jan. 31, 1988	8	16	Carbon and Emery counties and parts of Grand, and San Juan counties.

APPENDIX D (continued)

Species	Season Dates	Daily Bag Limit	Possession Limit	Area Open
Sage grouse	Sept. 12-20	3	6	Garfield (part), Piute, Sevier, and Wayne counties.
	Sept. 12-20	2	4	Beaver, Box Elder (part), Daggett, Duchesne (part), Garfield (part) Grand, Iron, Kane and Uintah counties.
	Sept. 12-20	1	2	Carbon, Emery, Rich, San Juan (part), Utah (part) and Duchesne (part) counties.

The following counties were closed to sage grouse hunting during 1987:

Box Elder (part) Cache, Davis, Duchesne (part), Juab, Millard, Morgan, Salt Lake, San Juan (part), Sanpete, Summit, Tooele, Utah (part), Wasatch (part), Washington and Weber.

Forest grouse	Sept. 12- Nov. 30	4 (aggregate)	8 (aggregate)	Statewide.
Quail	Oct.31-Nov. 13	5	10	Statewide except Cache, Morgan, Rich, Summit and Washington counties.
	Oct. 31-Dec. 31	5	10	Washington County.

Cache, Morgan, Rich and Summit counties were closed to quail hunting in 1987.

Hungarian partridge	Sept. 12, 1987- Jan. 31, 1988	5	10	Part of Box Elder County west of I-15., Tooele County (part)
	Sept. 12- Nov. 30	5	10	Cache, Davis, Morgan, Rich, Summit and Weber counties; Box Elder County (part)

Table 6 (continued)

Species	Season Dates	Daily Bag Limit	Possession Limit	Area Open
Wild turkey Spring hunt	May 2-24	Season limit 1 male turkey	1	Garfield, Grand, Iron, Kane (part) Washington, Wayne and San Juan (part) counties.
Ptarmigan	Sept. 12-Oct. 13	4	4	Summit, Daggett, Duchesne and Uintah counties.
Snowshoe hare	Sept. 12, 1987- Jan. 31, 1988	5	10	Statewide.
Cottontail rabbit	Sept. 12, 1987- Jan. 31, 1988	10	20	Beaver, Box Elder (part), Carbon, Emery, Garfield, Grand, Iron, Kane, Millard, Piute, San Juan, Sevier, Washington and Wayne counties
	Sept. 12, 1987- Jan. 31, 1988	5	10	Box Elder (part), Cache, Daggett, Davis, Duchesne, Juab, Morgan, Rich, Salt Lake, Sanpete, Summit, Tooele, Uintah, Utah, Wasatch and Weber counties.

APPENDIX E. Summary of upland game harvest questionnaire returns, 1962-1987

Year	Questionnaires Mailed	Total Returns	Percent	Useable Returns	Percent	Percent of Licensees who did not hunt
1962	10,068	4,122	41.0	3,433	34.0	22.0
1963	11,058	5,062	46.0	4,325	39.0	21.0
1964	10,718	4,840	45.0	4,180	39.0	23.0
1965	11,917	6,232	53.0	--	--	34.0
1966	13,131	5,734	43.7	5,734	43.7	34.6
1967	12,012	5,764	48.0	5,764	48.0	25.1
1968	14,068	6,138	43.6	6,138	43.6	25.6
1969	15,036	6,429	42.8	6,429	42.8	28.0
1970	14,730	6,639	45.1	6,639	45.1	38.8
1971	15,149	--	43.2	--	--	--
1972	15,272	--	--	6,399	41.9	--
1973	17,572	--	--	7,999	45.5	--
1974	27,379	9,157	38.6	8,027	29.3	--
1975	26,657	10,880	40.8	9,132	34.3	--
1976	21,250	7,889	37.1	6,226	29.3	--
1977	20,984	9,329	44.5	8,099	38.6	--
1978	24,733	7,575	30.6	6,529	26.4	--
1979	27,616	10,498	38.0	9,274	33.6	26.4
1980	27,952	9,857	35.3	8,496	30.4	33.1
1981	13,925	7,941	57.0	6,367	45.4	31.4
1982	22,609	10,167	45.0	8,734	38.6	27.0
1983	23,430	10,324	44.1	9,497	40.5	28.7
1984	12,026	6,455	57.2	6,324	56.0	31.1
1985	10,772	5,904	54.8	5,843	54.2	35.2
1986	11,103	5,329	48.0	5,256	47.3	34.2
1987	10,022	4,294	42.8	4,272	42.6	30.1

Appropriation No. 01-59-07