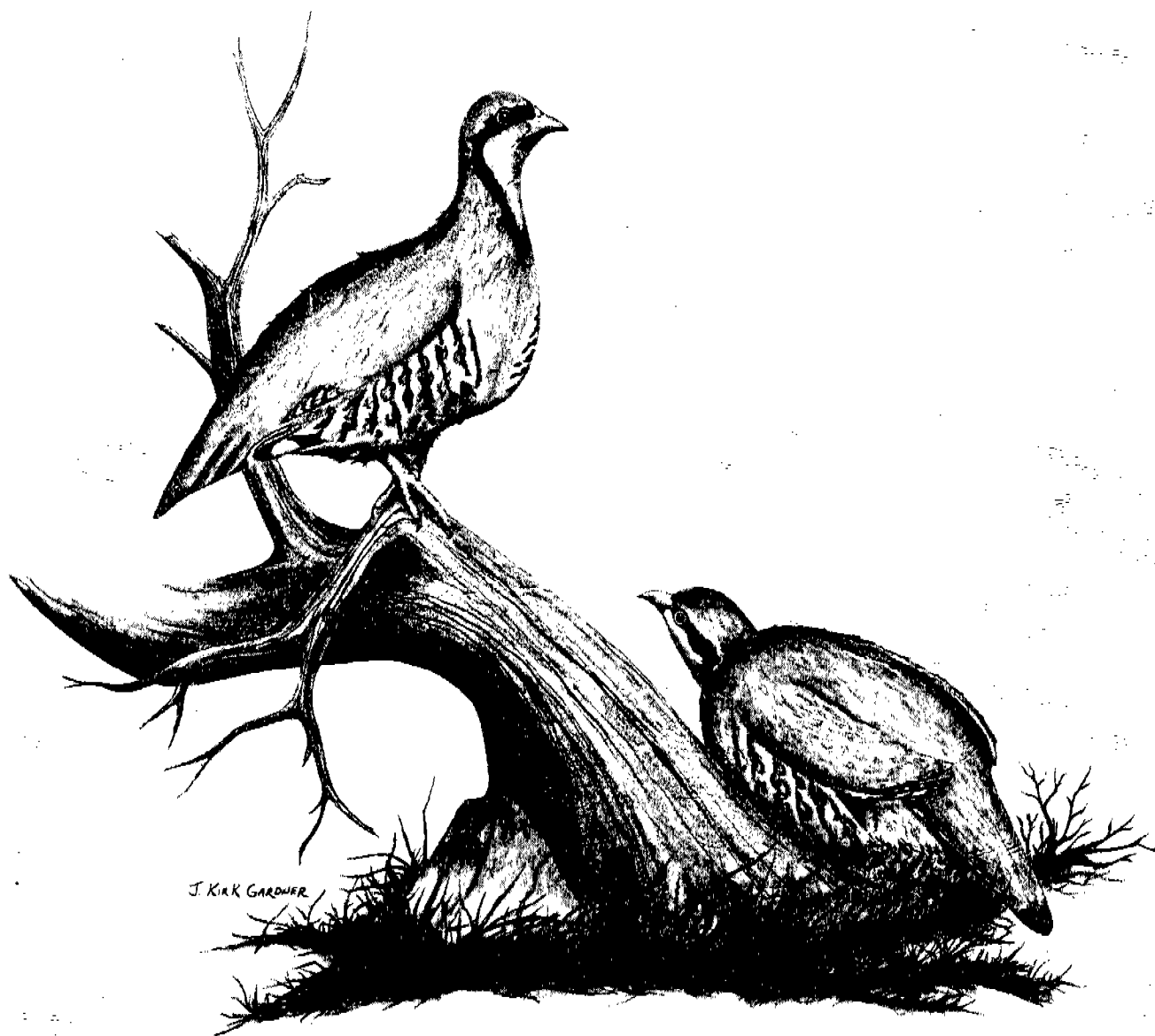


# UTAH UPLAND GAME

Annual Report 1981



Utah Department of Natural Resources and Energy  
Division of Wildlife Resources

82-8

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

Annual Report

1981

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Annual Performance Report for Federal Aid Project W-65-R-30 Job A-4

Utah Department of Natural Resources ~~and Energy~~

DIVISION OF WILDLIFE RESOURCES

An Equal Opportunity Employer

Douglas F. Day  
Director

COVER--The cover drawing was furnished compliments of wildlife  
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JOB PERFORMANCE REPORT  
RESEARCH PROJECT SEGMENT  
(Inventory)

State: U T A H Project Title: Statewide Wildlife  
Management Inventory  
Project No.: W-65-R-30 Job Title: Statewide Upland Game  
Inventory and Management  
Job No.: A-4

Period Covered: December 15, 1980 to April 30, 1982

Abstract: This report includes upland game inventory and harvest data relating to the 1981-82 hunting seasons. Results of annual inventory and harvest surveys and long-term trends of indices derived by each method are included. Data obtained in 1981 are compared to 1980 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, 1980 through February 10, 1981, 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 22-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 1980 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 and snowshoe hare, band-tailed pigeon and wild turkey. An approximate 12 percent sample of eligible licensees from the previous year's (1980) license file was selected for the game bird and rabbit and hare questionnaire. Questionnaires were mailed to all band-tailed pigeon and wild turkey permittees. Indices derived include total hunters, hunter-days, total harvest and hunter success per day plus success for each season.

The game bird and rabbit and hare questionnaires were analyzed by the University of Utah Computer Center. 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 band-tailed pigeon questionnaires were analyzed by the Game Management Section 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.

A pilot mail-in wing sample program was begun in 1981. Results of that program are included in the Appendix.

During 1981 significant improvement was made in the upland game questionnaire. A computerized pull apart mailer was developed which allowed follow-up mailings and thus provided a measure of nonrespondent bias, a more representative sample of hunters, greater handling efficiency and reduced memory bias. Data input and storage was entered on tape instead of cards and an attempt was made to stratify sample sizes by county of hunter's residence.

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 eleventh 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 1981, a total of 96,196 Utah sportsmen spent 597,033 days afield in pursuit of various upland game species. The harvest of upland game totaled 813,163. The proportion of the total upland game hunters which pursued each species is shown in Appendix Table 3 and the percentage failing to bag at least one bird of each species in Appendix Table 4. The regulations for 1981 upland game hunting seasons are shown in Appendix Table 6. Results of the upland game wing survey are also presented in the appendix.

A summary of harvest statistics by species follow.



Species	Hunters Afield	Total Harvest	Hunter Days	Bag per Hunter-day	Bag/Hunter For Season
Pheasant	83,408	234,217	265,381	0.88	2.81
Mourning dove	30,060	310,068	101,728	3.05	10.31
Chukar partridge	12,907	44,983	36,662	1.23	3.49
Sage grouse	10,083	15,857	18,617	0.85	1.57
Forest grouse	14,329	27,894	34,305	0.81	1.95
Quail	4,946	13,586	12,843	1.06	2.75
Hungarian partridge	3,545	8,916	10,147	0.88	2.52
Wild turkey					
spring	60	14	129	0.11	0.23
fall	55	12	114	0.11	0.22
Band-tailed pigeon	67	101	142	0.71	1.51
Sharp-tailed grouse	0	0	0	--	--
Cottontail	25,906	149,765	104,183	1.44	5.78
Snowshoe	3,554	7,750	12,782	0.61	2.18

---

TOTAL                                   --       813,163       597,033                   --       --

Total hunters afield for all species of upland game = 96,196

---

Harvest statistics were obtained from a random sample of licensed hunters by their response to a hunter questionnaire.

A total of 15,825 upland game bird questionnaires, an approximate 12 percent sample, were mailed. The combined upland game bird and rabbit-hare questionnaire was again used. However, the questionnaires were analyzed separately, employing the same techniques as in past years. A total of 1,900 (12%) questionnaires were undeliverable. There were 1,574 returns from persons who did not purchase a license during 1981.

Of the 13,925 questionnaires delivered, 6,367 (45.4%) usable game bird questionnaires were returned. Of those, 2,002 purchased a license but did not hunt game birds. By dividing the total of 135,164 eligible licensees by the usable returns (6,367), a projection factor of 21.228836 is derived.

A total of 6,313 (45.3%) usable rabbit and hare questionnaires were returned. Of these, 4,221 did not hunt game rabbits. There were 2,092 hunters who reported hunting cottontails and/or snowshoes. The ratio of 135,164 eligible licensees to 6,313 usable returns resulted in a projection factor of 21.410423.

Sample sizes in some of the smaller counties were increased to improve the precision of the harvest estimates. However, county of residence does not indicate county hunted and all harvest data is listed by county hunted. Thus in Rich, Garfield, Kane, Millard, Piute, Wayne, Daggett, Grand, and San Juan counties harvest estimates may be slightly over-estimated, however, harvest per day should be unbiased and more precise in these counties.



The upland game questionnaire is designed to monitor statewide harvest trends from year to year for the more extensively hunted species. Thus it less accurately measures trends in such species as quail, Hungarian partridge, and snowshoe which have limited distribution and lower densities. In an effort to improve accuracy of indices for some of these species, special questionnaires are mailed to permit holders. This technique has been, or will be used to assess harvest for such species as turkey, band-tailed pigeon, sharp-tailed grouse, white-tailed ptarmigan, and sandhill crane.

The annual harvest report is frequently criticized for being inaccurate and therefore without value. However, report users must recognize that the mailed questionnaire accuracy is based on some very basic assumptions which if untrue will bias the data. These assumptions are: (1) the 12 percent sample is a random sample of license buyers, (2) respondents recorded data in correct spaces, i.e., they clearly understood the questionnaire, (3) respondents recorded accurate data, did not guess and were truthful, 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 is the best data available and therefore constitutes the basic facts of upland game management. Our professional judgement is no better than our facts. Decisions based entirely on personal perceptions rather than facts, often lead to erroneous conclusions.

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.

The annual weather summary for 1981, prepared by State Climatologist E. Arlo Richardson, was not available for analysis. However, monthly temperature and precipitation patterns are shown by Figures 1 and 2. The 1980-81 winter was drier than normal with serious moisture deficits in existence by the end of February over the entire state (1980-81 Water Year Precipitation and Temperature Summary, Office of the State Climatologist). Average temperatures during the winter period were above normal with near record values in the eastern portion of the state. The above normal temperatures continued through the remainder of the year. May was very wet in all regions of the state, but the summer months of June, July and August were all well below normal. The timing of the precipitation did not reflect the normalcy of the totals since the abnormally high temperatures caused increased moisture requirements on all field crops and ranges.

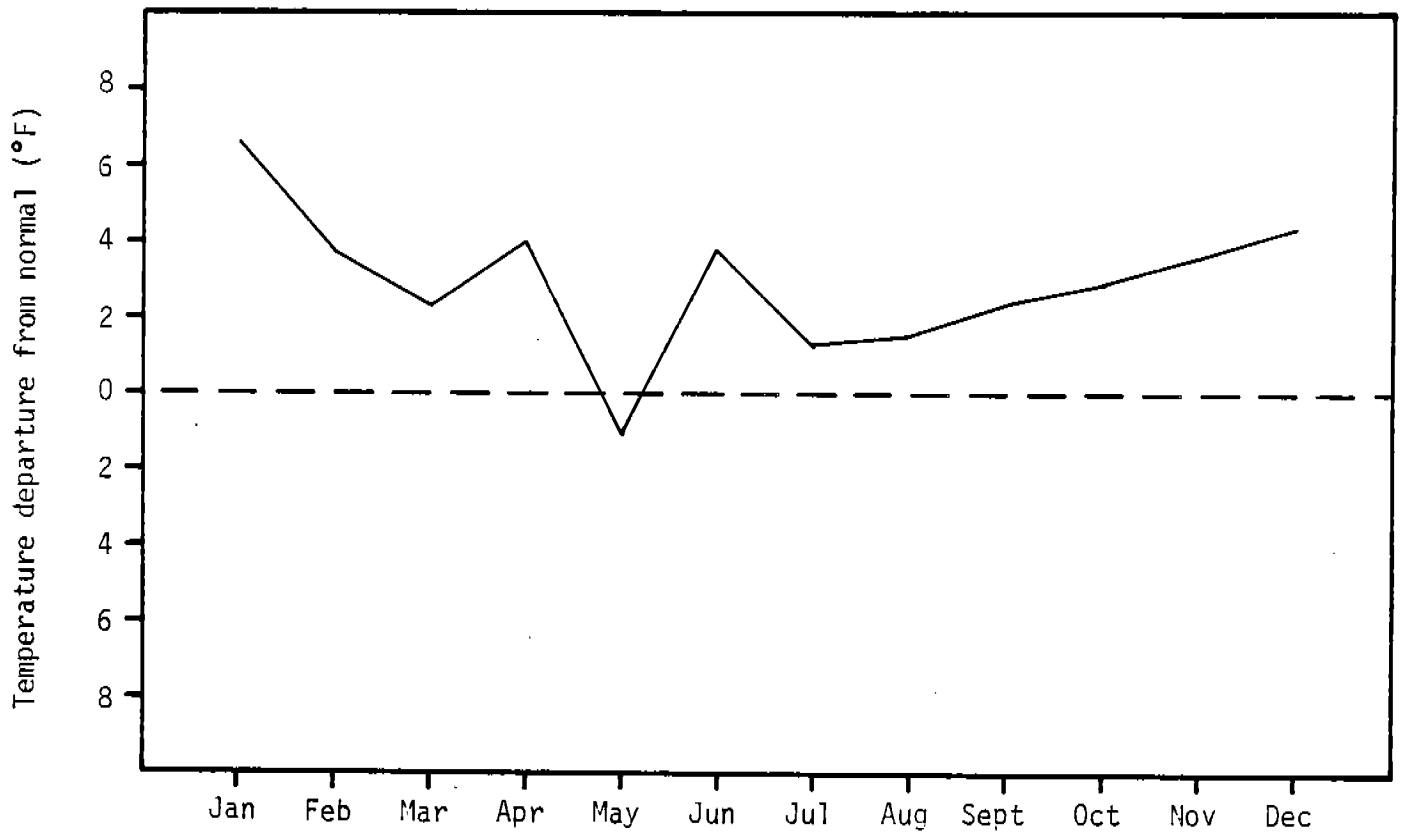


Figure 1. Monthly average temperature departure from normal, 1981.

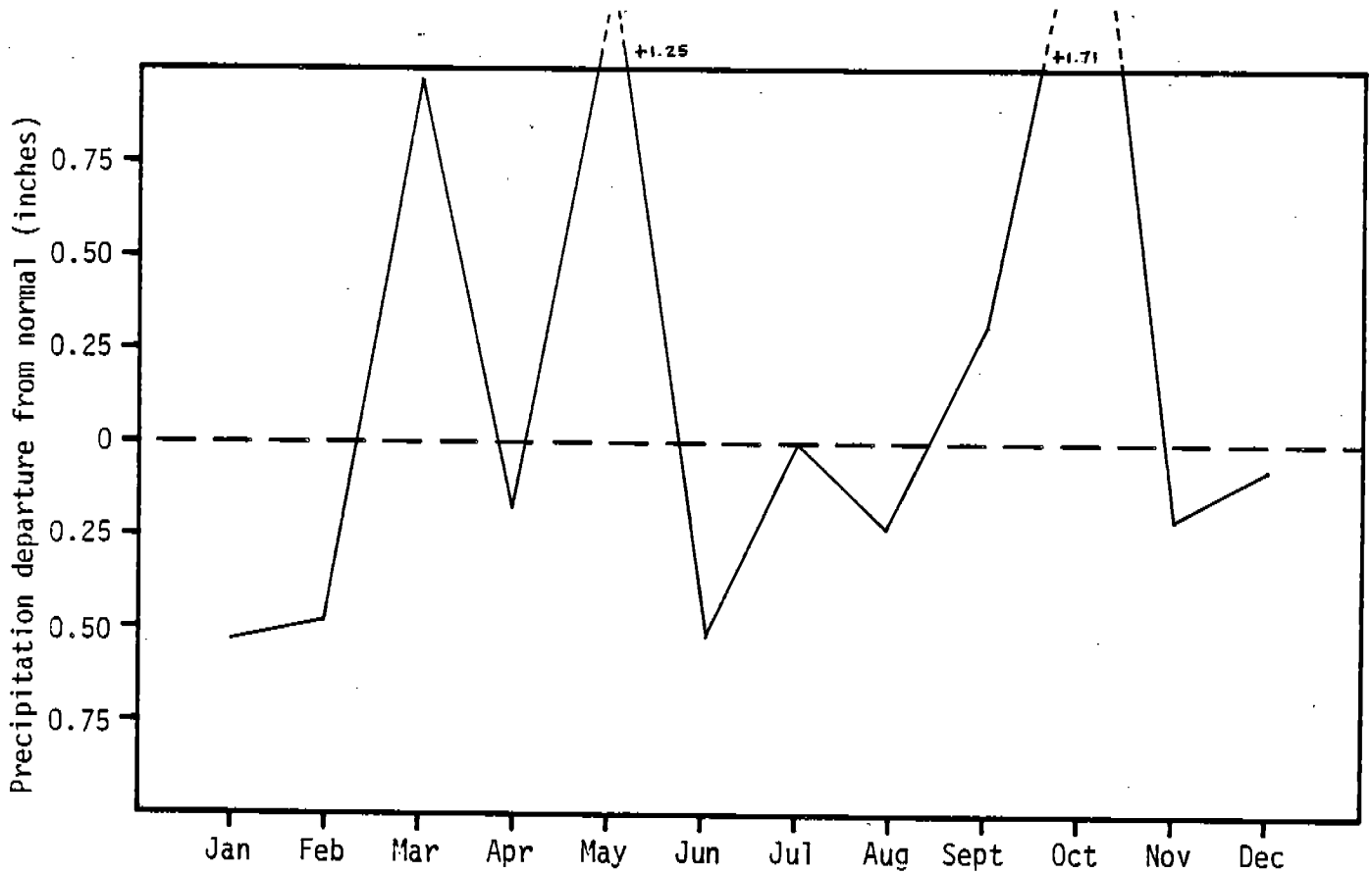


Figure 2. Monthly average precipitation departure from normal, 1981.

# RING-NECKED PHEASANT

## SUMMARY

The statewide breeding population indices, based on 1980 harvest data, were above the 1980 level but below average. However, winter sex ratio indices indicated decreased breeding populations. Poor counting conditions may have influenced this discrepancy. Winter carry-over from 1980 appeared good as a result of below average precipitation and mild temperatures statewide.

Weather conditions during the nesting season were generally better than in 1980. Statewide monthly average temperatures were higher and precipitation was lower. Late May rains and cool temperatures delayed alfalfa mowing enough to allow the first hatch to have higher success. Production was generally above 1980 levels and above average statewide.

Harvest statistics compiled from the questionnaire indicated a comparable hunt to 1980. This may have been due to the higher production of young in 1981. Three percent more pheasants were harvested but this was due to a 6 percent increase in effort. The harvest was the highest since 1972 and was 3 percent greater than in 1980. But, birds per hunter-day decreased 3 percent from 1980. Hunter numbers decreased 2 percent from 1980. Field bag check data showed that hunters spent slightly more time afield per hunter-day than in 1980. The ratio of birds per hunter from field bag checks was comparable to the index from hunter questionnaires.

Hunter access is probably the biggest problem of pheasant management in Utah. Some 85,000 pheasant hunters are limited to hunting on only 4 percent of Utah's land area which is cropland. This yields a density of more than 40 hunters per square mile, higher than most major pheasant producing states of the midwest. More and more land is being closed due to unethical acts of a few hunters. As a result there will be more demand for Commercial Hunting Areas (CHA) and posted pheasant hunting units (PPHU). Currently there are 34 PPHU's selling 7,000 permits and 21 CHA's offering pheasant hunting. More hunting pressure will also be realized on the 3,000 acres of upland game areas administered by DWR. Other innovative methods of protecting and acquiring hunter access will be pursued. These include the tax incentives, purchase of development rights, easements, rights-of-way, and by instilling good hunter ethics in our young people through a strong hunter education program.



### Winter Sex Ratio Counts

Results of the survey for the winter of 1980-81 and long-term trends are shown in Tables 1 and 2 of this section. Statewide comparisons to the winter of 1979-80 and the 10-year average are as follows:

	<u>Winter of</u> <u>1980-81</u>	<u>Percent change from</u>	
		<u>1979-80</u>	<u>Average</u>
Total pheasants counted (roadside)	4,229	-29	-55
Hens per cock	3.4	-5	-17
Pheasants observed per 100 hours	1,151	-3	-5
Total hours effort (roadside)	381	-21	-48

Winter sex ratio counts indicated a decreased breeding population in 1981 from 1980 and much below average. Counting conditions were generally poor with very little snow cover. Winter carry-over was good. The hen-cock ratio decreased from 1980 and remained below average.

### Roadside Counts

A summary of summer roadside pheasant counts for 1981 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 1981 survey results compared to 1980 and the 10-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total pheasants observed	3,873	+36	+39
Total miles driven	2,650	+2	-8
Pheasants per mile	1.46	+33	+19
Average brood size	5.45	+19	+1
Young per hen	4.12	+14	+3
Percent of hens with young	79	+2	+8

April temperatures were slightly above normal with below normal precipitation. May temperatures were one degree below normal and precipitation was slightly above normal. June was warm and dry. Counting conditions were good over most of the state.

Production increased from 1980 and was above 1980 levels in all regions. The density index (pheasants per mile) increased from 1.10 in 1980 to 1.46 in 1981 which was above the average of 1.23 pheasants per mile.

Above average production, and a good carry-over from 1980, coupled with good brood weather during the summer months of 1981, resulted in a good fall pheasant population.

## Harvest

### Hunter Questionnaire

Results of the hunter questionnaire for 1981 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 1981 harvest statistics to 1980 and the 33-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Pheasant hunters	83,408	-2	0
Pheasants harvested	234,217	+3	0
Hunter-days afield	265,381	+6	+18
Pheasants per hunter-day	0.88	-3	-16
Pheasants per hunter	2.81	+4	0

Total hunters decreased slightly from 1980 but remained at the long-term average (1948-80). Hunter-days afield increased and the total harvest also increased 3 percent from 1980. Hunter success (pheasants per hunter-day) decreased from 1980 and remained below average. Pheasants per hunter increased 4 percent to the 33 year average.

Long-term trends (1966-81) of total hunters, hunter-days, harvest and hunter success are shown in Figure 1. Generally, the trend continues toward more hunters and hunter-days with gradual declines in total pheasants harvested.

### Field Bag Checks

A summary of pheasant field bag check data for 1981 is shown in Table 14. The hunter success trend determined via bag checks since 1976 is found in Table 15. A comparison of 1981 data, on a statewide basis, to 1980 and the 10-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total hunters checked	4,540	0	-14
Total hours hunted	15,439	+12	-11
Pheasants per hunter (complete hunts)	0.90	+7	+15
Pheasants bagged per 100 hours	20	0	+18
Average hours per hunter-day (complete hunts)	4.4	+16	0
Hours hunted per pheasant bagged	4.9	+7	-17

Checking Station Report

Stormy weather dampened pheasant hunter success on opening weekend over much of the state. Weather in Duchesne and Uintah counties was good with good hunter success. Checking station reports indicated hunter pressure was about the same as the previous year in Salt Lake, Utah and Davis counties. Pressure was down in Cache, Weber, Carbon, and Emery counties. Pressure was up in Box Elder County. Hunter success was higher in Sanpete (158 hunters checked, 0.66 birds per hunter compared with 0.53 birds per hunter - all hunts - last year) with good numbers of birds seen, otherwise opening weekend success was quite comparable with the previous year.

Pheasants bagged per hunter and per hunter-day

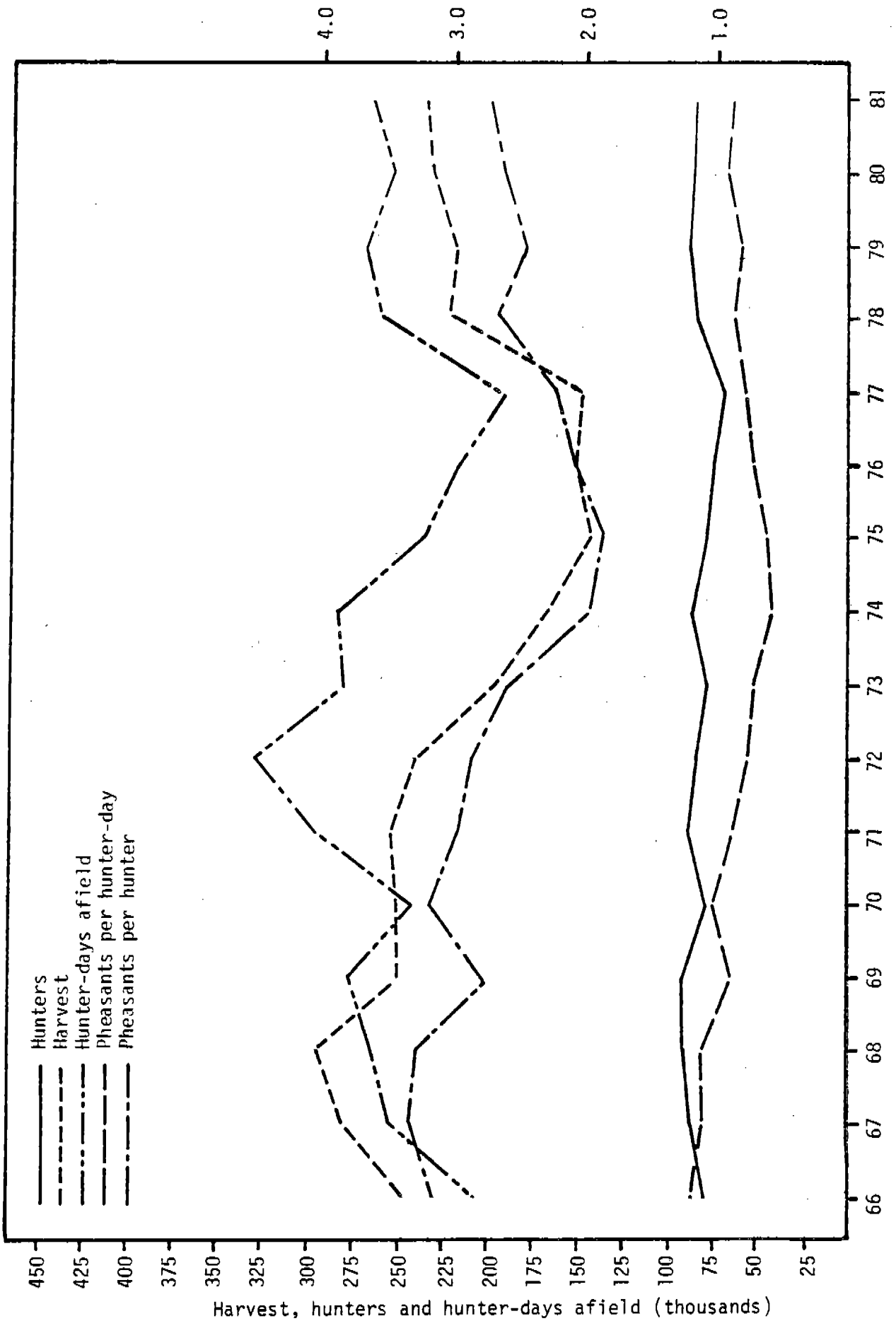


Figure 1. Statewide trend of pheasant harvest statistics

Table 1. Summary of pheasant winter sex ratio counts, 1980-81.

Region and County	Roadside Observations			Flushing Observations			Effort Expended			Pheas. Obs./ 100 Hours of Road. Obs.		
	Cocks	Hens	Total	Hens/ Cocks/ 100 Hens	Cocks/ 100 Hens	Total	Miles Vehicle	Hours of Walk	Total			
<b>Northern Region</b>												
Box Elder	57	192	249	3.4	30	--	--	20	--	20	1,245	
Cache	81	185	266	2.3	44	--	--	18	1	19	1,478	
Davis	17	66	83	3.9	26	--	--	10	0	10	830	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	13	80	93	6.2	16	--	--	8	0	8	1,162	
<b>REGIONAL TOTALS</b>	<b>168</b>	<b>523</b>	<b>691</b>	<b>3.1</b>	<b>32</b>	<b>--</b>	<b>--</b>	<b>56</b>	<b>1</b>	<b>57</b>	<b>1,234</b>	
<b>Central Region</b>												
Juab	12	57	69	4.8	21	2	37	18.5	6	24.5	373	
Salt Lake	26	49	75	1.9	53	14	17	31	1.2	13	14	
Sanpete	160	612	772	3.8	26	--	--	66	--	66	86	
Tooele	21	118	139	5.6	18	11	71	82	6.5	40	348	
Utah	61	466	527	7.3	13	20	67	87	3.4	40	1,318	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>280</b>	<b>1,302</b>	<b>1,582</b>	<b>4.7</b>	<b>22</b>	<b>47</b>	<b>192</b>	<b>239</b>	<b>4.0</b>	<b>24</b>	<b>177.5</b>	
<b>Southern Region</b>												
Beaver	24	28	52	1.2	86	2	5	7	2.5	40	146	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	6	23	29	3.8	26	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	104	331	435	3.2	31	41	110	151	2.7	37	414	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	16	89	105	5.6	18	--	--	5	--	5	2,100	
Washington	37	250	287	6.8	15	--	--	19	--	19	1,510	
Wayne	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>187</b>	<b>721</b>	<b>908</b>	<b>3.9</b>	<b>26</b>	<b>43</b>	<b>115</b>	<b>158</b>	<b>2.7</b>	<b>38</b>	<b>897</b>	
<b>Northeastern Region</b>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	85	138	223	1.6	62	33	51	84	1.5	65	553	
Uintah	58	233	291	4.0	25	24	39	63	1.6	61	120	
<b>REGIONAL TOTALS</b>	<b>143</b>	<b>371</b>	<b>514</b>	<b>2.6</b>	<b>38</b>	<b>57</b>	<b>90</b>	<b>147</b>	<b>1.6</b>	<b>63</b>	<b>673</b>	
<b>Southeastern Region</b>												
Carbon	10	10	20	1.0	100	--	--	--	--	--	177	
Emery	180	334	514	1.9	54	--	--	12	--	12	201	
Grand	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>190</b>	<b>344</b>	<b>534</b>	<b>1.8</b>	<b>55</b>	<b>--</b>	<b>--</b>	<b>21</b>	<b>--</b>	<b>21</b>	<b>378</b>	
<b>STATE TOTALS</b>	<b>968</b>	<b>3,261</b>	<b>4,229</b>	<b>3.4</b>	<b>30</b>	<b>147</b>	<b>397</b>	<b>544</b>	<b>2.7</b>	<b>37</b>	<b>4,873</b>	
										<b>13</b>	<b>380.5</b>	<b>1,151</b>



Table 2. Trend in pheasant winter sex ratio counts, 1976-82.

Region and County	1976-77		1977-78		1978-79		1979-80		1980-81		1981-82		Averages 1970-80
	Hens/100 Hr	Birds/100 Hr	Hens/100 Hr	Birds/100 Hr	Hens/100 Hr	Birds/100 Hr	Hens/100 Hr	Birds/100 Hr	Hens/100 Hr	Birds/100 Hr	Hens/100 Hr	Birds/100 Hr	
<b>Northern Region</b>													
Box Elder	2.6	738	2.1	700	5.2	2,138	6.4	1,400	3.4	1,245	6.1	1,790	
Cache	4.2	747	3.8	430	2.4	790	3.5	1,064	2.3	1,478	2.9	1,624	
Davis	6.5	1,464	7.3	631	5.6	1,712	2.5	509	3.9	830	6.9	2,737	
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	--	
Weber	6.7	1,283	7.8	469	8.6	9,938	14.0	1,154	6.2	1,162	10.1	6,664	
<b>REGIONAL TOTALS</b>	<b>4.7</b>	<b>982</b>	<b>4.8</b>	<b>515</b>	<b>4.5</b>	<b>1,627</b>	<b>5.5</b>	<b>1,179</b>	<b>3.1</b>	<b>1,234</b>	<b>5.9</b>	<b>2,999</b>	<b>5.1</b>
<b>Central Region</b>													
Juab	7.0	400	1.5	83	4.6	2,755	6.2	3,586	4.8	373	5.4	1,513	
Salt Lake	3.1	433	1.3	202	3.7	357	2.0	419	1.9	577	3.8	1,205	
Sanpete	7.4	891	6.5	762	3.0	2,305	3.1	1,451	3.8	86	8.2	5,445	
Tooele	1.7	616	3.0	868	3.5	1,294	3.2	1,129	5.6	348	--	--	
Utah	4.1	1,291	4.9	643	5.0	1,763	5.7	1,170	7.3	1,318	3.3	2,845	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>4.3</b>	<b>924</b>	<b>4.6</b>	<b>596</b>	<b>3.9</b>	<b>1,480</b>	<b>4.2</b>	<b>1,405</b>	<b>4.7</b>	<b>891</b>	<b>5.6</b>	<b>3,541</b>	<b>4.9</b>
<b>Southern Region</b>													
Beaver	8.0	300	3.0	514	--	--	0.4	150	1.2	433	2.6	2,666	
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	
Iron	3.8	580	2.2	145	0.6	550	2.3	206	3.8	--	2.9	837	
Kane	--	--	--	--	--	--	--	--	--	--	--	--	
Millard	2.5	402	2.6	1,144	2.9	5,292	2.7	1,877	3.2	1,891	2.4	5,523	
Piute	--	--	--	--	--	--	--	--	--	--	--	--	
Savier	2.5	567	4.0	354	4.0	1,368	5.4	1,848	5.6	2,100	--	--	
Washington	5.4	1,768	5.4	643	2.5	2,041	1.1	690	6.8	1,510	3.1	1,040	
Wayne	1.6	388	0.5	60	0.5	75	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>3.5</b>	<b>653</b>	<b>3.3</b>	<b>474</b>	<b>2.8</b>	<b>2,278</b>	<b>2.9</b>	<b>1,081</b>	<b>3.9</b>	<b>1,539</b>	<b>2.6</b>	<b>2,033</b>	<b>4.2</b>
<b>Northeastern Region</b>													
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	1.6	1,830	2.6	1,477	2.1	3,060	2.2	1,072	1.6	787	1.9	600	
Uintah	2.5	1,760	3.4	2,581	3.0	3,117	3.3	1,825	4.0	2,360	2.8	1,065	
<b>REGIONAL TOTALS</b>	<b>2.0</b>	<b>1,797</b>	<b>3.0</b>	<b>1,919</b>	<b>2.5</b>	<b>3,087</b>	<b>2.8</b>	<b>1,381</b>	<b>2.6</b>	<b>1,224</b>	<b>2.4</b>	<b>810</b>	<b>2.4</b>
<b>Southeastern Region</b>													
Carbon	1.3	800	2.3	548	2.3	1,100	0.1	60	1.0	222	1.8	6,200	
Emery	2.0	1,571	2.2	642	1.5	906	1.5	587	1.9	4,283	2.5	2,670	
Grand	--	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	345	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>1.8</b>	<b>1,240</b>	<b>2.2</b>	<b>524</b>	<b>1.6</b>	<b>911</b>	<b>1.3</b>	<b>367</b>	<b>1.8</b>	<b>2,543</b>	<b>2.1</b>	<b>3,453</b>	<b>2.3</b>
<b>STATE TOTALS</b>	<b>3.3</b>	<b>1,014</b>	<b>3.7</b>	<b>711</b>	<b>3.3</b>	<b>1,748</b>	<b>3.6</b>	<b>1,191</b>	<b>3.4</b>	<b>1,151</b>	<b>4.6</b>	<b>2,838</b>	<b>4.1</b>

Table 3. Pheasant summer inventory, 1981.

Region and County	No. Routes	Total Miles	Distinct Broods		Mixed Observ.		Adults w/o Young		Total Total Hens		Total Total Yng	Total Total Cocks	Total Total Pheas/Mile	Yng/Mile Brood	Mean Ad Hens	Yng/Ad Hens	% Hens w/Yng
			No.	Yng	Hens	Yng	Hens	Cocks	Hens								
<b>Northern Region</b>																	
Box Elder	2	180	39	191	0	1	13	8	47	192	13	252	1.40	1.07	4.90	4.09	83
Cache	2	132	15	89	2	3	8	5	22	92	8	122	0.92	0.70	5.93	4.18	77
Davis	1	69	11	40	12	16	8	15	38	56	8	95	1.38	0.81	3.64	1.81	71
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	1	78	37	137	13	49	6	5	55	186	6	247	3.17	2.38	3.70	3.38	91
<b>REGIONAL TOTALS</b>	<b>6</b>	<b>459</b>	<b>102</b>	<b>457</b>	<b>27</b>	<b>69</b>	<b>35</b>	<b>33</b>	<b>162</b>	<b>526</b>	<b>35</b>	<b>716</b>	<b>1.56</b>	<b>1.15</b>	<b>4.48</b>	<b>3.39</b>	<b>80</b>
<b>Central Region</b>																	
Juab	1	48	5	19	2	11	6	0	7	30	6	43	0.89	0.63	3.80	4.29	100
Salt Lake	1	99	6	28	10	29	23	12	28	57	23	108	1.09	0.57	4.67	2.04	57
Sanpete	1	58	25	181	12	74	12	1	38	255	12	305	5.25	4.40	7.24	6.71	97
Tooele	1	60	3	11	2	6	5	2	7	17	5	29	0.48	0.28	3.67	2.43	71
Utah	3	260	66	355	10	82	19	39	115	437	19	571	2.19	1.68	5.38	3.80	66
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>7</b>	<b>525</b>	<b>105</b>	<b>594</b>	<b>36</b>	<b>202</b>	<b>65</b>	<b>54</b>	<b>195</b>	<b>796</b>	<b>65</b>	<b>1,056</b>	<b>2.01</b>	<b>1.51</b>	<b>5.66</b>	<b>4.08</b>	<b>72</b>
<b>Southern Region</b>																	
Beaver	1	90	6	39	0	10	1	1	7	49	1	57	0.63	0.54	6.50	7.00	86
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	1	72	7	57	2	20	3	0	9	77	3	89	1.24	1.07	8.14	8.56	100
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	2	280	83	523	31	114	23	23	137	637	23	797	2.85	2.27	6.30	4.65	83
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	2	174	19	95	4	22	6	5	28	117	6	151	0.87	0.67	5.00	4.18	82
Washington	2	105	10	59	13	35	19	12	35	94	19	148	1.41	0.89	5.90	2.69	66
Wayne	1	80	1	1	6	69	5	1	8	70	5	83	1.04	0.87	1.00	8.75	88
<b>REGIONAL TOTALS</b>	<b>9</b>	<b>801</b>	<b>126</b>	<b>774</b>	<b>56</b>	<b>270</b>	<b>57</b>	<b>42</b>	<b>224</b>	<b>1,044</b>	<b>57</b>	<b>1,325</b>	<b>1.65</b>	<b>1.30</b>	<b>6.14</b>	<b>4.66</b>	<b>81</b>
<b>Northeastern Region</b>																	
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	3	350	31	142	11	40	50	20	62	182	50	294	0.84	0.52	4.58	2.94	68
Uintah	2	185	16	88	12	66	13	0	28	154	13	195	1.05	0.83	5.50	5.50	100
<b>REGIONAL TOTALS</b>	<b>5</b>	<b>535</b>	<b>47</b>	<b>230</b>	<b>23</b>	<b>106</b>	<b>63</b>	<b>20</b>	<b>90</b>	<b>336</b>	<b>63</b>	<b>489</b>	<b>0.91</b>	<b>0.63</b>	<b>4.89</b>	<b>3.73</b>	<b>78</b>
<b>Southeastern Region</b>																	
Carbon	1	90	3	23	8	64	12	0	11	87	12	110	1.22	0.93	7.67	7.91	100
Emery	3	240	18	108	5	19	18	9	32	127	18	177	0.74	0.52	6.00	3.97	72
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>4</b>	<b>330</b>	<b>21</b>	<b>131</b>	<b>13</b>	<b>83</b>	<b>30</b>	<b>9</b>	<b>43</b>	<b>214</b>	<b>30</b>	<b>287</b>	<b>0.86</b>	<b>0.65</b>	<b>6.24</b>	<b>4.98</b>	<b>79</b>
<b>STATE TOTALS</b>	<b>31</b>	<b>2,650</b>	<b>401</b>	<b>2,186</b>	<b>155</b>	<b>730</b>	<b>250</b>	<b>158</b>	<b>707</b>	<b>2,916</b>	<b>250</b>	<b>3,873</b>	<b>1.46</b>	<b>1.10</b>	<b>5.45</b>	<b>4.12</b>	<b>79</b>

\*Data collected by Southeastern Region.

Table 4. Trend of pheasants observed per mile during summer roadside counts, 1971-81.

Region and County	Year											Average 1962-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	1.75	1.10	0.38	0.87	0.21	0.46	0.60	0.78	0.41	1.03	1.40	
Cache	1.98	1.10	0.36	0.48	0.68	0.44	0.22	0.71	0.34	0.08	0.92	
Davis	2.75	1.77	--	0.32	1.55	0.54	1.67	1.59	1.47	1.77	1.38	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	1.82	2.44	2.36	1.77	1.23	2.24	1.30	1.01	1.55	2.03	3.17	
<b>REGIONAL TOTALS</b>	2.04	1.45	1.04	0.80	0.71	0.86	0.85	0.96	0.76	1.23	1.56	1.32
<u>Central Region</u>												
Juab	0.32	0.64	0.23	0.46	0.82	1.20	0.54	0.09	0.13	0.94	0.89	
Salt Lake	1.74	1.29	0.44	0.48	0.54	0.55	0.29	0.09	0.64	0.60	1.09	
Sanpete	2.22	3.27	1.78	1.60	0.08	1.37	1.23	1.28	1.85	2.18	5.25	
Tooele	1.69	2.52	0.07	0.87	0.17	1.02	0.77	1.11	3.83	1.08	0.48	
Utah	2.31	2.02	1.36	1.29	0.64	1.45	0.98	1.96	4.14	1.90	2.19	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	2.00	2.06	0.98	1.11	0.62	1.16	0.93	1.40	2.83	1.68	2.01	1.90
<u>Southern Region</u>												
Beaver	0.69	0.75	0.60	0.60	0.07	0.69	0.49	0.71	1.01	0.47	0.63	
Garfield	0.03	--	--	--	--	--	--	--	--	--	--	
Iron	0.77	0.51	0.56	0.53	0.19	0.39	0.30	0.49	0.97	0.67	1.24	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	1.15	1.09	0.57	0.79	0.41	0.47	0.49	1.38	1.11	0.88	2.85	
Piute	0.35	--	--	--	--	--	--	--	--	--	--	
Sevier	4.13	2.37	1.03	0.89	0.40	0.72	0.88	1.72	1.10	1.13	0.87	
Washington	1.32	0.92	1.12	1.34	0.47	0.47	0.57	1.40	1.36	0.70	1.41	
Wayne	--	--	--	0.48	0.09	1.33	0.03	2.10	0.21	--	1.04	
<b>REGIONAL TOTALS</b>	1.48	1.19	0.79	0.78	0.28	0.58	0.57	1.29	1.08	0.86	1.65	1.12
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	0.32	0.27	0.31	0.33	0.33	0.34	0.39	0.68	0.38	0.56	0.84	
Uintah	0.82	0.74	0.61	1.33	0.54	1.45	1.15	1.75	1.90	1.60	1.05	
<b>REGIONAL TOTALS</b>	0.51	0.42	0.39	0.61	0.39	0.67	0.65	1.02	0.90	0.93	0.91	0.67
<u>Southeastern Region</u>												
Carbon	0.05	0.15	0.01	0.00	0.02	0.39	0.23	0.22	0.40	0.37	1.22	
Emery	0.55	1.32	0.64	1.06	0.88	0.47	0.61	0.53	0.39	0.49	0.74	
Grand	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	5.00	3.57	0.93	0.93	0.00	0.35	--	--	
<b>REGIONAL TOTALS</b>	0.31	0.76	0.34	0.64	0.60	0.44	0.44	0.35	0.38	0.45	0.86	0.72
<b>STATE TOTALS</b>	1.40	1.33	0.74	0.83	0.49	0.78	0.71	1.02	1.37	1.10	1.46	1.23

Table 5. Trend of young observed per mile during summer roadside pheasant counts, 1971-81.

Region and County	Year											Average 1962-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	1.32	0.76	0.28	0.62	0.13	0.31	0.41	0.55	0.03	0.69	1.07	
Cache	1.62	0.81	0.32	0.35	0.43	0.30	0.17	0.47	0.20	0.07	0.70	
Davis	2.25	1.28	--	0.22	0.84	0.54	1.17	1.26	0.99	1.27	0.81	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	1.35	1.74	1.72	1.31	0.77	1.47	0.84	0.62	1.22	1.53	2.38	
<b>REGIONAL TOTALS</b>	<b>1.62</b>	<b>1.04</b>	<b>0.77</b>	<b>0.59</b>	<b>0.43</b>	<b>0.58</b>	<b>0.58</b>	<b>0.68</b>	<b>0.55</b>	<b>0.88</b>	<b>1.15</b>	<b>0.97</b>
<u>Central Region</u>												
Juab	0.18	0.50	0.17	0.38	0.71	1.06	0.46	0.76	0.02	0.85	0.63	
Salt Lake	1.31	1.04	0.32	0.32	0.35	0.37	0.21	0.07	0.44	0.32	0.57	
Sanpete	1.74	2.64	1.43	1.26	0.56	1.12	0.98	1.06	1.53	1.72	4.40	
Tooele	1.41	2.09	0.00	0.62	0.07	0.69	0.45	0.72	2.95	0.76	0.28	
Utah	1.68	1.35	1.02	0.95	0.33	0.99	0.60	1.43	3.00	1.30	1.68	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>1.50</b>	<b>1.53</b>	<b>0.73</b>	<b>0.83</b>	<b>0.38</b>	<b>0.84</b>	<b>0.63</b>	<b>1.06</b>	<b>2.11</b>	<b>1.21</b>	<b>1.51</b>	<b>1.45</b>
<u>Southern Region</u>												
Beaver	0.48	0.57	0.39	0.47	0.03	0.54	0.33	0.58	0.87	0.37	0.54	
Garfield	0.00	--	--	--	--	--	--	--	--	--	--	
Iron	0.62	0.39	0.51	0.46	0.08	0.31	0.17	0.38	0.74	0.53	1.07	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	0.90	0.87	0.48	0.57	0.27	0.34	0.34	1.12	0.89	0.69	2.27	
Piute	0.25	--	--	--	--	--	--	--	--	--	--	
Sevier	3.21	1.93	0.85	0.70	0.28	0.56	0.70	1.45	0.93	0.90	0.67	
Washington	0.95	0.65	0.72	1.03	0.26	0.35	0.37	1.08	1.02	0.49	0.89	
Wayne	--	--	--	0.14	0.02	0.87	0.00	1.76	0.15	--	0.87	
<b>REGIONAL TOTALS</b>	<b>1.14</b>	<b>0.95</b>	<b>0.61</b>	<b>0.59</b>	<b>0.17</b>	<b>0.44</b>	<b>0.41</b>	<b>1.05</b>	<b>0.87</b>	<b>0.67</b>	<b>1.30</b>	<b>0.86</b>
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	0.21	0.15	0.18	0.21	0.23	0.21	0.25	0.53	0.27	0.37	0.52	
Uintah	0.55	0.55	0.47	1.08	0.27	1.07	0.79	1.41	1.50	1.20	0.83	
<b>REGIONAL TOTALS</b>	<b>0.34</b>	<b>0.28</b>	<b>0.26</b>	<b>0.45</b>	<b>0.24</b>	<b>0.47</b>	<b>0.44</b>	<b>0.81</b>	<b>0.69</b>	<b>0.66</b>	<b>0.63</b>	<b>0.49</b>
<u>Southeastern Region</u>												
Carbon	0.03	0.10	--	0.00	0.00	0.22	0.03	0.15	0.30	0.22	0.93	
Emery	0.30	0.96	0.47	0.81	0.57	0.20	0.33	0.35	0.28	0.35	0.52	
Grand	--	0.67	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	4.07	2.43	0.47	0.40	--	0.00	--	--	
<b>REGIONAL TOTALS</b>	<b>0.17</b>	<b>0.54</b>	<b>0.25</b>	<b>0.50</b>	<b>0.39</b>	<b>0.22</b>	<b>0.18</b>	<b>0.24</b>	<b>0.26</b>	<b>0.31</b>	<b>0.65</b>	<b>0.50</b>
<b>STATE TOTALS</b>	<b>1.06</b>	<b>0.99</b>	<b>0.55</b>	<b>0.62</b>	<b>0.30</b>	<b>0.55</b>	<b>0.47</b>	<b>0.78</b>	<b>1.04</b>	<b>0.80</b>	<b>1.10</b>	<b>0.93</b>

Table 6. Trend of young per adult hen ratios found during summer roadside pheasant counts, 1971-81.

Region and County	Year											Average 1962-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	4.02	3.26	3.23	3.19	2.44	4.18	3.68	3.64	3.92	2.60	4.09	
Cache	6.64	3.88	10.00	3.00	2.69	4.50	4.00	2.80	2.40	4.00	4.18	
Davis	5.45	3.42	--	3.00	1.53	3.75	3.18	4.71	2.30	2.78	1.81	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	3.40	3.49	3.72	3.66	2.07	2.35	2.12	1.81	4.13	3.97	3.38	
<b>REGIONAL TOTALS</b>	<b>5.02</b>	<b>3.50</b>	<b>3.82</b>	<b>3.35</b>	<b>2.10</b>	<b>2.91</b>	<b>2.88</b>	<b>3.10</b>	<b>3.14</b>	<b>3.07</b>	<b>3.39</b>	<b>3.64</b>
<u>Central Region</u>												
Juab	2.33	4.50	4.00	5.00	6.00	7.40	8.00	5.60	1.00	9.67	4.29	
Salt Lake	4.08	4.74	3.24	2.87	2.39	3.50	5.33	6.00	3.27	1.70	2.04	
Sanpete	4.73	5.52	5.33	4.45	2.67	5.22	5.09	6.03	5.91	4.97	6.71	
Tooele	5.95	5.95	0.00	3.36	1.33	3.06	1.93	2.69	3.93	2.88	2.43	
Utah	3.28	2.71	3.33	3.58	1.62	3.32	2.53	3.42	3.20	2.65	3.80	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>3.86</b>	<b>3.78</b>	<b>3.46</b>	<b>3.77</b>	<b>2.16</b>	<b>3.85</b>	<b>3.19</b>	<b>3.88</b>	<b>3.59</b>	<b>3.23</b>	<b>4.08</b>	<b>3.95</b>
<u>Southern Region</u>												
Beaver	3.27	5.38	2.78	5.83	0.86	6.14	3.33	4.72	6.00	6.29	7.00	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	4.43	4.54	13.67	9.50	0.86	5.50	6.00	5.00	4.25	5.14	8.56	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	4.62	5.65	5.75	2.91	2.52	3.67	3.57	6.05	5.52	6.00	4.65	
Piute	5.00	--	--	--	--	--	--	--	--	--	--	
Sevier	4.34	4.94	5.18	3.80	3.06	4.79	4.90	6.67	5.96	4.44	4.18	
Washington	3.45	3.50	2.62	3.89	1.94	5.83	2.47	4.52	4.95	5.50	2.69	
Wayne	--	--	--	0.54	0.25	2.60	--	7.57	5.00	--	8.75	
<b>REGIONAL TOTALS</b>	<b>4.19</b>	<b>4.98</b>	<b>4.41</b>	<b>3.73</b>	<b>1.93</b>	<b>4.36</b>	<b>3.88</b>	<b>5.85</b>	<b>5.44</b>	<b>5.16</b>	<b>4.66</b>	<b>4.44</b>
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	3.50	3.00	4.06	3.71	3.73	4.06	3.41	5.11	5.82	4.22	2.94	
Uintah	3.08	4.84	5.64	5.43	1.78	4.48	3.06	5.63	5.25	3.22	5.50	
<b>REGIONAL TOTALS</b>	<b>3.23</b>	<b>3.92</b>	<b>4.70</b>	<b>4.69</b>	<b>2.73</b>	<b>4.34</b>	<b>3.18</b>	<b>5.39</b>	<b>5.39</b>	<b>3.52</b>	<b>3.73</b>	<b>4.25</b>
<u>Southeastern Region</u>												
Carbon	5.00	4.33	--	--	0.00	2.05	0.42	3.00	4.80	5.00	7.91	
Emery	2.25	3.34	4.70	7.46	3.96	1.46	2.36	2.61	4.29	3.37	3.97	
Grand	--	2.22	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	7.62	2.55	1.75	1.20	0.00	0.00	--	--	
<b>REGIONAL TOTALS</b>	<b>2.36</b>	<b>3.20</b>	<b>4.70</b>	<b>7.52</b>	<b>3.28</b>	<b>1.74</b>	<b>1.62</b>	<b>2.70</b>	<b>3.00</b>	<b>3.65</b>	<b>4.98</b>	<b>3.98</b>
<b>STATE TOTALS</b>	<b>4.09</b>	<b>3.93</b>	<b>3.95</b>	<b>3.95</b>	<b>2.28</b>	<b>3.56</b>	<b>3.11</b>	<b>4.32</b>	<b>4.05</b>	<b>3.60</b>	<b>4.12</b>	<b>3.99</b>

Table 7. Trend of the percent of hens observed with broods during summer roadside pheasant counts, 1971-1981.

Region and County	Year											Average 1963-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	75	69	62	78	78	73	79	80	62	68	83	
Cache	86	78	50	68	66	80	100	60	60	100	77	
Davis	87	85	--	100	97	75	58	88	80	63	71	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	77	54	82	69	34	58	44	39	70	100	91	
REGIONAL TOTALS	82	70	77	74	68	64	58	64	71	76	80	72
<u>Central Region</u>												
Juab	67	100	100	100	100	100	100	100	--	100	100	
Salt Lake	66	78	71	52	45	59	100	100	64	71	57	
Sanpete	95	91	93	88	64	90	85	90	100	83	97	
Tooele	84	74	0	64	33	78	57	69	96	75	71	
Utah	69	57	62	58	42	66	61	69	57	64	66	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	74	69	66	68	49	73	67	74	66	82	72	73
<u>Southern Region</u>												
Beaver	82	88	64	83	14	86	56	73	77	71	86	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	62	54	100	80	14	100	100	86	83	86	100	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	81	88	100	50	48	81	68	85	88	87	83	
Plute	100	--	--	--	--	--	--	--	--	--	--	
Sevier	85	90	85	83	59	92	90	97	96	96	82	
Washington	74	62	66	78	31	50	73	87	95	33	66	
Wayne	--	--	--	8	50	40	--	100	100	--	88	
REGIONAL TOTALS	80	83	79	64	42	78	76	89	90	87	81	78
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	68	68	81	76	59	88	81	83	88	77	68	
Uintah	55	84	91	100	48	94	61	95	87	92	100	
REGIONAL TOTALS	60	76	85	90	53	91	68	90	88	87	78	78
<u>Southeastern Region</u>												
Carbon	100	67	--	--	0	59	17	44	100	75	100	
Emery	42	66	76	77	65	29	55	48	43	68	72	
Grand	--	56	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	100	55	50	60	0	0	--	--	
REGIONAL TOTALS	44	64	76	86	60	44	44	48	56	70	79	66
STATE TOTALS	75	72	74	71	54	71	65	76	73	77	79	73

Table 8. Trend of average brood size for pheasants, 1971-81.

Region and County	Year											Average 1962-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	4.96	4.81	4.75	4.17	3.14	5.75	4.67	5.71	6.38	3.40	4.90	
Cache	8.34	5.47	5.00	4.38	4.67	5.83	4.00	4.60	3.50	4.00	5.93	
Davis	6.52	4.50	--	3.50	2.75	4.33	5.73	4.79	4.00	5.13	3.64	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	4.80	6.07	6.55	7.27	5.78	5.05	6.57	4.80	6.00	4.37	3.70	
<b>REGIONAL TOTALS</b>	<b>6.33</b>	<b>5.13</b>	<b>6.00</b>	<b>4.84</b>	<b>4.26</b>	<b>5.19</b>	<b>5.29</b>	<b>5.00</b>	<b>5.22</b>	<b>4.21</b>	<b>4.48</b>	<b>5.00</b>
<u>Central Region</u>												
Juab	7.00	4.50	--	5.00	9.00	7.33	8.00	5.60	--	4.00	3.80	
Salt Lake	5.76	6.93	4.58	5.00	5.73	6.09	5.33	6.00	5.13	3.33	4.67	
Sanpete	4.94	6.11	5.92	4.59	4.72	5.88	4.92	6.56	5.98	5.43	7.24	
Tooele	6.81	8.07	--	6.50	4.00	4.38	3.33	4.57	8.93	3.83	3.67	
Utah	5.89	5.31	5.78	6.24	4.12	4.86	4.56	4.91	5.45	4.09	5.38	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>5.70</b>	<b>5.92</b>	<b>5.60</b>	<b>5.46</b>	<b>4.73</b>	<b>5.35</b>	<b>4.70</b>	<b>5.29</b>	<b>5.81</b>	<b>4.46</b>	<b>5.66</b>	<b>5.41</b>
<u>Southern Region</u>												
Beaver	5.75	6.17	4.33	8.00	6.00	7.75	6.00	6.50	7.10	7.25	6.50	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	7.17	5.67	6.00	9.50	6.00	5.25	6.00	5.00	4.25	6.00	8.14	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	4.44	5.31	5.50	6.20	5.73	6.93	5.23	6.88	6.31	6.38	6.30	
Piute	5.00	--	--	--	--	--	--	--	--	--	--	
Sevier	5.24	5.67	6.14	4.82	4.25	5.17	6.17	6.40	5.94	4.70	5.00	
Washington	5.25	6.33	4.33	4.42	5.80	8.00	3.57	6.33	5.00	--	5.90	
Wayne	--	--	--	7.00	--	7.00	--	10.25	5.00	--	1.00	
<b>REGIONAL TOTALS</b>	<b>5.13</b>	<b>5.60</b>	<b>5.38</b>	<b>5.83</b>	<b>5.31</b>	<b>6.37</b>	<b>5.45</b>	<b>6.71</b>	<b>5.96</b>	<b>5.49</b>	<b>6.14</b>	<b>5.58</b>
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	6.50	4.45	5.64	5.43	6.40	4.64	4.55	6.54	6.60	5.50	4.58	
Uintah	6.05	5.75	6.28	5.21	4.22	5.00	5.00	5.75	5.56	3.30	5.50	
<b>REGIONAL TOTALS</b>	<b>6.21</b>	<b>5.13</b>	<b>5.89</b>	<b>5.29</b>	<b>5.37</b>	<b>4.85</b>	<b>4.80</b>	<b>6.12</b>	<b>5.93</b>	<b>3.90</b>	<b>4.89</b>	<b>5.67</b>
<u>Southeastern Region</u>												
Carbon	5.00	6.50	--	--	--	3.00	2.50	6.75	3.33	6.67	7.67	
Emery	6.00	5.08	6.22	6.67	5.00	4.86	4.33	5.27	6.00	7.00	6.00	
Grand	--	4.00	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	6.12	--	3.50	4.00	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>5.89</b>	<b>5.00</b>	<b>6.22</b>	<b>6.36</b>	<b>5.00</b>	<b>4.40</b>	<b>4.07</b>	<b>5.67</b>	<b>5.00</b>	<b>6.86</b>	<b>6.24</b>	<b>5.70</b>
<b>STATE TOTALS</b>	<b>5.73</b>	<b>5.62</b>	<b>5.65</b>	<b>5.46</b>	<b>4.80</b>	<b>5.37</b>	<b>4.94</b>	<b>5.69</b>	<b>5.79</b>	<b>4.58</b>	<b>5.45</b>	<b>5.41</b>

Table 9. Summary of pheasant hunter success and distribution of harvest and hunting pressure by region and county, 1981.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	519	29,381	30,315	1.03	11.07	12.94
Cache	361	22,948	20,273	0.88	8.65	8.66
Davis	327	19,212	12,482	0.65	7.24	5.33
Morgan	17	934	531	0.57	0.35	0.23
Rich	0+	0	0	0.00	0.00	0.00
Summit	0+	0	0	0.00	0.00	0.00
Weber	387	25,517	18,257	0.72	9.62	7.79
REGIONAL TOTALS	1,611	97,992	81,858	0.84	36.93	34.95
<u>Central Region</u>						
Juab	153	8,385	7,472	0.89	3.16	3.19
Salt Lake	320	16,813	11,421	0.68	6.34	4.88
Sanpete	265	14,499	17,047	1.18	5.46	7.28
Tooele	133	7,345	4,798	0.65	2.77	2.05
Utah	850	45,918	41,906	0.91	17.30	17.89
Wasatch	0+	0	0	0.00	0.00	0.00
REGIONAL TOTALS	1,721	92,961	82,644	0.89	35.03	35.29
<u>Southern Region</u>						
Beaver	35	1,974	2,102	1.06	0.74	0.90
Garfield	12	361	191	0.53	0.14	0.08
Iron	73	3,397	2,526	0.74	1.28	1.08
Kane	0+	0	0	0.00	0.00	0.00
Millard	317	17,896	18,193	1.02	6.74	7.77
Piute	17	828	700	0.85	0.31	0.30
Sevier	209	12,207	12,589	1.03	4.60	5.37
Washington	55	3,014	1,359	0.45	1.14	0.58
Wayne	11	318	212	0.67	0.12	0.09
REGIONAL TOTALS	729	39,995	37,872	0.95	15.07	16.17
<u>Northeastern Region</u>						
Daggett	0+	0	0	0.00	0.00	0.00
Duchesne	178	9,850	10,763	1.09	3.71	4.60
Uintah	142	9,532	9,341	0.98	3.59	3.99
REGIONAL TOTALS	320	19,382	20,104	1.04	7.30	8.58
<u>Southeastern Region</u>						
Carbon	92	5,774	4,054	0.70	2.18	1.73
Emery	131	7,833	6,666	0.85	2.95	2.84
Grand	9	403	255	0.63	0.15	0.11
San Juan	11	403	276	0.68	0.15	0.12
REGIONAL TOTALS	243	14,414	11,251	0.78	5.43	4.80
Unknown counties	13	637	488	0.77	0.24	0.21
Mixed counties	0	0	0	0.00	0.00	0.00
STATE TOTALS	4,637	265,381	234,217	0.88	100	100

\*Total hunter trips from questionnaire returns.

+Included in unknown counties because of poor sample return.



Table 10. Summary of pheasants bagged per hunter-day by region and county, 1974-81.

Region and County	Year							
	1974	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>								
Box Elder	0.69	0.83	0.76	0.96	1.01	0.94	1.11	1.03
Cache	0.70	0.79	0.82	0.88	0.99	0.81	0.97	0.88
Davis	0.47	0.52	0.54	0.68	0.69	0.63	0.65	0.65
Morgan	0.30	0.24	0.87	0.73	0.78	0.60	0.56	0.57
Rich	1.00	0.56	0.00	0.33	1.86	0.00	0.00	0.00
Summit	0.69	0.50	0.00	0.00	0.40	0.00	0.00	0.00
Weber	0.52	0.59	0.66	0.76	0.70	0.71	0.77	0.72
REGIONAL TOTALS	0.59	0.66	0.68	0.81	0.83	0.77	0.86	0.84
<u>Central Region</u>								
Juab	0.39	0.38	0.59	0.68	0.79	0.87	1.00	0.89
Salt Lake	0.44	0.47	0.56	0.60	0.72	0.62	0.70	0.68
Sanpete	0.89	0.80	0.78	0.79	0.91	1.07	1.18	1.18
Tooele	0.37	0.47	0.71	0.55	0.81	0.58	0.73	0.65
Utah	0.61	0.58	0.73	0.78	0.83	0.82	0.92	0.91
Wasatch	0.00	0.22	0.54	0.50	2.00	0.00	0.00	0.00
REGIONAL TOTALS	0.56	0.56	0.68	0.71	0.81	0.79	0.90	0.89
<u>Southern Region</u>								
Beaver	0.58	0.58	0.70	0.74	0.97	0.56	0.86	1.06
Garfield	0.44	0.21	0.27	0.88	0.97	0.48	0.69	0.53
Iron	0.55	0.43	0.38	0.59	0.83	0.66	0.83	0.74
Kane	--	0.33	1.00	0.00	0.00	0.00	0.00	0.00
Millard	0.65	0.73	0.71	0.79	1.06	1.04	1.24	1.02
Piute	0.88	0.40	0.73	0.56	0.97	0.95	0.88	0.85
Sevier	0.70	0.56	0.73	0.76	0.82	1.01	1.01	1.03
Washington	0.38	0.39	0.97	0.46	0.70	0.60	0.63	0.45
Wayne	1.09	0.00	0.71	0.40	1.00	1.17	1.43	0.67
REGIONAL TOTALS	0.63	0.58	0.72	0.72	0.91	0.93	1.03	0.95
<u>Northeastern Region</u>								
Daggett	0.50	2.25	1.40	0.00	1.00	0.00	0.00	0.00
Duchesne	0.83	0.76	1.08	1.09	1.41	1.13	1.13	1.09
Uintah	0.70	0.74	1.12	1.11	1.05	0.95	1.09	0.98
REGIONAL TOTALS	0.76	0.76	1.10	1.10	1.20	1.03	1.11	1.04
<u>Southeastern Region</u>								
Carbon	0.25	0.34	0.54	0.50	0.86	0.66	0.94	0.70
Emery	0.46	0.53	0.67	0.55	0.65	0.71	0.85	0.85
Grand	0.00	0.31	0.42	0.75	0.73	0.45	0.33	0.63
San Juan	0.94	0.31	0.56	0.33	0.57	0.33	0.29	0.68
REGIONAL TOTALS	0.42	0.46	0.61	0.54	0.72	0.68	0.87	0.78
Unknown Counties	0.63	0.83	0.74	0.70	0.85	0.84	1.17	0.77
Mixed Counties	1.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	0.59	0.61	0.71	0.78	0.86	0.81	0.91	0.88

Table 11. Percentage distribution of pheasant harvest by region and county, 1974-81.

Region and County	Year							
	1974	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>								
Box Elder	11.64	13.05	10.10	11.45	11.06	12.04	12.35	12.94
Cache	11.76	8.75	9.13	8.28	8.55	6.93	7.94	8.66
Davis	8.27	8.73	7.99	8.97	8.47	8.15	7.61	5.33
Morgan	0.24	0.09	0.27	0.24	0.25	0.35	0.20	0.23
Rich	0.05	0.06	0.00	0.01	0.24	0.00	0.00	0.00
Summit	0.10	0.01	0.00	0.00	0.04	0.00	0.00	0.00
Weber	10.26	13.21	13.40	12.17	10.11	10.84	10.03	7.79
REGIONAL TOTALS	42.31	43.91	40.89	41.12	38.71	38.31	38.13	34.95
<u>Central Region</u>								
Juab	0.96	0.69	1.25	1.03	1.24	1.61	1.75	3.19
Salt Lake	8.12	8.73	7.65	7.51	8.19	7.14	6.29	4.88
Sanpete	6.56	6.03	5.59	4.68	4.44	6.87	7.17	7.28
Tooele	1.72	1.80	3.00	1.77	2.22	1.70	1.52	2.05
Utah	14.27	14.70	14.35	17.08	18.83	17.67	17.65	17.89
Wasatch	0.00	0.02	0.09	0.01	0.07	0.00	0.00	0.00
REGIONAL TOTALS	31.65	31.97	31.94	32.08	35.00	34.99	34.38	35.29
<u>Southern Region</u>								
Beaver	0.64	0.34	1.23	0.65	0.51	0.28	0.51	0.91
Garfield	0.05	0.05	0.04	0.07	0.26	0.09	0.07	0.08
Iron	0.77	0.98	0.55	0.48	0.92	0.52	0.88	1.08
Kane	--	0.03	0.01	0.00	0.00	0.00	0.00	0.00
Millard	5.32	5.23	3.71	4.02	4.69	5.46	5.76	7.77
Piute	0.17	0.07	0.25	0.10	0.30	0.13	0.22	0.30
Sevier	5.39	4.62	4.47	4.24	3.99	5.72	5.04	5.37
Washington	0.89	1.06	2.28	0.73	0.78	0.99	0.86	0.58
Wayne	0.14	0.00	0.13	0.04	0.09	0.14	0.07	0.09
REGIONAL TOTALS	13.36	12.38	12.68	10.34	11.53	13.33	13.43	16.17
<u>Northeastern Region</u>								
Daggett	0.02	0.10	0.09	0.00	0.07	0.00	0.00	0.00
Duchesne	3.97	2.86	4.00	5.85	5.61	5.25	4.69	4.60
Uintah	4.24	4.24	4.39	5.27	5.63	5.24	5.00	3.99
REGIONAL TOTALS	8.24	8.24	8.49	11.12	11.31	10.49	9.69	8.58
<u>Southeastern Region</u>								
Carbon	0.36	0.87	0.95	0.79	1.04	0.85	1.60	1.73
Emery	1.86	2.69	2.34	1.80	1.43	1.66	2.50	2.84
Grand	0.00	0.05	0.11	0.06	0.10	0.03	0.01	0.11
San Juan	0.17	0.05	0.07	0.02	0.04	0.03	0.01	0.12
REGIONAL TOTALS	2.39	3.65	3.46	2.68	2.61	2.57	4.13	4.80
Unknown Counties	1.59	1.04	2.55	2.68	0.84	0.31	0.24	0.21
Mixed Counties	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100	100

Table 12. Percentage distribution of pheasant hunting pressure by county hunted, 1974-81.

Region and County	Year							
	1974	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>								
Box Elder	9.95	9.61	9.39	9.22	9.37	10.37	10.20	11.07
Cache	9.92	6.75	7.90	7.25	7.42	6.95	7.51	8.65
Davis	10.34	10.24	10.54	10.24	10.52	10.48	10.71	7.24
Morgan	0.46	0.23	0.22	0.26	0.28	0.48	0.33	0.33
Rich	0.03	0.06	0.02	0.02	0.11	0.00	0.00	0.00
Summit	0.09	0.01	0.01	0.01	0.08	0.00	0.00	0.00
Weber	11.64	13.70	14.28	12.35	12.30	12.42	11.91	9.62
REGIONAL TOTALS	42.43	40.60	42.35	39.35	40.07	40.70	40.66	36.93
<u>Central Region</u>								
Juab	1.48	1.12	1.49	1.17	1.35	1.50	1.60	3.16
Salt Lake	11.06	11.37	9.70	9.70	9.71	9.40	8.21	6.34
Sanpete	4.39	4.62	5.08	4.60	4.18	5.23	5.57	5.46
Tooele	2.74	2.33	2.98	2.50	2.34	2.38	1.89	2.77
Utah	13.87	15.42	13.95	16.95	19.43	17.48	17.64	17.30
Wasatch	0.01	0.06	0.12	0.02	0.03	0.00	0.00	0.00
REGIONAL TOTALS	33.54	34.92	33.32	34.93	37.03	35.99	34.91	35.03
<u>Southern Region</u>								
Beaver	0.65	0.36	1.25	0.68	0.45	0.40	0.54	0.74
Garfield	0.06	0.13	0.10	0.06	0.23	0.15	0.09	0.14
Iron	0.83	1.40	1.01	0.62	0.95	0.65	0.97	1.28
Kane	--	0.06	0.01	0.00	0.00	0.00	0.00	0.00
Millard	4.89	4.42	3.67	3.95	3.80	4.29	4.24	6.74
Piute	0.11	0.10	0.25	0.14	0.26	0.11	0.23	0.31
Sevier	4.55	5.04	4.35	4.31	4.15	4.62	4.57	4.60
Washington	1.39	1.65	1.66	1.24	0.96	1.33	1.24	1.14
Wayne	0.07	0.01	0.13	0.08	0.08	0.10	0.05	0.12
REGIONAL TOTALS	12.55	13.18	12.44	11.08	10.89	11.65	11.93	15.07
<u>Northeastern Region</u>								
Daggett	0.03	0.03	0.05	0.00	0.06	0.00	0.00	0.00
Duchesne	2.83	2.29	2.63	4.15	3.41	3.79	3.78	3.71
Uintah	3.58	3.38	2.78	3.67	4.58	4.48	4.20	3.59
REGIONAL TOTALS	6.43	5.70	5.45	7.82	8.05	8.28	7.98	7.30
<u>Southeastern Region</u>								
Carbon	0.85	1.56	1.25	1.22	1.03	1.05	1.57	2.18
Emery	2.40	3.09	2.47	2.52	1.90	1.91	2.67	2.95
Grand	0.03	0.09	0.18	0.06	0.12	0.06	0.04	0.15
San Juan	0.11	0.09	0.09	0.05	0.05	0.07	0.05	0.15
REGIONAL TOTALS	3.40	4.82	3.99	3.86	3.10	3.09	4.33	5.43
Unknown Counties	1.50	0.77	2.45	2.95	0.84	0.32	0.19	0.24
Mixed Counties	0.14	0.00	0.00	0.01	0.01	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100	100

Table 13. Statewide summary of pheasant harvest statistics, 1948-1981.

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
<hr/>					
TOTALS (1948-81)	2,832,979	7,983,355	7,444,244	1.07	2.82
<hr/>					
AVERAGES (1948-80)	83,320	234,822	224,339	1.05	2.82

Table 14. Pheasant field bag check summary, 1981.

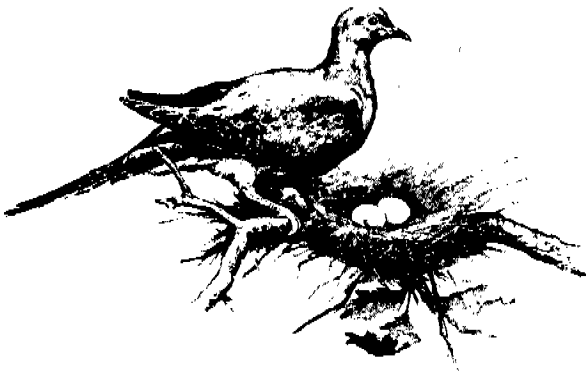
Region and County	ALL HUNTES				COMPLETE HUNTES						
	Total Parties	Total Hunters	Total Hours	Total Birds/100 Hr	Total Complete Hunts	Total Hunters	Total Hours	Total Birds/100 Hr	Birds/Hunter		
<u>Northern Region</u>											
Box Elder	241	474	1,156	269	23	241	474	1,156	269	23	0.57
Cache	--	--	--	--	--	--	--	--	--	--	--
Davis	67	157	647	36	5	40	87	515	21	4	0.24
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	97	272	780	144	18	50	146	509	105	21	0.72
<b>REGIONAL TOTALS</b>	<b>405</b>	<b>903</b>	<b>2,583</b>	<b>449</b>	<b>17</b>	<b>331</b>	<b>707</b>	<b>2,180</b>	<b>395</b>	<b>18</b>	<b>0.56</b>
<u>Central Region</u>											
Juab	56	183	377	69	18	8	16	48	7	16	0.44
Salt Lake	23	56	125	22	18	4	11	51	5	10	0.45
Sanpete	177	583	1,890	396	21	41	104	478	120	25	1.15
Tooele	39	92	184	62	34	6	8	21	14	67	1.75
Utah	213	474	1,288	280	22	77	145	424	137	32	0.94
Wasatch	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>508</b>	<b>1,388</b>	<b>3,864</b>	<b>829</b>	<b>21</b>	<b>136</b>	<b>284</b>	<b>1,022</b>	<b>283</b>	<b>28</b>	<b>0.99</b>
<u>Southern Region</u>											
Beaver	32	72	194	48	25	14	38	134	33	25	0.86
Garfield	--	--	--	--	--	--	--	--	--	--	--
Iron	25	91	283	57	20	8	25	105	27	26	1.08
Kane	--	--	--	--	--	--	--	--	--	--	--
Millard	301	856	2,838	533	19	98	234	864	176	20	0.75
Piute	--	--	--	--	--	--	--	--	--	--	--
Sevier	65	224	814	230	28	33	97	405	129	32	1.33
Washington	--	--	--	--	--	--	--	--	--	--	--
Wayne	65	154	313	40	13	6	11	91	5	5	0.45
<b>REGIONAL TOTALS</b>	<b>488</b>	<b>1,397</b>	<b>4,442</b>	<b>908</b>	<b>20</b>	<b>159</b>	<b>405</b>	<b>1,599</b>	<b>370</b>	<b>23</b>	<b>0.91</b>
<u>Northeastern Region</u>											
Daggett	--	--	--	--	--	--	--	--	--	--	--
Duchesne	195	484	2,922	561	19	156	343	2,517	507	20	1.48
Uintah	117	342	1,566	268	17	86	211	1,372	207	15	0.98
<b>REGIONAL TOTALS</b>	<b>312</b>	<b>826</b>	<b>4,488</b>	<b>829</b>	<b>19</b>	<b>242</b>	<b>554</b>	<b>3,889</b>	<b>714</b>	<b>18</b>	<b>1.29</b>
<u>Southeastern Region</u>											
Carbon	--	--	--	--	--	--	--	--	--	--	--
Emery	7	20	50	6	12	5	16	44	5	11	0.31
Grand	1	6	12	2	17	1	6	12	2	17	0.33
San Juan	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>8</b>	<b>26</b>	<b>62</b>	<b>8</b>	<b>13</b>	<b>6</b>	<b>22</b>	<b>56</b>	<b>7</b>	<b>12</b>	<b>0.31</b>
<b>STATE TOTALS</b>	<b>1,721</b>	<b>4,540</b>	<b>15,439</b>	<b>3,023</b>	<b>20</b>	<b>874</b>	<b>1,972</b>	<b>8,746</b>	<b>1,769</b>	<b>20</b>	<b>0.90</b>

Table 15. Pheasant hunter success trend as determined by field bag check, 1976-81.

Region and County	1976		1977		1978		1979		1980		1981	
	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
<b>Northern Region</b>												
Box Elder	24	0.74	18	0.54	24	0.62	27	0.68	26	0.62	23	0.57
Cache	15	0.61	17	0.63	17	0.62	--	--	27	0.97	--	--
Davis	14	0.51	9	0.25	19	0.54	19	0.75	13	0.33	4	0.24
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	10	0.35	13	0.75	16	1.25	--	--	22	0.89	21	0.72
<b>REGIONAL TOTALS</b>	<b>17</b>	<b>0.60</b>	<b>16</b>	<b>0.51</b>	<b>21</b>	<b>0.61</b>	<b>25</b>	<b>0.69</b>	<b>24</b>	<b>0.62</b>	<b>18</b>	<b>0.56</b>
<b>Central Region</b>												
Juab	7	0.11	27	0.67	82	0.75	24	0.61	22	0.44	16	0.44
Salt Lake	11	0.12	4	0.07	3	0.05	0	0.00	--	--	10	0.45
Sanpete	15	1.09	27	0.73	17	0.71	55	1.40	19	0.95	25	1.15
Tooele	27	0.53	67	2.00	167	2.00	160	2.00	120	2.00	67	1.75
Utah	14	1.05	25	0.66	27	0.80	34	0.91	27	0.80	32	0.94
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>15</b>	<b>0.89</b>	<b>23</b>	<b>0.59</b>	<b>24</b>	<b>0.73</b>	<b>38</b>	<b>0.99</b>	<b>25</b>	<b>0.83</b>	<b>28</b>	<b>0.99</b>
<b>Southern Region</b>												
Beaver	14	0.16	43	0.67	12	0.33	24	0.95	--	--	25	0.86
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	17	0.67	43	1.25	37	1.13	25	0.75	26	1.08
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	13	0.44	10	0.37	19	0.62	21	0.83	28	0.90	20	0.75
Piute	--	--	--	--	25	0.50	--	--	--	--	--	--
Sevier	17	0.63	20	1.00	23	1.04	31	0.99	29	1.17	32	1.33
Washington	21	0.33	12	0.29	32	0.59	60	1.00	25	0.64	--	--
Wayne	17	0.35	--	--	--	--	--	--	--	--	5	0.98
<b>REGIONAL TOTALS</b>	<b>15</b>	<b>0.50</b>	<b>13</b>	<b>0.50</b>	<b>21</b>	<b>0.75</b>	<b>23</b>	<b>0.87</b>	<b>28</b>	<b>0.98</b>	<b>23</b>	<b>0.91</b>
<b>Northeastern Region</b>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	15	1.41	16	1.14	18	1.37	15	0.97	18	1.21	20	1.48
Uintah	18	1.27	15	1.01	20	1.48	19	0.26	19	0.61	15	0.98
<b>REGIONAL TOTALS</b>	<b>16</b>	<b>1.34</b>	<b>16</b>	<b>1.10</b>	<b>19</b>	<b>1.41</b>	<b>17</b>	<b>1.07</b>	<b>19</b>	<b>1.04</b>	<b>18</b>	<b>1.29</b>
<b>Southeastern Region</b>												
Carbon	9	0.24	11	0.25	18	0.41	27	0.74	18	0.47	--	--
Emery	18	0.44	21	0.75	10	0.72	29	0.83	22	0.83	11	0.31
Grand	19	1.00	--	--	--	--	--	--	--	--	17	0.33
San Juan	8	0.23	0	0.00	40	1.00	0	0.00	--	0.00	--	--
<b>REGIONAL TOTALS</b>	<b>16</b>	<b>0.42</b>	<b>18</b>	<b>0.58</b>	<b>12</b>	<b>0.58</b>	<b>28</b>	<b>0.79</b>	<b>21</b>	<b>0.75</b>	<b>12</b>	<b>0.31</b>
<b>STATE TOTALS</b>	<b>16</b>	<b>0.85</b>	<b>16</b>	<b>0.66</b>	<b>20</b>	<b>0.88</b>	<b>22</b>	<b>0.89</b>	<b>22</b>	<b>0.84</b>	<b>20</b>	<b>0.90</b>

# MIGRATORY UPLAND GAME BIRDS

## SUMMARY



### Mourning Doves

The breeding density index increased significantly in 1981 but was still slightly below average.

Harvest statistics derived from the questionnaire showed decreased hunter pressure and harvest compared to 1980. The total harvest was the fifth highest ever recorded but was 1 percent below the 1971-80 average. Hunter success decreased 13 percent.

Field bag checks indicated a significant increase in hunter success contrary to the questionnaire survey. The 1981 hunt was good and comparable to the 1980 hunt.

Division personnel collected 3,913 wings for aging during 1981. Aging of wings indicated juvenile per 100 adult ratio decreased to 88 compared to 111 in 1980, and the 15-year average of 120.

### Band-tailed Pigeons

No band-tailed pigeons were banded in Utah in 1981. 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 during the 1981 season remained at a low level with only 67 hunters afield. Total hunter-days and harvest decreased from 1980 and the average. Total harvest was 101 pigeons, compared to 182 in 1980.



## MOURNING DOVE

### Call Count Survey

Results of the 1981 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 1981 survey to 1980 and the average for the period 1964-1980:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Average doves heard per route	13.9	+18	-1
Average calls heard per route	66.9	+35	+13
Average doves seen per route	19.5	+142	+35

Coo count data indicated increased breeding activity in late May compared to 1980, but continued to be below the long-term average.

### Harvest

#### Hunter Questionnaire

Information obtained from the hunter questionnaire for 1981 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 1981 compared to 1980 and the 10-year (1971-80) average:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Mourning dove hunters	30,060	-8	-5
Mourning dove harvest	310,068	-10	-1
Hunter-days afield	101,728	+4	-4
Mourning doves per hunter-day	3.05	-13	+3
Mourning doves hunter	10.31	-2	+4

Hunting pressure and harvest decreased from 1980 and was slightly below the previous ten year average. Hunter success also decreased slightly. The harvest was fifth highest on record, which indicated a very good hunt.

Long-term harvest trends are depicted in Figure 2.



### Field Bag Checks

A summary of field bag check data for 1981 is shown in Table 8. Hunter success trends determined via this method are shown in Table 9. Results of the 1981 survey compared to 1980 and the average (1967-80) follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total hunters checked	2,329	-39	+27
Total hours hunted	8,858	-41	+42
Doves per hunter (complete hunts)	4.34	+48	+26
Doves bagged per 100 hours	96	+28	+3
Average hours per hunter-day (complete hunts)	4.1	-11	+11
Hours hunted per dove bagged	0.9	-31	-18

Field bag checks indicated a significant increase in hunter success. This contradicts the questionnaire results which indicated a decrease in hunter success. The total number of hunters checked was down 39 percent from 1980. Dove hunters spent less amount of time afield per hunter-day than in 1980, and less 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 1972 through 1981 is contained in Table 10. Hatching dates for immature doves harvested in the Northern Region are shown in Table 11.

Following is a comparison of data collected in 1981 to 1980 and long-term averages (1966-80):

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Sample size	3,913	+1	+20
Immatures/100 adults	88	-21	-27
Percent of immatures hatched on:			
August 3 or later	46.1	+29	+18
July 25 or later	93.9	+19	+18
Before July 25	6.2	-71	-69

More wings were collected for aging during the 1981 season compared to 1980. The 88 immatures per 100 adults ratio indicated a less successful hatch than 1980 and was well below average. Wing analysis indicated later hatching for 1981 compared with 1980.

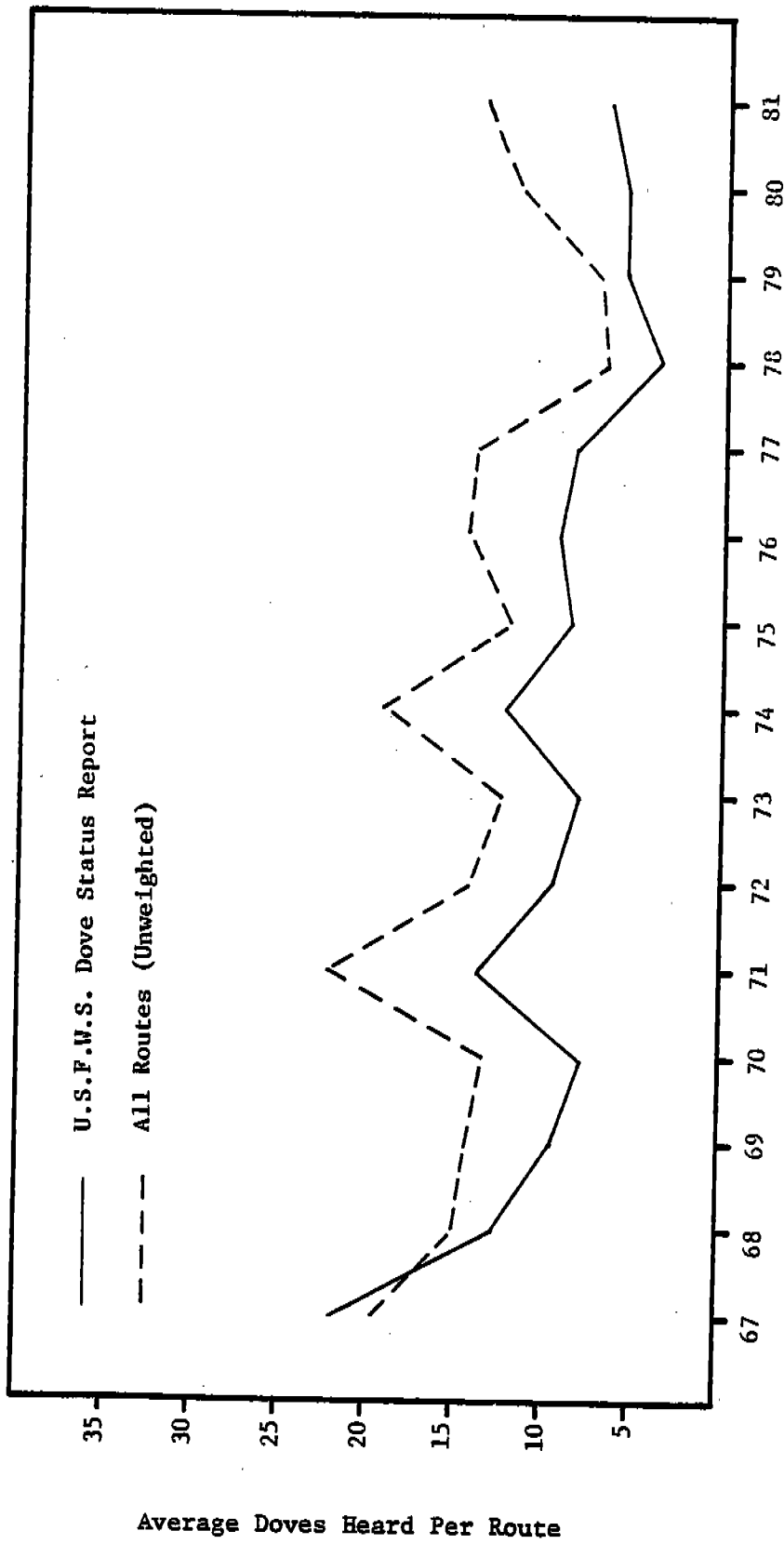


Figure 1. Mourning dove breeding density index trend.

Average Doves Heard Per Route

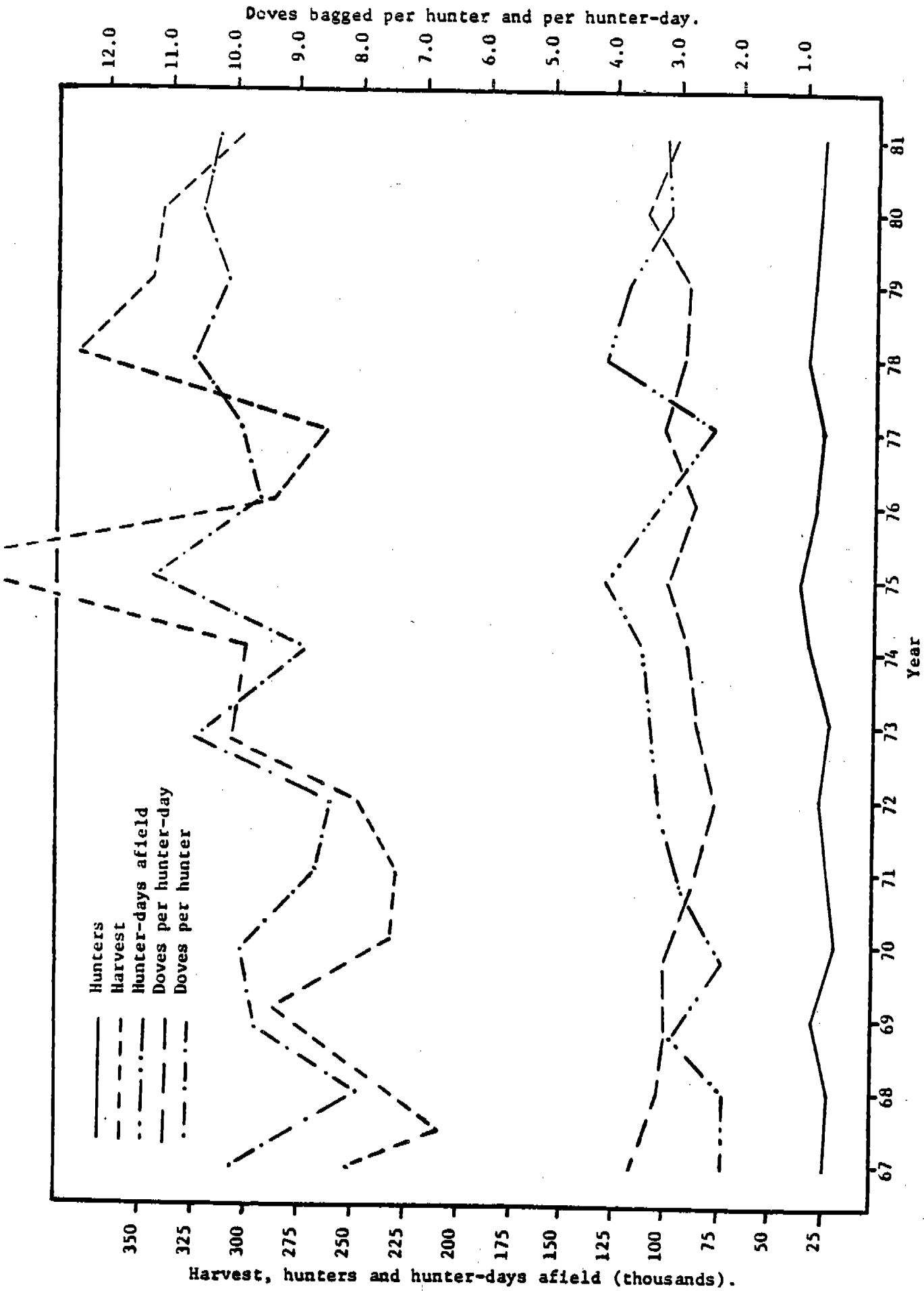


Figure 2. Statewide trends of mourning dove harvest statistics.

Table 1. Summary of the mourning dove call-count survey for 1981.

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	4	13	4
Box Elder	R1500	8	18	15
REGIONAL TOTALS		12	31	19
<u>Central Region</u>				
Juab	R2830	22	94	4
REGIONAL TOTALS		22	94	4
<u>Southern Region</u>				
Sevier-Sanpete	R0370	0	0	6
Wayne-Sevier	R0660	14	49	15
Garfield	R1090	9	29	0
Millard	R3640	10	31	33
Beaver	R3820	7	30	30
Iron	R4000	36	197	20
Washington	R4310	6	31	2
REGIONAL TOTALS		82	367	106
<u>Northeastern Region</u>				
Duchesne	R0080	13	54	0
Uintah	R0220	19	246	9
REGIONAL TOTALS		32	300	9
<u>Southeastern Region</u>				
Emery	R0540	22	114	6
San Juan	R1170	38	97	149
San Juan	R1450	0	0	0
REGIONAL TOTALS		60	211	155
STATE TOTALS		208	1,003	293
STATE AVERAGE		13.9	66.9	19.5
PERCENT CHANGE (from previous year)		+18.2	+34.8	+142.1

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, 1970-81.

Region and County	Route Number	Number of Doves Heard Per Route											
		1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
<b>Northern Region</b>													
Summit	R1020	11	10	7	3	3	3	11	10	5	6	5	4
Box Elder	R1500	7	4	2	5	3	5	1	4	2	9	4	8
<b>REGIONAL TOTALS</b>		18	14	9	8	6	8	12	14	7	15	9	12
<b>Central Region</b>													
Juab	R2830	15	32	6	17	16	13	28	25	31	15	31	22
<b>REGIONAL TOTALS</b>		15	32	6	17	16	13	28	25	31	15	31	22
<b>Southern Region</b>													
Sevier-Sanpete	R0370	1	1	0	0	0	0	0	2	0	0	3	0
Wayne-Sevier	R0660	8	11	20	11	16	7	5	8	1	2	5	14
Garfield	R1090	6	14	29	0	0	0	3	1	0	0	0	9
Millard	R3640	7	17	19	24	22	21	6	29	8	4	2	10
Beaver	R3820	17	12	13	6	24	0	0	0	0	5	9	7
Iron	R4000	15	24	20	35	103	42	45	27	12	14	40	36
Washington	R4310	54	64	61	26	32	37	19	15	1	4	3	6
<b>REGIONAL TOTALS</b>		108	143	162	102	197	107	78	82	22	29	62	82
<b>Northeastern Region</b>													
Duchesne	R0080	3	16	8	3	14	9	11	14	2	2	1	13
Uintah	R0220	15	66	4	18	12	7	27	7	4	--	49	19
<b>REGIONAL TOTALS</b>		18	82	12	21	26	16	38	21	6	2	50	32
<b>Southeastern Region</b>													
Emery	R0540	9	10	1	27	4	6	14	4	10	9	7	22
San Juan	R1170	33	60	24	17	41	32	51	67	24	28	14	38
San Juan	R1450	*	*	*	*	*	*	2	1	3	1	3	0
<b>REGIONAL TOTALS</b>		42	70	25	44	45	38	67	72	37	38	24	60
<b>STATE TOTALS</b>		201	341	214	192	290	182	223	214	103	99	176	208
<b>STATE AVERAGES</b>		13.4	22.7	14.3	12.8	19.3	12.1	14.9	14.3	6.9	7.1	11.7	13.9
<b>PERCENT CHANGE</b> (from previous year)		-6	+69	-37	-10	+51	-37	+23	-4	-52	+3	+65	+18

\*Automatic zero.

Table 3. Summary of mourning dove hunter success and distribution of harvest and hunting pressure by region and county, 1981.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	140	9,064	27,555	3.04	8.91	8.89
Cache	51	3,036	8,576	2.83	2.98	2.77
Davis	46	3,715	5,902	1.59	3.65	1.90
Morgan	21	1,189	3,248	2.73	1.17	1.05
Rich	5	233	701	3.00	0.23	0.23
Summit	10	446	1,422	3.19	0.44	0.46
Weber	78	4,798	10,445	2.18	4.72	3.37
REGIONAL TOTALS	351	22,481	57,849	2.57	22.10	18.66
<u>Central Region</u>						
Juab	115	5,668	21,675	3.82	5.57	6.99
Salt Lake	129	8,300	21,993	2.65	8.16	7.09
Sanpete	47	2,484	8,024	3.23	2.44	2.59
Tooele	127	7,175	16,474	2.30	7.05	5.31
Utah	284	18,214	53,857	2.96	17.90	17.37
Wasatch	11	1,656	2,420	1.46	1.63	0.78
REGIONAL TOTALS	713	43,498	124,443	2.86	42.76	40.13
<u>Southern Region</u>						
Beaver	20	1,083	5,265	4.86	1.06	1.70
Garfield	18	1,189	4,776	4.02	1.17	1.54
Iron	44	2,951	13,034	4.42	2.90	4.20
Kane	16	892	4,203	4.71	0.88	1.36
Millard	98	5,838	23,967	4.11	5.74	7.73
Piute	7	785	3,184	4.05	0.77	1.03
Sevier	39	3,927	9,022	2.30	3.86	2.91
Washington	31	2,335	9,786	4.19	2.30	3.16
Wayne	4	531	1,996	3.76	0.52	0.64
REGIONAL TOTALS	277	19,530	75,234	3.85	19.20	24.26
<u>Northeastern Region</u>						
Daggett	6	361	361	1.00	0.35	0.12
Duchesne	31	1,974	7,430	3.76	1.94	2.40
Uintah	33	3,397	6,156	1.81	3.34	1.99
REGIONAL TOTALS	70	5,732	13,947	2.34	5.63	4.50
<u>Southeastern Region</u>						
Carbon	36	2,208	7,557	3.42	2.17	2.44
Emery	39	2,845	10,296	3.62	2.80	3.32
Grand	35	2,930	12,079	4.12	2.88	3.90
San Juan	35	2,271	8,513	3.75	2.23	2.75
REGIONAL TOTALS	145	10,253	38,445	3.75	10.08	12.40
Unknown counties	2	234	149	0.64	0.23	0.05
Mixed counties	0	0	0	0.00	0.00	0.00
STATE TOTALS	1,558	101,728	310,068	3.05	100	100

\*Total hunter trips from questionnaire returns.

Table 4. Summary of mourning doves bagged per hunter-day by region and county, 1974-81.

Region and County	Year							
	1974	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>								
Box Elder	3.34	4.74	3.55	3.92	3.60	3.76	4.97	3.04
Cache	1.92	2.62	2.26	2.84	1.98	2.47	2.77	2.83
Davis	1.30	1.70	1.54	1.81	1.49	1.34	1.79	1.59
Morgan	3.09	3.14	2.58	3.87	2.10	3.14	2.91	2.73
Rich	1.97	2.89	1.53	0.82	4.19	1.71	2.00	3.00
Summit	2.21	2.73	1.52	5.69	1.86	3.36	4.71	3.19
Weber	1.53	1.78	1.67	1.97	1.66	1.91	2.29	2.18
REGIONAL TOTALS	2.14	2.89	2.39	2.91	2.38	2.53	3.31	2.57
<u>Central Region</u>								
Juab	3.62	5.30	4.11	5.07	4.46	4.38	4.70	3.82
Salt Lake	1.88	2.35	2.16	2.58	2.13	2.28	2.33	2.65
Sanpete	3.65	2.65	3.15	4.16	2.73	2.61	3.64	3.23
Tooele	2.80	3.70	3.53	3.26	3.19	2.53	3.43	2.30
Utah	2.66	2.50	2.30	2.92	2.39	2.22	3.08	2.96
Wasatch	2.00	3.12	1.83	2.50	2.89	2.59	3.45	1.46
REGIONAL TOTALS	2.70	2.98	2.71	3.20	2.73	2.62	3.23	2.86
<u>Southern Region</u>								
Beaver	2.94	5.37	2.87	5.27	5.67	4.94	5.03	4.86
Garfield	1.79	5.35	2.44	1.04	1.70	4.56	5.17	4.02
Iron	4.65	4.09	4.45	4.00	4.48	4.52	5.02	4.42
Kane	2.83	4.92	3.52	3.05	5.08	4.17	5.86	4.71
Millard	5.14	4.73	3.78	4.62	5.13	4.92	5.43	4.11
Piute	2.00	3.30	2.59	3.10	2.60	2.18	3.90	4.05
Sevier	2.83	3.67	2.47	3.66	2.52	2.91	3.63	2.30
Washington	3.85	5.05	2.70	4.84	3.90	3.25	3.73	4.19
Wayne	2.83	4.10	4.93	6.40	3.64	6.04	2.93	3.76
REGIONAL TOTALS	3.82	4.36	3.26	4.23	3.88	4.05	4.58	3.85
<u>Northeastern Region</u>								
Daggett	2.12	4.63	5.00	3.44	3.40	2.79	1.50	1.00
Duchesne	2.80	3.55	4.76	2.65	3.43	3.13	3.07	3.76
Uintah	1.78	3.03	2.27	3.10	2.70	2.96	3.44	1.81
REGIONAL TOTALS	2.05	3.21	3.01	2.94	3.01	3.01	3.22	2.43
<u>Southeastern Region</u>								
Carbon	2.55	2.87	2.31	2.25	2.85	3.14	3.88	3.42
Emery	1.86	1.93	2.86	2.88	3.00	2.54	3.04	3.62
Grand	3.62	3.68	1.94	1.26	4.00	3.68	4.66	4.12
San Juan	4.22	3.21	2.24	3.88	4.09	3.97	3.80	3.75
REGIONAL TOTALS	2.49	2.73	2.41	2.61	3.40	3.09	3.69	3.75
Unknown counties	3.55	4.18	3.45	2.13	3.46	5.09	5.00	0.64
Mixed counties	3.00	--	--	10.00	2.00	0.00	0.00	0.00
STATE TOTALS	2.71	3.20	2.74	3.21	2.95	2.92	3.52	3.05

Table 5. Percentage distribution of mourning dove harvest by region and county, 1974-81.

Region and County	Year							
	1974	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>								
Box Elder	9.09	9.86	9.82	8.44	8.10	10.01	10.46	8.89
Cache	3.68	3.50	4.19	2.64	2.71	3.00	2.12	2.77
Davis	2.62	1.68	2.16	1.81	1.61	2.39	1.38	1.90
Morgan	1.57	1.02	0.96	1.55	0.65	1.03	0.96	1.05
Rich	0.47	0.30	0.33	0.08	0.59	0.22	0.27	0.23
Summit	0.40	0.35	0.41	1.16	0.36	0.19	0.16	0.46
Weber	4.00	3.74	3.39	3.72	3.07	3.78	3.72	3.37
<b>REGIONAL TOTALS</b>	<b>21.83</b>	<b>20.43</b>	<b>21.26</b>	<b>19.40</b>	<b>17.08</b>	<b>20.63</b>	<b>19.07</b>	<b>18.66</b>
<u>Central Region</u>								
Juab	8.30	9.64	6.98	7.62	8.88	9.55	9.25	6.99
Salt Lake	6.51	8.02	7.67	8.49	7.16	9.39	7.89	7.09
Sanpete	3.61	2.10	5.31	3.31	3.87	4.34	3.94	2.59
Tooele	5.06	6.83	8.39	7.15	6.18	5.57	7.55	5.31
Utah	19.26	16.31	16.70	16.40	16.20	12.73	14.92	17.37
Wasatch	0.53	0.83	0.37	0.56	0.66	0.63	0.80	0.78
<b>REGIONAL TOTALS</b>	<b>43.26</b>	<b>43.73</b>	<b>45.42</b>	<b>43.54</b>	<b>42.95</b>	<b>42.22</b>	<b>44.35</b>	<b>40.13</b>
<u>Southern Region</u>								
Beaver	1.15	2.03	2.00	2.55	1.68	1.62	1.69	1.70
Garfield	0.52	0.64	0.30	0.15	0.65	1.11	1.07	1.54
Iron	3.87	3.96	4.40	3.97	4.20	2.60	2.60	4.20
Kane	0.51	0.49	1.10	0.38	0.98	0.80	0.40	1.36
Millard	8.68	5.30	5.92	7.27	9.28	10.84	8.55	7.73
Piute	0.22	0.42	1.10	0.37	0.81	0.45	0.60	1.03
Sevier	4.57	6.07	4.01	4.83	4.26	5.23	3.63	2.91
Washington	3.87	4.31	2.38	3.82	2.91	2.45	3.39	3.16
Wayne	0.11	0.66	1.00	0.36	0.86	1.25	0.22	0.64
<b>REGIONAL TOTALS</b>	<b>23.48</b>	<b>23.89</b>	<b>22.21</b>	<b>23.70</b>	<b>25.63</b>	<b>26.36</b>	<b>22.15</b>	<b>24.26</b>
<u>Northeastern Region</u>								
Daggett	0.11	0.34	0.03	0.35	0.09	0.22	0.04	0.12
Duchesne	1.06	1.00	1.58	1.51	2.31	1.66	2.07	2.40
Uintah	1.87	3.35	1.81	2.18	2.61	2.79	2.29	1.99
<b>REGIONAL TOTALS</b>	<b>3.03</b>	<b>4.69</b>	<b>3.43</b>	<b>4.04</b>	<b>5.01</b>	<b>4.67</b>	<b>4.41</b>	<b>4.50</b>
<u>Southeastern Region</u>								
Carbon	1.56	2.22	1.50	2.03	1.75	1.96	2.82	2.44
Emery	2.12	1.60	1.74	1.84	2.38	1.92	2.85	3.32
Grand	0.65	1.12	0.62	0.33	2.32	0.90	1.98	3.90
San Juan	1.20	1.70	0.74	1.51	1.90	1.10	2.30	2.75
<b>REGIONAL TOTALS</b>	<b>5.54</b>	<b>6.64</b>	<b>4.61</b>	<b>5.70</b>	<b>8.35</b>	<b>5.89</b>	<b>9.95</b>	<b>12.40</b>
Unknown counties	2.66	0.61	3.08	3.51	0.94	0.23	0.07	0.05
Mixed counties	0.19	--	--	0.11	0.05	0.00	0.00	0.00
<b>STATE TOTALS</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>



Table 6. Percentage distribution of mourning dove hunting pressure by region and county, 1974-81.

Region and County	Year							
	1974	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>								
Box Elder	7.37	6.65	7.58	6.92	6.63	7.76	7.40	8.91
Cache	5.20	4.28	5.09	2.99	4.03	3.54	2.69	2.98
Davis	5.46	3.17	3.85	3.22	3.18	5.21	2.71	3.65
Morgan	1.38	1.04	1.02	1.29	0.91	0.95	1.16	1.17
Rich	0.64	0.33	0.59	0.31	0.42	0.37	0.49	0.23
Summit	0.49	0.41	0.74	0.65	0.57	0.17	0.12	0.44
Weber	7.10	6.73	5.58	6.07	5.44	5.76	5.72	4.72
REGIONAL TOTALS	27.63	22.60	24.46	21.45	21.17	23.77	20.30	22.10
<u>Central Region</u>								
Juab	6.20	5.82	4.66	4.84	5.87	6.36	6.93	5.57
Salt Lake	9.38	10.91	9.76	10.58	9.92	12.00	11.94	8.16
Sanpete	2.67	2.53	4.63	2.55	4.18	4.86	3.81	2.44
Tooele	4.89	5.90	6.52	7.05	5.70	6.42	7.75	7.05
Utah	19.61	20.89	19.88	18.02	20.00	16.70	17.05	17.90
Wasatch	0.72	0.85	0.56	0.72	0.68	0.71	0.82	1.63
REGIONAL TOTALS	43.48	46.90	46.01	43.76	46.36	47.04	48.29	42.76
<u>Southern Region</u>								
Beaver	1.06	1.21	1.91	1.56	0.88	0.95	1.18	1.06
Garfield	0.79	0.38	0.33	0.47	1.12	0.71	0.73	1.17
Iron	2.25	3.10	2.71	3.19	2.77	1.68	1.82	2.90
Kane	0.49	0.32	0.85	0.40	0.57	0.56	0.24	0.88
Millard	4.57	3.59	4.29	5.05	5.34	6.43	5.54	5.74
Piute	0.30	0.41	1.17	0.38	0.92	0.60	0.54	0.77
Sevier	4.37	5.29	4.46	4.24	4.98	5.24	3.53	3.86
Washington	2.72	2.73	2.42	2.54	2.20	2.20	3.20	2.30
Wayne	0.10	0.52	0.56	0.18	0.69	0.60	0.26	0.52
REGIONAL TOTALS	16.66	17.56	18.71	18.00	19.46	18.98	17.05	19.20
<u>Northeastern Region</u>								
Daggett	0.13	0.23	0.02	0.33	0.08	0.23	0.1	0.35
Duchesne	1.03	0.90	0.91	1.83	1.98	1.55	2.38	1.94
Uintah	2.84	3.54	2.19	2.26	2.84	2.74	2.35	3.34
REGIONAL TOTALS	4.00	4.67	3.12	4.22	4.90	4.52	4.83	5.63
<u>Southeastern Region</u>								
Carbon	1.66	2.47	1.78	2.90	1.81	1.82	2.56	2.17
Emery	3.09	2.65	1.67	2.05	2.34	2.21	3.30	2.80
Grand	0.49	0.98	0.87	0.83	1.71	0.71	1.50	2.88
San Juan	0.77	1.69	0.91	1.25	1.37	0.81	2.14	2.23
REGIONAL TOTALS	6.02	7.79	5.24	7.03	7.23	5.56	9.49	10.08
Unknown counties	2.03	0.47	2.45	5.31	0.180	0.13	0.05	0.23
Mixed counties	0.17	--	--	0.04	0.08	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100	100

Table 7. Statewide summary of mourning dove harvest statistics, 1951-81.

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
<hr/>					
TOTALS (1951-81)	653,908	6,231,513	1,921,352	3.24	9.53
<hr/>					
AVERAGES (1951-80)	20,795	197,382	60,654	3.25	9.49

\*Estimated.

Table 8. Mourning dove field bag check summary, 1981.

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	Birds/100 Hr Hunter
<u>Northern Region</u>									
Box Elder	63	145	592	800	63	145	592	800	135
Cache	--	--	--	--	--	--	--	--	--
Davis	11	31	84	60	8	23	66	39	59
Morgan	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>74</b>	<b>176</b>	<b>676</b>	<b>860</b>	<b>71</b>	<b>168</b>	<b>658</b>	<b>839</b>	<b>128</b>
<u>Central Region</u>									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	24	84	155	138	6	20	40	20	200
Tooele	21	53	72	47	19	49	64	46	139
Utah	45	83	166	197	0	0	0	0	--
Wasatch	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>90</b>	<b>220</b>	<b>393</b>	<b>382</b>	<b>25</b>	<b>69</b>	<b>104</b>	<b>66</b>	<b>63</b>
<u>Southern Region</u>									
Beaver	17	47	161	135	11	35	129	101	78
Garfield	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--
Millard	42	238	978	806	15	51	199	304	152
Piute	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	6	13	24	36	6	13	24	36	150
<b>REGIONAL TOTALS</b>	<b>65</b>	<b>298</b>	<b>1,163</b>	<b>977</b>	<b>32</b>	<b>99</b>	<b>352</b>	<b>441</b>	<b>125</b>
<u>Northeastern Region</u>									
Daggett	5	10	23	52	5	10	23	52	226
Duchesne	2	4	9	24	--	--	--	--	--
Uintah	12	31	63	60	4	12	21	35	166
<b>REGIONAL TOTALS</b>	<b>19</b>	<b>45</b>	<b>95</b>	<b>136</b>	<b>9</b>	<b>22</b>	<b>44</b>	<b>87</b>	<b>198</b>
<u>Southeastern Region</u>									
Carbon	6	10	16	54	1	2	2	20	1,000
Emery	4	13	18	85	2	8	11	73	664
Grand	--	--	--	--	--	--	--	--	--
San Juan	20	44	95	141	3	6	13	15	115
<b>REGIONAL TOTALS</b>	<b>30</b>	<b>67</b>	<b>129</b>	<b>280</b>	<b>6</b>	<b>16</b>	<b>26</b>	<b>108</b>	<b>415</b>
<b>LEHI CHECK STATION</b>	<b>540</b>	<b>1,158</b>	<b>4,673</b>	<b>3,948</b>	<b>382</b>	<b>806</b>	<b>3,371</b>	<b>3,200</b>	<b>95</b>
<b>NEPHI CHECK STATION*</b>	<b>140</b>	<b>365</b>	<b>1,729</b>	<b>1,892</b>	<b>112</b>	<b>297</b>	<b>1,443</b>	<b>1,672</b>	<b>116</b>
<b>STATE TOTALS</b>	<b>953</b>	<b>2,329</b>	<b>8,858</b>	<b>8,475</b>	<b>637</b>	<b>1,477</b>	<b>5,998</b>	<b>6,413</b>	<b>107</b>

\*Includes Millard and Juab counties

Table 9. Mourning dove hunter success trend determined by field bag checks, 1976-81.

Region and County	1976		1977		1978		1979		1980		1981	
	Doves/100 Hr Hunter	Doves/Hunter	Doves/100 Hr Hunter	Doves/Hunter	Doves/100 Hr Hunter	Doves/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
<u>Northern Region</u>												
Box Elder	114	4.35	82	2.96	74	2.76	98	3.74	151	5.98	135	5.52
Cache	--	--	177	2.88	--	--	--	--	163	5.33	--	--
Davis	--	--	31	0.36	--	--	80	1.78	81	2.74	59	1.70
Morgan	--	--	38	0.56	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	80	2.15	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	20	0.38	--	--	--	--	67	3.00	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>107</b>	<b>3.94</b>	<b>81</b>	<b>2.82</b>	<b>74</b>	<b>2.76</b>	<b>96</b>	<b>3.51</b>	<b>129</b>	<b>5.72</b>	<b>128</b>	<b>4.99</b>
<u>Central Region</u>												
Juab	100	8.36	81	4.49	80	4.00	421	9.83	68	4.30	--	--
Salt Lake	50	0.98	91	1.80	76	2.00	23	0.38	333	3.33	--	--
Sanpete	64	1.28*	38	0.69	0	0.00	81	2.23	20	0.56	200	1.00
Tooele	40	1.08*	93	4.00	80	3.00	233	7.00	241	8.09	139	0.93
Utah	67	2.63	73	2.61	70	2.08	47	1.84	53	1.80	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>66</b>	<b>2.50</b>	<b>77</b>	<b>2.53</b>	<b>72</b>	<b>2.29</b>	<b>49</b>	<b>1.85</b>	<b>75</b>	<b>3.84</b>	<b>63</b>	<b>0.96</b>
<u>Southern Region</u>												
Beaver	179	9.86	--	--	--	--	158	4.75	224	9.25	78	2.89
Garfield	98	2.32	--	--	250	6.67	196	5.36	--	--	--	--
Iron	238	7.47	666	10.00	165	5.06	321	6.77	500	10.00	--	--
Kane	--	--	--	--	393	7.66	331	9.53	180	5.65	--	--
Millard	150	3.90*	136	6.80	213	7.62	98	5.60	172	6.20	152	5.96
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	64	0.64*	--	--	--	--	--	--	--	--	--	--
Washington	--	--	231	3.92	137	4.11	500	10.00	343	6.86	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	150	2.77
<b>REGIONAL TOTALS</b>	<b>158</b>	<b>5.29</b>	<b>150</b>	<b>6.08</b>	<b>236</b>	<b>6.52</b>	<b>141</b>	<b>6.34</b>	<b>203</b>	<b>6.41</b>	<b>125</b>	<b>4.45</b>
<u>Northeastern Region</u>												
Daggett	--	--	--	--	0	0.00	225	2.12	59	1.11	226	5.20
Duchesne	115	2.07	--	--	380	4.75	--	--	100	1.00	--	--
Uintah	108	2.59	121	2.66	97	2.00	87	1.75	124	2.38	166	2.92
<b>REGIONAL TOTALS</b>	<b>110</b>	<b>2.35</b>	<b>121</b>	<b>2.66</b>	<b>146</b>	<b>2.77</b>	<b>156</b>	<b>2.00</b>	<b>87</b>	<b>1.61</b>	<b>198</b>	<b>3.95</b>
<u>Southeastern Region</u>												
Carbon	0	0.00	127	3.12	100	2.17	61	1.75	177	3.65	1,000	10.00
Emery	50	1.50	33	2.00	50	0.50	--	--	233	3.50	664	9.13
Grand	47	1.06*	50	1.50	--	--	50	0.50	--	--	--	--
San Juan	203	5.69	250	6.33	400	10.00	217	4.19	261	5.64	115	2.50
<b>REGIONAL TOTALS</b>	<b>155</b>	<b>5.21</b>	<b>168</b>	<b>4.27</b>	<b>196</b>	<b>4.00</b>	<b>133</b>	<b>3.00</b>	<b>215</b>	<b>4.43</b>	<b>415</b>	<b>6.75</b>
<u>NEPHI CHECKING STATION</u>												
LEHI CHECKING STATION	--	--	--	--	--	--	86	4.65	37	1.68	116	5.62
<b>STATE TOTALS</b>	<b>97</b>	<b>3.81</b>	<b>93</b>	<b>3.14</b>	<b>82</b>	<b>2.65</b>	<b>69</b>	<b>2.86</b>	<b>64</b>	<b>2.94</b>	<b>107</b>	<b>4.34</b>

\*Doves per hunter index based on all hunts.

Table 10. Age composition (Immatures/100 Adults) of mourning doves harvested, 1972-81.

Region and County	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1972-80 Avg.
	I/100A (n)	I/100A (n)	I/100A (n)	I/100A (n)	I/100A (n)	I/100A (n)	I/100A (n)	I/100A (n)	I/100A (n)	I/100A (n)	I/100A (n)
<b>Northern Region</b>											
Box Elder	112 (1380)	102 (1324)	129 (1430)	123 (2830)	103 (1870)	216 (1296)	88 (999)	84 (1271)	121 (1454)	107 (700)	
Cache	155 (28)	100 (2)	--	66 (128)	114 (15)	0 (2)	--	106 (33)	151 (113)	--	
Davis	--	450 (11)	--	100 (4)	--	150 (10)	--	71 (65)	169 (43)	--	
Morgan	41 (24)	--	250 (7)	84 (116)	--	--	--	--	--	--	
Rich	125 (9)	100 (10)	--	--	--	--	--	92 (25)	--	--	
Sumait	--	--	--	--	--	--	--	--	--	--	
Weber	70 (136)	71 (24)	213 (119)	100 (26)	117 (13)	233 (20)	--	190 (29)	--	--	
<b>REGIONAL TOTALS</b>	106 (1577)	103 (1371)	134 (1556)	118 (3104)	103 (1898)	216 (1328)	88 (999)	86 (1423)	124 (1610)	107 (700)	120 (1672)
<b>Central Region</b>											
Juab	79 (86)	29 (66)	105 (88)	228 (220)	240 (136)	283 (109)	63 (75)	--	--	--	
Salt Lake	57 (74)	136 (33)	50 (9)	109 (338)	147 (42)	275 (120)	--	--	--	--	
Sanpete	227 (85)	46 (114)	185 (111)	650 (30)	222 (87)	139 (74)	--	--	--	--	
Tooele	211 (28)	290 (82)	99 (219)	76 (202)	156 (115)	195 (177)	60 (262)	84 (103)	118 (96)	78 (71)	
Utah	178 (153)	132 (267)	123 (261)	128 (332)	170 (278)	113 (286)	61 (1814)	80 (1823)	45 (29)	--	
Wasatch	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	130 (426)	101 (562)	118 (688)	128 (1182)	184 (658)	177 (856)	61 (2151)	81 (1926)	95 (125)	78 (71)	119 (953)
<b>Southern Region</b>											
Beaver	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	176 (47)	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	
Plute	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	--	--	--	176 (47)	320 (30)	--	--	--	--	--	--
<b>Northeastern Region</b>											
Beggett	--	--	--	--	--	--	--	--	--	--	
Duchesne	--	--	--	--	--	--	--	--	--	--	
Utah	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	--	--	--	--	--	--	--	--	--	--	--
<b>Southeastern Region</b>											
Carbon	--	--	--	--	--	--	--	67 (167)	--	--	
Emery	--	--	--	233 (30)	--	--	--	--	--	--	
Grand	--	--	--	300 (64)	--	--	--	--	--	--	
San Juan	--	--	--	189 (214)	97 (274)	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	--	--	263 (196)	215 (328)	97 (274)	--	--	67 (167)	281 (80)	--	185 (203)
<b>NEPHI CHECKING STATION</b>	--	--	--	--	--	--	87 (2013)	114 (1814)	100 (862)	105 (1067)	100 (1553)
<b>LEHI CHECKING STATION</b>	--	--	--	--	--	--	--	--	98 (204)	75 (2075)	--
<b>STATE TOTALS</b>	111 (2003)	102 (1933)	136 (2440)	126 (4661)	118 (2860)	200 (2184)	75 (5163)	91 (5330)	111 (3881)	88 (3913)	119 (5384)

Table 11. Percent of harvest by hatching date of immature mourning doves in northern Utah, 1972-81.

Date Hatched	Age* (Days)	P	Percent of Harvest by Hatch Date										Sample Size									
			1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Aug 3	29	none	40.8	22.2	48.3	11.1	42.5	36.4	52.8	45.6	35.6	46.1	322	154	428	177	409	329	246	265	316	166
Jul 31	32	1	27.2	21.4	28.6	24.3	22.9	27.9	25.3	22.7	26.9	33.6	215	149	253	389	220	252	118	132	239	121
Jul 25	38	2	15.7	18.8	14.3	32.3	17.9	17.3	12.0	14.3	16.4	14.2	124	131	127	517	172	156	56	83	146	51
Jul 18	45	3	9.6	15.4	3.7	18.4	7.2	6.7	5.8	8.1	11.6	5.0	76	107	33	295	69	60	27	47	103	18
Jul 9	54	4	3.9	9.9	2.3	8.6	4.0	4.3	3.0	5.0	5.1	0.6	31	69	20	137	38	39	14	29	45	2
Jun 30	63	5	2.3	6.8	1.1	5.3	2.0	2.4	0.4	1.5	2.4	--	18	47	10	85	19	22	2	9	21	0
Jun 21	72	6	0.2	3.7	1.2	--	1.0	2.9	0.2	1.7	1.5	--	2	26	11	--	10	26	1	10	13	0
Jun 8	85	7	0.1	1.6	0.4	--	0.9	2.2	--	--	0.3	--	1	11	4	--	9	20	0	0	3	0
May 22	102	8	--	0.1	--	--	1.7	--	0.2	0.2	--	0.3	--	1	--	--	16	--	1	1	0	1
Apr 27	127	9	--	--	--	--	--	--	0.2	0.9	0.2	0.3	--	--	--	--	--	--	1	5	2	1
Apr 21	133	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0
			100	100	100	100	100	100	100	100	100	100	789	695	886	1600	962	904	466	581	888	360

\*Allen, J. M., 1963.

P = last primary molted.

## BAND-TAILED PIGEON

### Banding

During 1981, no pigeons were banded in Utah (Table 12). Banding efforts were discontinued in 1979 as a result of recommendations of the Four-Corners Band-tailed Pigeon Study Committee. The Committee concluded that, from 1979, banding should be limited to specific research needs.

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 1981 harvest questionnaire are shown in Table 13 and harvest trends since 1970 in Table 14. A comparison of the 1981 season to 1980 and the average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Band-tailed pigeon hunters	67	+8	+18
Band-tailed pigeon harvest	101	-45	-39
Hunter-days afield	142	-19	+3
Pigeons per hunter-day	0.7	-30	-42
Pigeons per hunter	1.5	-48	-48

Total hunters increased slightly from 1980, but hunter-days afield decreased 19 percent. Total harvest also decreased dramatically from 1980. Most of the 1981 harvest occurred in Grand and Washington counties.

Table 12. Band-tailed pigeon banding trend for Utah, 1969-81.

Year	Adults			Immatures	Total Pigeons	Immatures/ 100 Adults	Total Recaptures*
	Males	Females	Total				
1969	147	51	198	39	237	20	7
1970	254	94	348	54	402	16	43
1971	110	52	162	79	241	49	72
1972	284	117	401	4	405	1	235
1973	263	54	317	14	331	4	162
1974	87	12	99	11	110	11	78
1975	202	70	272	13	285	5	118
1976	180	33	213	4	217	2	131
1977	286	25	311	8	319	3	64
1978	67	35	102	0	102	--	65
1979	BANDING DISCONTINUED						
1980	--	--	--	--	--	--	--
1981	--	--	--	--	--	--	--
TOTALS	1,880	543	2,423	226	2,649	9	975

\*Includes repeats and returns.



Table 13. Band-tailed pigeon harvest statistics, 1981.

Area Hunted	Participating									
	Hunters		Hunter-days		Harvest		Pigeons/ Hunter-day	Percent of Pressure*	Percent of Harvest	
	Reported	Calc.	Reported	Calc.	Reported	Calc.				
Beaver County	3	4	5	7	0	0	--	5	0	
Blue Mountain-Elk Ridge	4	6	11	16	0	0	--	11	0	
Carbon County	--	--	--	--	--	--	--	--	--	
Garfield County	--	--	--	--	--	--	--	--	--	
Iron County	11	16	16	23	10	14	0.6	16	14	
Kane County	2	3	3	4	10	14	3.3	3	14	
LaSal Mountain	16	23	38	55	37	53	1.0	38	53	
Millard County	2	3	5	7	0	0	--	5	0	
Piute County	--	--	--	--	--	--	--	--	--	
Utah County	--	--	--	--	--	--	--	--	--	
Washington County	9	13	21	30	13	19	0.6	21	19	
Wayne County	--	--	--	--	--	--	--	--	--	
<b>TOTALS</b>	<b>47</b>	<b>67</b>	<b>99</b>	<b>142</b>	<b>70</b>	<b>101</b>	<b>0.7</b>	<b>100</b>	<b>100</b>	<b>100</b>

\*Based on hunter-days.

Projection factor = 1.4359 (112 permits issued; 78 questionnaires returned).

Table 14. Band-tailed pigeon harvest trend, 1970-81.

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
<hr/>					
TOTALS (1970-81)	695	1,923	1,662	1.2	2.8
<hr/>					
AVERAGES (1970-80)	57	166	138	1.2	2.9
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# CHUKAR PARTRIDGE

## SUMMARY

The statewide breeding population of chukars decreased in 1981 following lower production during 1980. Overwinter survival was near normal. Late winter and early spring precipitation, critical to successful chukar production, was about average, indicating good reproductive potential.

Results of the brood survey indicated that brood production was above average. Favorable nesting conditions and adequate forage were available as a result of the average temperatures and precipitation during April, May and June. The indicated chukar density increased significantly during 1981. Chukars observed per 100 hours of effort remained well above average and 191 percent above 1980.

Harvest statistics reflected a decreased harvest although hunter success (chukars per hunter-day) increased 14 percent from 1980. Chukar hunters decreased 15 percent and spent 23 percent less time afield than in 1980.



### Brood Counts

Results of the annual random brood survey for 1981 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 1981 compared to 1980 and the 10-year average:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total chukars observed	1,560	+117	+58
Young per 100 adults	326	-9	-4
Mean brood size	9.48	+15	+10
Chukars observed per 100 hours	978	+191	+205
Total hours effort	169	-21	-44

Harvest data for 1980 indicated decreased breeding populations for 1981 in all regions except the Northern. Late winter and early spring precipitation (December-April) was about average over the entire state (Figure 2) producing favorable conditions for good production. Above average temperatures for the same period should have helped winter survival.

Effort on chukar brood counts decreased from 1980 and remained far below average.

Brood count sample sizes were again extremely small for all regions. The Central Region counted 24 and the Southeastern Region counted 33 of the state total of 64 broods. Chukar density increased, 205 percent above the 10-year average, indicating good production.

### Harvest

#### Hunter Questionnaire

Results of the hunter questionnaire survey for 1981 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 1981 harvest statistics to 1980 and the 23-year average:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Chukar hunters	12,907	-15	-17
Chukars harvested	44,983	-13	+2
Hunter-days afield	36,662	-23	-22
Chukars per hunter-day	1.23	+14	+30
Chukars per hunter	3.49	+2	+22

Chukar hunters spent less time afield and harvested about 6,528 less birds than in 1980. Chukars per hunter-day was above the 1980 level and was still above average statewide. The Central Region had the highest percentage of the harvest in 1981, and it also had the highest percentage of hunter pressure.

#### Field Bag Check

A summary of field bag check data for 1981 is shown in Table 10. The hunter success trend determined by field bag checks since 1976 is shown in Table 11. Data for the 1981 season compared to 1980 and the average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total hunters checked	288	+38	-49
Total hours hunted	966	+23	-62
Chukars per hunter (complete hunts)	1.69	+90	+52
Chukars bagged per 100 hours	43	+126	+79
Average hours per hunter-day (complete hunts)	3.8	-7	-17
Hours hunted per chukar bagged	2.3	-51	-51

Chukars bagged per hunter and per hunter-day.

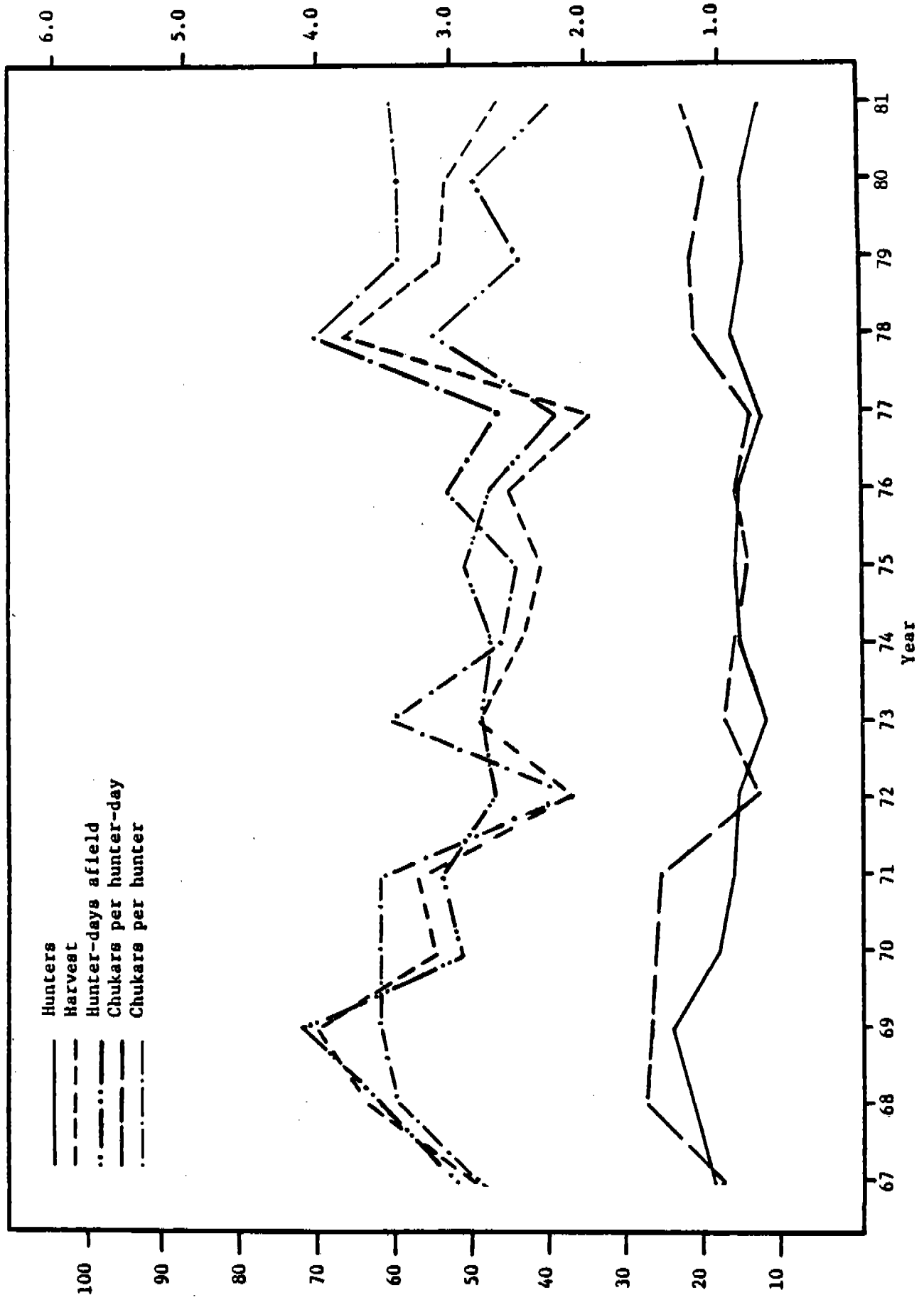


Figure 1. Statewide trends of chukar partridge harvest statistics.

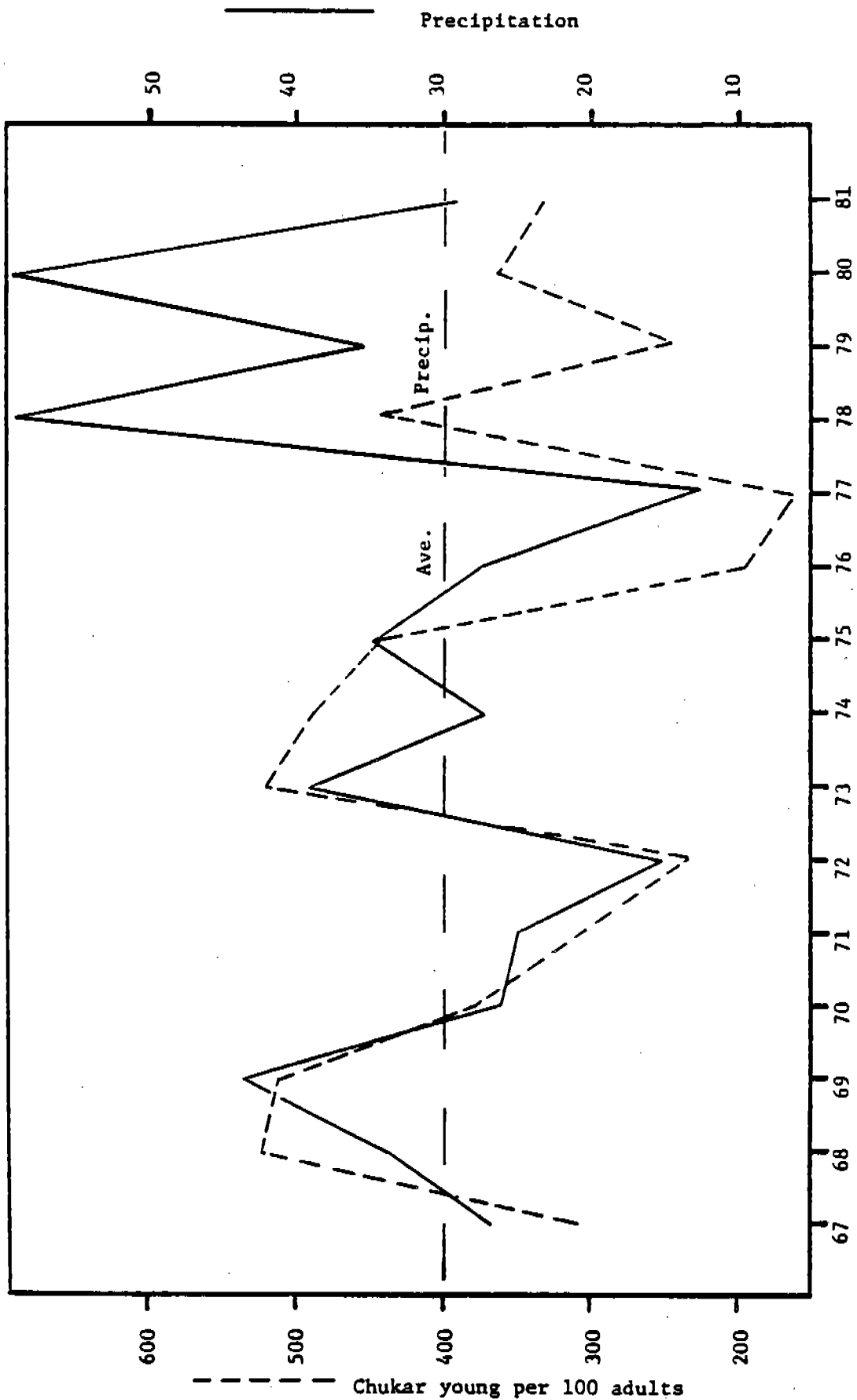


Figure 2. Relationship between late winter and early spring (Jan.-April) precipitation and chukar production.

Table 1. Chukar summer inventory summary, 1981.

Region and County	Distinct Broods		Mixed Yng & Adults		Mean Brood	Total Yng	Adults w/o Yng	Total Adults	Total Yng	Total Yng/100 Ad	Veh. Miles	Hours of Effort		Birds/100 Hr		
	# Ad	Yng	Ad	Yng								Veh. Horse	Walk Total			
<b>Northern Region</b>																
Box Elder	3	5	25	16	8.33	128	26	47	153	326	315	23	0	8	31	645
Cache	0	0	0	0	--	0	0	0	0	--	0	15	0	0	15	--
Davis	0	0	0	21	--	32	28	49	32	65	15	2	0	8	10	810
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>3</b>	<b>5</b>	<b>25</b>	<b>37</b>	<b>8.33</b>	<b>160</b>	<b>54</b>	<b>96</b>	<b>185</b>	<b>193</b>	<b>330</b>	<b>40</b>	<b>0</b>	<b>16</b>	<b>56</b>	<b>502</b>
<b>Central Region</b>																
Juab	11	11	60	5	5.45	3	4	20	63	315	135	9	0	3	12	692
Salt Lake	1	1	4	0	4.00	0	0	1	4	400	10	1	0	0	1	500
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	12	12	107	26	8.92	101	20	58	208	359	326	25	0	2	27	985
Utah	0	0	0	0	--	0	0	0	0	--	120	9	0	0	9	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>24</b>	<b>24</b>	<b>171</b>	<b>31</b>	<b>7.13</b>	<b>104</b>	<b>24</b>	<b>79</b>	<b>275</b>	<b>348</b>	<b>591</b>	<b>44</b>	<b>0</b>	<b>5</b>	<b>49</b>	<b>722</b>
<b>Southern Region</b>																
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	0	0	0	18	--	44	4	22	44	200	27	5	0	0	5	1,467
Piute	2	2	21	5	10.50	54	1	8	75	938	100	5	0	0	5	1,660
Sevier	1	1	8	0	8.00	0	0	1	8	800	20	1	0	0	1	900
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>3</b>	<b>3</b>	<b>29</b>	<b>23</b>	<b>9.67</b>	<b>98</b>	<b>5</b>	<b>31</b>	<b>127</b>	<b>410</b>	<b>147</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>1,436</b>
<b>Northeastern Region</b>																
Daggett	1	1	9	2	9.00	14	1	4	23	575	0	0	0	0	0	--
Duchesne	0	0	0	14	--	26	2	16	26	163	230	14	0	0	14	300
Uintah	0	0	0	0	--	0	43	43	0	--	15	3	4	0	7	614
<b>REGIONAL TOTALS</b>	<b>1</b>	<b>1</b>	<b>9</b>	<b>16</b>	<b>9.00</b>	<b>40</b>	<b>46</b>	<b>63</b>	<b>49</b>	<b>78</b>	<b>245</b>	<b>17</b>	<b>4</b>	<b>0</b>	<b>21</b>	<b>533</b>
<b>Southeastern Region</b>																
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	30	54	357	34	11.90	185	6	94	542	577	215	22	0	0	22	2,891
San Juan	3	3	16	(93)*	5.33	--	--	3	16	533	45	4	0	6	10	1,120*
<b>REGIONAL TOTALS</b>	<b>33</b>	<b>57</b>	<b>373</b>	<b>34</b>	<b>11.30</b>	<b>185</b>	<b>6</b>	<b>97</b>	<b>558</b>	<b>575</b>	<b>260</b>	<b>26</b>	<b>0</b>	<b>6</b>	<b>32</b>	<b>2,338*</b>
<b>STATE TOTALS</b>	<b>64</b>	<b>90</b>	<b>607</b>	<b>141</b>	<b>9.48</b>	<b>587</b>	<b>135</b>	<b>366</b>	<b>1,194</b>	<b>326</b>	<b>1,573</b>	<b>138</b>	<b>4</b>	<b>27</b>	<b>169</b>	<b>978*</b>

\*(Unclassified) Mixed young and adults used to calculate birds/100 Hr. only.



Table 2. Trend of chukar young per 100 adults, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<b>Northern Region</b>												
Box Elder	529	492	760	663	842	733	300	562	198	111	326	
Cache	258	--	488	750	550	1,900	--	--	300	--	--	
Davis	--	--	--	--	--	--	--	--	3	43	65	
Morgan	950	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	286	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>382</b>	<b>475</b>	<b>639</b>	<b>684</b>	<b>814</b>	<b>722</b>	<b>300</b>	<b>562</b>	<b>81</b>	<b>53</b>	<b>193</b>	<b>471</b>
<b>Central Region</b>												
Juab	594	420	725	350	500	352	356	1,100	--	557	315	
Salt Lake	367	--	0	--	0	--	380	--	283	--	400	
Sanpete	171	216	0	--	--	488	331	440	500	767	--	
Tooele	372	154	410	356	264	417	96	686	771	697	359	
Utah	352	552	335	96	--	800	150	0	205	243	--	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>386</b>	<b>208</b>	<b>364</b>	<b>300</b>	<b>308</b>	<b>411</b>	<b>230</b>	<b>386</b>	<b>518</b>	<b>572</b>	<b>348</b>	<b>368</b>
<b>Southern Region</b>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	275	--	--	--	--	450	--	--	350	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	340	--	
Millard	255	66	--	--	50	264	95	150	450	550	200	
Piute	550	500	--	--	500	--	--	0	500	--	938	
Sevier	--	800	--	--	--	--	--	--	--	600	800	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	67	--	--	--	--	--	--	900	--	--	--	
<b>REGIONAL TOTALS</b>	<b>245</b>	<b>131</b>	<b>--</b>	<b>--</b>	<b>114</b>	<b>294</b>	<b>95</b>	<b>233</b>	<b>420</b>	<b>425</b>	<b>410</b>	<b>245</b>
<b>Northeastern Region</b>												
Daggett	--	--	--	--	--	--	--	--	--	--	575	
Duchesne	120	--	--	--	--	800	375	0	--	--	163	
Uintah	678	--	--	733	--	766	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>479</b>	<b>--</b>	<b>--</b>	<b>733</b>	<b>--</b>	<b>755</b>	<b>375</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>78</b>	<b>585</b>
<b>Southeastern Region</b>												
Carbon	474	372	650	794	633	--	125	--	--	700	--	
Emery	--	--	725	842	367	200	--	500	--	--	--	
Grand	205	274	871	656	377	98	0	980	416	--	577	
San Juan	161	317	500	650	552	40	58	220	--	--	533	
<b>REGIONAL TOTALS</b>	<b>226</b>	<b>324</b>	<b>712</b>	<b>717</b>	<b>437</b>	<b>97</b>	<b>59</b>	<b>591</b>	<b>416</b>	<b>700</b>	<b>575</b>	<b>428</b>
<b>STATE TOTALS</b>	<b>311</b>	<b>235</b>	<b>519</b>	<b>487</b>	<b>443</b>	<b>196</b>	<b>170</b>	<b>444</b>	<b>245</b>	<b>358</b>	<b>326</b>	<b>341</b>

Table 3. Trend of chukar mean brood size from 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	6.17	13.23	13.00	11.00	11.00	10.50	6.00	14.60	9.57	--	--	8.33
Cache	3.43	--	13.00	7.00	--	19.00	--	--	3.00	--	--	--
Davis	--	--	--	--	--	--	--	--	2.00	--	--	--
Morgan	9.50	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	20.00	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>6.25</b>	<b>13.23</b>	<b>13.00</b>	<b>8.00</b>	<b>11.00</b>	<b>13.33</b>	<b>6.00</b>	<b>14.60</b>	<b>8.00</b>	<b>--</b>	<b>8.33</b>	<b>10.37</b>
<u>Central Region</u>												
Juab	9.33	9.53	9.67	11.00	8.67	7.75	9.00	11.00	--	7.70	5.45	--
Salt Lake	--	--	--	--	--	--	--	--	5.67	--	4.00	--
Sanpete	7.00	6.00	--	--	--	11.00	6.50	5.00	6.33	--	--	--
Tooele	11.29	10.83	15.00	11.89	9.00	7.20	6.00	6.50	14.07	9.91	8.92	--
Utah	8.14	7.50	8.40	8.00	--	8.00	3.00	0.00	6.00	4.00	--	--
Wasatch	--	--	--	--	--	--	--	--	--	6.00	--	--
<b>REGIONAL TOTALS</b>	<b>9.88</b>	<b>9.98</b>	<b>10.10</b>	<b>11.35</b>	<b>8.83</b>	<b>7.68</b>	<b>6.64</b>	<b>6.50</b>	<b>11.38</b>	<b>8.16</b>	<b>7.13</b>	<b>9.05</b>
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	5.00	--	--	--	--	9.50	--	--	--	--	--	--
Iron	0	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	11.50	10.00	--	--	3.00	6.71	3.50	0.00	6.00	10.00	--	--
Piute	5.50	5.67	--	--	5.00	--	--	0.00	10.00	--	10.50	--
Sevier	--	--	--	--	--	--	--	--	--	--	8.00	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	6.00	--	--	--	--	--	--	9.00	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>7.80</b>	<b>6.75</b>	<b>--</b>	<b>--</b>	<b>4.00</b>	<b>7.33</b>	<b>3.50</b>	<b>9.00</b>	<b>8.00</b>	<b>10.00</b>	<b>9.67</b>	<b>7.04</b>
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	9.00	--
Duchesne	6.00	--	--	--	--	8.00	3.75	0.00	--	--	--	--
Uintah	7.00	10.00	--	6.00	--	7.67	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>6.86</b>	<b>10.00</b>	<b>--</b>	<b>6.00</b>	<b>--</b>	<b>7.75</b>	<b>3.75</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>9.00</b>	<b>6.87</b>
<u>Southeastern Region</u>												
Carbon	7.29	9.29	9.00	9.50	9.00	--	--	--	--	--	--	--
Emery	--	--	12.00	9.80	12.00	6.17	--	5.00	--	--	--	--
Grand	8.33	7.20	1.00	6.25	4.00	6.00	--	0.00	12.50	--	11.90	--
San Juan	5.82	9.00	--	10.00	4.33	3.00	--	1.00	--	--	5.33	--
<b>REGIONAL TOTALS</b>	<b>6.88</b>	<b>8.50</b>	<b>8.50</b>	<b>9.05</b>	<b>6.00</b>	<b>5.58</b>	<b>--</b>	<b>3.00</b>	<b>12.50</b>	<b>--</b>	<b>11.30</b>	<b>7.50</b>
<b>STATE TOTALS</b>	<b>7.81</b>	<b>10.08</b>	<b>10.65</b>	<b>10.00</b>	<b>7.12</b>	<b>7.10</b>	<b>5.77</b>	<b>8.75</b>	<b>10.35</b>	<b>8.23</b>	<b>9.48</b>	<b>8.59</b>

Table 4. Trend of chukars observed per 100 hours, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	71	374	77	468	895	208	32	307	438	43	645	
Cache	358	--	--	--	130	167	--	--	57	--	--	
Davis	--	--	--	--	--	--	--	--	608	760	810	
Morgan	262	--	--	--	--	100	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>132</b>	<b>374</b>	<b>119</b>	<b>632</b>	<b>640</b>	<b>197</b>	<b>32</b>	<b>307</b>	<b>430</b>	<b>140</b>	<b>502</b>	<b>300</b>
<u>Central Region</u>												
Juab	1,724	613	174	338	229	413	152	109	1,500	206	692	
Salt Lake	108	--	60	--	25	0	400	--	209	--	500	
Sanpete	475	527	7	0	0	157	192	142	200	248	--	
Tooele	592	2,044	198	730	291	452	136	917	1,038	1,468	985	
Utah	210	833	336	140	0	129	33	133	1,220	533	--	
Wasatch	--	--	--	--	--	--	--	--	--	350	--	
<b>REGIONAL TOTALS</b>	<b>510</b>	<b>997</b>	<b>167</b>	<b>437</b>	<b>178</b>	<b>302</b>	<b>157</b>	<b>243</b>	<b>623</b>	<b>440</b>	<b>722</b>	<b>405</b>
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	123	--	0	0	0	440	--	--	1,200	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	0	--	--	--	--	--	--	--	
Millard	529	573	--	291	36	1,020	216	182	220	236	1,467	
Piute	650	2,400	--	--	150	0	--	0	120	--	1,660	
Sevier	--	900	--	100	--	--	--	--	--	1,400	900	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	600	--	--	--	0	--	10	83	--	--	--	
<b>REGIONAL TOTALS</b>	<b>259</b>	<b>543</b>	<b>0</b>	<b>79</b>	<b>37</b>	<b>616</b>	<b>114</b>	<b>115</b>	<b>242</b>	<b>525</b>	<b>1,436</b>	<b>281</b>
<u>Northeastern Region</u>												
Daggett	0	--	0	0	0	--	0	--	--	--	--	
Duchesne	41	--	0	0	0	22	73	0	0	--	300	
Uintah	350	48	0	227	0	96	0	--	0	--	614	
<b>REGIONAL TOTALS</b>	<b>162</b>	<b>16</b>	<b>0</b>	<b>83</b>	<b>0</b>	<b>52</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>--</b>	<b>533</b>	<b>68</b>
<u>Southeastern Region</u>												
Carbon	1,282	621	375	947	1,100	--	450	--	0	1,600	--	
Emery	--	--	194	1,130	233	370	0	200	--	--	--	
Grand	643	710	358	900	2,277	2,950	40	379	1,020	--	2,891	
San Juan	321	431	800	789	721	492	136	67	0	--	1,120	
<b>REGIONAL TOTALS</b>	<b>364</b>	<b>541</b>	<b>298</b>	<b>915</b>	<b>996</b>	<b>883</b>	<b>98</b>	<b>185</b>	<b>230</b>	<b>160</b>	<b>2,338</b>	<b>467</b>
<b>STATE TOTALS</b>	<b>325</b>	<b>556</b>	<b>150</b>	<b>469</b>	<b>303</b>	<b>370</b>	<b>96</b>	<b>213</b>	<b>396</b>	<b>336</b>	<b>978</b>	<b>321</b>

Table 5. Summary of chukar hunter success and distribution of harvest and hunting pressure by region and county, 1981.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	153	7,770	12,079	1.55	21.19	26.85
Cache	23	1,359	573	0.42	3.71	1.27
Davis	5	127	42	0.33	0.35	0.09
Morgan	14	1,189	892	0.75	3.24	1.98
Rich	2	42	21	0.50	0.12	0.05
Summit	10	318	233	0.73	0.87	0.52
Weber	9	340	425	1.25	0.93	0.94
REGIONAL TOTALS	216	11,145	14,265	1.28	30.40	31.71
<u>Central Region</u>						
Juab	29	1,571	1,040	0.66	4.28	2.31
Salt Lake	41	2,356	3,121	1.32	6.43	6.94
Sanpete	15	764	1,316	1.72	2.08	2.93
Tooele	109	6,538	6,347	0.97	17.83	14.11
Utah	83	4,288	3,460	0.81	11.70	7.69
Wasatch	2	64	21	0.33	0.17	0.05
REGIONAL TOTALS	279	15,582	15,305	0.98	42.50	34.03
<u>Southern Region</u>						
Beaver	5	191	446	2.33	0.52	0.99
Garfield	5	191	212	1.11	0.52	0.47
Iron	1	21	21	1.00	0.06	0.05
Kane	0	0	0	0.00	0.00	0.00
Millard	24	849	1,635	1.92	2.32	3.63
Piute	11	1,550	2,760	1.78	4.23	6.13
Sevier	27	1,550	2,293	1.48	4.23	5.10
Washington	0	0	0	0.00	0.00	0.00
Wayne	3	149	340	2.29	0.41	0.76
REGIONAL TOTALS	76	4,500	7,706	1.71	12.28	17.13
<u>Northeastern Region</u>						
Daggett	0	0	0	0.00	0.00	0.00
**Duchesne	4	212	276	1.30	0.58	0.61
**Uintah	5	212	255	1.20	0.58	0.57
REGIONAL TOTALS	9	425	531	1.25	1.16	1.18
<u>Southeastern Region</u>						
Carbon	20	955	1,189	1.24	2.61	2.64
Emery	26	1,826	1,932	1.06	4.98	4.29
Grand	34	1,974	3,736	1.89	5.39	8.31
San Juan	4	127	85	0.67	0.35	0.19
REGIONAL TOTALS	84	4,882	6,942	1.42	13.32	15.43
Unknown Counties	5	127	234	1.83	0.35	0.52
Mixed Counties	0	0	0	0.00	0.00	0.00
STATE TOTALS	669	36,662	44,983	1.23	100	100

\*Total hunter trips from questionnaire returns.

\*\*Closed to hunting in 1981.

Table 6. Summary of chukars bagged per hunter-day by region and county, 1973-81.

Region and County	Year								
	1973	1974	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>									
Box Elder	1.41	1.47	1.20	1.31	1.23	1.80	1.34	1.41	1.55
Cache	0.68	0.92	0.64	0.70	1.11	0.89	0.60	0.74	0.42
Davis	1.12	1.61	0.31	0.89	1.29	2.20	2.19	0.75	0.33
Morgan	1.64	0.48	0.69	0.31	0.88	1.08	1.38	0.75	0.75
Rich	0.80	1.33	0.20	0.81	0.13	1.22	0.38	0.60	0.50
Summit	1.00	0.43	1.47	1.43	1.00	0.75	1.02	0.78	0.73
Weber	0.35	0.54	0.46	0.60	0.75	0.77	0.67	0.48	1.25
REGIONAL TOTALS	1.17	1.19	0.97	1.07	1.15	1.57	1.25	1.25	1.28
<u>Central Region</u>									
Juab	0.81	0.79	0.55	0.46	0.73	0.63	1.13	0.86	0.66
Salt Lake	1.01	0.55	0.76	0.54	1.41	0.89	1.20	0.89	1.32
Sanpete	1.12	0.96	0.72	0.35	0.90	0.70	1.15	0.90	1.72
Tooele	0.88	0.79	0.67	0.86	0.86	1.06	1.37	0.89	0.97
Utah	0.85	0.71	0.42	0.90	0.56	0.66	0.83	1.01	0.81
Wasatch	1.46	0.88	0.18	0.56	0.56	1.29	0.44	0.58	0.33
REGIONAL TOTALS	0.90	0.74	0.58	0.77	0.80	0.91	1.15	0.92	0.98
<u>Southern Region</u>									
Beaver	--	0.00	0.00	0.59	0.20	0.00	0.00	0.86	2.33
Garfield	0.00	1.00	5.00	0.50	0.00	2.00	1.71	2.55	1.11
Iron	0.33	0.00	0.00	0.76	--	0.00	0.00	0.00	1.00
Kane	--	0.00	0.00	0.00	--	0.00	3.00	4.00	0.00
Millard	0.96	0.52	0.48	0.87	0.66	0.98	1.29	1.04	1.92
Piute	0.58	0.29	0.69	0.24	0.67	1.35	0.78	0.56	1.78
Sevier	0.41	0.54	0.40	0.57	0.53	0.76	0.67	0.39	1.48
Washington	--	0.00	0.33	0.80	0.33	0.00	1.67	0.00	0.00
Wayne	0.00	0.73	2.43	2.74	3.94	1.10	3.00	2.85	2.29
REGIONAL TOTALS	0.62	0.51	0.64	0.79	0.80	0.95	0.89	0.85	1.71
<u>Northeastern Region</u>									
Daggett	0.00	0.00	0.00	2.00	--	0.00	2.25	0.00	0.00
Duchesne	0.71	0.50	0.34	0.77	0.19	1.78	1.20	1.28	1.30
Uintah	0.22	0.12	1.32	0.40	0.33	1.88	1.38	0.27	1.20
REGIONAL TOTALS	0.40	0.30	0.67	0.74	0.25	1.56	1.38	1.00	1.25
<u>Southeastern Region</u>									
Carbon	0.35	0.61	0.72	0.69	0.19	0.58	1.88	1.01	1.24
Emery	0.67	0.65	1.44	1.37	0.39	0.18	1.27	1.37	1.06
Grand	0.79	2.84	1.85	1.42	0.26	0.33	3.39	1.80	1.89
San Juan	1.46	1.33	0.50	0.43	0.00	1.56	4.00	1.67	0.67
REGIONAL TOTALS	0.64	1.22	1.31	1.05	0.27	0.40	2.14	1.44	1.42
Unknown Counties	0.35	0.60	0.59	1.18	0.77	1.48	1.00	0.17	1.83
Mixed Counties	--	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	0.95	0.91	0.81	0.93	0.88	1.21	1.23	1.08	1.23

Table 7. Percentage distribution of chukar harvest by region and county, 1973-81.

Region and County	Year								
	1973	1974	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>									
Box Elder	27.24	40.28	30.32	32.64	37.25	49.32	27.64	38.93	26.85
Cache	5.44	5.70	3.56	5.04	6.97	4.51	1.29	1.84	1.27
Davis	3.00	1.57	0.39	2.31	1.77	2.95	2.58	0.49	0.09
Morgan	7.17	2.00	3.71	0.79	2.21	2.74	2.75	2.24	1.98
Rich	0.16	0.34	0.08	0.60	0.09	0.33	0.34	0.10	0.05
Summit	1.69	0.55	2.31	0.46	0.66	0.27	1.15	0.23	0.52
Weber	1.02	2.08	2.03	1.16	1.19	2.19	0.87	0.49	0.94
REGIONAL TOTALS	45.72	52.53	42.40	43.00	50.13	62.31	36.61	44.33	31.71
<u>Central Region</u>									
Juab	3.23	2.85	2.23	1.85	2.12	0.88	2.94	3.33	2.31
Salt Lake	6.23	3.66	3.79	2.36	5.78	3.65	4.12	2.90	6.94
Sanpete	1.14	2.21	2.62	0.69	2.07	1.43	4.63	2.14	2.93
Tooele	15.33	14.16	13.09	12.71	17.08	16.74	20.44	14.56	14.11
Utah	16.24	11.23	6.57	13.96	8.52	5.18	8.05	12.71	7.69
Wasatch	2.64	0.64	0.23	0.42	0.44	1.10	0.20	0.46	0.05
REGIONAL TOTALS	44.82	34.75	28.53	31.99	36.01	28.98	40.37	36.10	34.03
<u>Southern Region</u>									
Beaver	--	0.00	0.00	0.46	0.04	0.00	0.00	0.40	0.99
Garfield	0.00	0.30	0.39	0.23	0.00	0.55	0.34	1.84	0.47
Iron	0.08	0.00	0.00	0.14	--	0.00	0.00	0.00	0.05
Kane	--	0.00	0.00	0.00	--	0.00	0.50	0.13	0.00
Millard	2.84	1.53	1.25	2.54	2.52	1.49	2.47	1.65	3.63
Piute	0.59	0.43	0.70	0.37	0.71	0.70	1.57	0.92	6.13
Sevier	1.69	1.62	2.34	1.57	2.56	1.83	3.59	1.68	5.10
Washington	--	0.00	0.04	0.18	0.04	0.00	0.14	0.00	0.00
Wayne	0.00	0.34	2.19	2.40	2.78	0.33	0.17	1.22	0.76
REGIONAL TOTALS	5.20	4.21	6.92	7.91	8.65	4.90	8.77	7.84	17.13
<u>Northeastern Region</u>									
Daggett	0.00	0.00	0.00	0.18	--	0.00	0.25	0.00	0.00
Duchesne	0.39	0.68	0.59	0.79	0.40	0.49	0.67	1.35	0.61
Uintah	0.16	0.17	1.29	0.18	0.62	0.27	0.50	0.10	0.57
REGIONAL TOTALS	0.55	0.85	1.88	1.16	1.02	0.76	1.43	1.45	1.18
<u>Southeastern Region</u>									
Carbon	0.79	1.40	3.17	2.22	0.26	0.33	5.21	2.34	2.64
Emery	0.39	0.85	7.93	1.90	0.88	0.21	1.99	2.34	4.29
Grand	1.02	3.74	7.89	5.50	0.93	0.76	5.33	5.20	8.31
San Juan	0.75	0.34	0.27	0.46	0.00	0.43	0.22	0.33	0.19
REGIONAL TOTALS	2.96	6.34	19.27	10.08	2.07	1.74	12.76	10.21	15.43
Unknown Counties	0.75	1.19	1.02	5.87	2.12	1.31	0.06	0.07	0.52
Mixed Counties	--	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100	100	100

Table 8. Percentage distribution of chukar hunting pressure by region and county, 1973-81.

Region and County	Year								
	1973	1974	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>									
Box Elder	18.38	25.08	20.53	23.07	26.68	33.14	25.32	29.87	21.19
Cache	7.56	5.68	4.55	6.65	5.51	6.13	2.65	2.70	3.71
Davis	2.55	0.89	1.02	2.40	1.20	1.62	1.45	0.71	0.35
Morgan	4.16	3.77	4.39	2.36	2.21	3.06	2.45	3.23	3.24
Rich	0.19	0.23	0.32	0.69	0.58	0.33	1.10	0.18	0.12
Summit	1.61	1.17	1.27	0.30	0.58	0.44	1.38	0.32	0.87
Weber	2.77	3.54	3.56	1.80	1.40	3.43	1.58	1.10	0.93
REGIONAL TOTALS	37.21	40.36	35.63	37.26	38.15	48.15	35.93	39.10	30.40
<u>Central Region</u>									
Juab	3.78	3.30	3.31	3.73	2.56	1.70	3.20	4.19	4.28
Salt Lake	5.84	6.03	4.07	4.03	3.61	4.98	4.24	3.52	6.43
Sanpete	0.97	2.10	2.96	1.84	2.02	2.47	4.96	2.56	2.08
Tooele	16.51	16.41	15.80	13.77	17.49	19.08	18.39	17.54	17.83
Utah	18.23	14.42	12.71	14.45	13.38	9.45	11.95	13.64	11.70
Wasatch	1.72	0.66	1.05	0.69	0.70	1.03	0.55	0.85	0.17
REGIONAL TOTALS	47.06	42.92	39.89	38.51	39.74	38.71	43.30	42.29	42.50
<u>Southern Region</u>									
Beaver	--	0.00	0.00	0.73	0.19	0.07	0.00	0.50	0.52
Garfield	0.04	0.27	0.06	0.43	0.04	0.33	0.24	0.78	0.52
Iron	0.22	0.00	0.25	0.17	--	0.07	0.07	0.04	0.06
Kane	--	0.00	0.00	0.21	--	0.00	0.21	0.04	0.00
Millard	2.81	2.68	2.10	2.70	3.33	1.85	2.34	1.70	2.32
Piute	0.97	1.36	0.83	1.42	0.93	0.63	2.48	1.78	4.23
Sevier	3.89	2.76	4.74	2.57	4.23	2.92	6.58	4.65	4.23
Washington	--	0.00	0.10	0.21	0.12	0.00	0.10	0.00	0.00
Wayne	0.04	0.43	0.73	0.81	0.62	0.37	0.07	0.46	0.41
REGIONAL TOTALS	7.97	7.50	8.80	9.26	9.46	6.24	12.09	9.94	12.28
<u>Northeastern Region</u>									
Daggett	0.11	0.08	0.10	0.09	--	0.07	0.14	0.04	0.00
Duchesne	0.52	1.24	1.40	0.94	1.86	0.33	0.69	1.14	0.58
Uintah	0.67	1.28	0.79	0.43	1.67	0.18	0.45	0.39	0.58
REGIONAL TOTALS	1.31	2.60	2.29	1.46	3.53	0.59	1.27	1.56	1.16
<u>Southeastern Region</u>									
Carbon	2.13	2.10	3.59	3.00	1.20	0.70	3.41	2.49	2.61
Emery	0.56	1.21	4.48	1.29	1.98	1.44	1.93	1.85	4.98
Grand	1.24	1.21	3.46	3.60	3.10	2.77	1.93	3.13	5.39
San Juan	0.49	0.23	0.45	0.99	0.39	0.33	0.07	0.21	0.35
REGIONAL TOTALS	4.42	4.74	11.98	8.88	6.67	5.24	7.34	7.67	13.32
Unknown Counties	2.02	1.83	1.40	4.63	2.40	1.07	0.07	0.43	0.35
Mixed Counties	--	0.04	0.00	0.00	0.04	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100	100	100	100

Table 9. Statewide summary of chukar partridge harvest statistics, 1958-81.

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
TOTALS (1958-81)	371,599	1,069,971	1,086,172	0.99	2.88
AVERAGES (1958-80)	15,595	44,565	47,225	0.94	2.86



Table 10. Chukar field bag check summary, 1981.

Region and County	ALL HUNTS				COMPLETE HUNTS				Total Birds/100 Hr Hunter	
	Total Parties	Total Hunters	Total Hours	Total Birds	Total Complete Hunts	Total Hunters	Total Hours	Total Birds		
<u>Northern Region</u>										
Box Elder	51	126	507	240	47	51	507	240	47	1.90
Cache	5	9	35	4	11	4	23	2	9	0.33
Davis	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>6</b>	<b>135</b>	<b>542</b>	<b>244</b>	<b>45</b>	<b>55</b>	<b>530</b>	<b>242</b>	<b>46</b>	<b>1.83</b>
<u>Central Region</u>										
Juab	11	38	87	34	39	5	34	21	62	2.10
Salt Lake	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--
Tooele	17	44	132	62	47	6	72	32	44	1.60
Utah	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>28</b>	<b>82</b>	<b>219</b>	<b>96</b>	<b>44</b>	<b>11</b>	<b>106</b>	<b>53</b>	<b>50</b>	<b>1.77</b>
<u>Southern Region</u>										
Beaver	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--
Sevier	3	5	9	2	23	2	6	2	33	0.67
Washington	--	--	--	--	--	--	--	--	--	--
Wayne	10	23	86	22	26	10	86	22	25	0.96
<b>REGIONAL TOTALS</b>	<b>13</b>	<b>28</b>	<b>95</b>	<b>24</b>	<b>25</b>	<b>12</b>	<b>92</b>	<b>24</b>	<b>26</b>	<b>0.92</b>
<u>Northeastern Region</u>										
Daggett	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<u>Southeastern Region</u>										
Carbon	--	--	--	--	--	--	--	--	--	--
Emery	1	3	6	2	33	1	6	2	33	0.67
Grand	19	40	104	51	49	5	20	12	60	2.00
San Juan	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>20</b>	<b>43</b>	<b>110</b>	<b>53</b>	<b>48</b>	<b>6</b>	<b>26</b>	<b>14</b>	<b>54</b>	<b>1.56</b>
<b>STATE TOTALS</b>	<b>117</b>	<b>288</b>	<b>966</b>	<b>417</b>	<b>43</b>	<b>84</b>	<b>754</b>	<b>333</b>	<b>44</b>	<b>1.69</b>

Table 11. Chukar hunter success trend as determined by field bag checks, 1976-81.

Region and County	1976		1977		1978		1979		1980		1981	
	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	27	1.10	16	0.75	40	1.77	19	0.74	15	0.64	47	1.90
Cache	18	0.56	2	0.12	1	--	7	6.29	14	0.50	9	0.33
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	25	0.50	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>25</b>	<b>0.98</b>	<b>10</b>	<b>0.47</b>	<b>34</b>	<b>1.48</b>	<b>18</b>	<b>0.71</b>	<b>15</b>	<b>0.63</b>	<b>46</b>	<b>1.83</b>
<u>Central Region</u>												
Juab	11	1.00	8	0.36	7	0.75	0	0.00	--	--	62	2.10
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	21	1.39	10	0.18	33	2.08	89	3.88	--	--	44	1.60
Utah	11	0.50	33	0.00	75	2.50	15	0.52	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>16</b>	<b>1.13</b>	<b>10</b>	<b>0.27</b>	<b>40</b>	<b>2.15</b>	<b>28</b>	<b>1.02</b>	<b>--</b>	<b>--</b>	<b>50</b>	<b>1.77</b>
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	233	1.75	--	--	--	--	76	1.46	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	37	1.54	1	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	33	0.67
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	25	0.96
<b>REGIONAL TOTALS</b>	<b>40</b>	<b>1.60</b>	<b>1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>76</b>	<b>1.46</b>	<b>--</b>	<b>--</b>	<b>26</b>	<b>0.92</b>
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	33	0.50	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>--</b>	<b>--</b>	<b>33</b>	<b>0.50</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<u>Southeastern Region</u>												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	9	1.00	--	--	--	--	--	--	44	1.71	33	0.67
Grand	20	2.08	10	0.20	--	--	108	3.83	73	2.54	60	2.00
San Juan	56	2.00	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>22</b>	<b>1.95</b>	<b>10</b>	<b>0.20</b>	<b>--</b>	<b>--</b>	<b>108</b>	<b>3.83</b>	<b>57</b>	<b>2.11</b>	<b>54</b>	<b>1.56</b>
<b>STATE TOTALS</b>	<b>24</b>	<b>1.11</b>	<b>10</b>	<b>0.44</b>	<b>36</b>	<b>1.60</b>	<b>29</b>	<b>1.07</b>	<b>21</b>	<b>0.89</b>	<b>44</b>	<b>1.69</b>

# SAGE GROUSE

## SUMMARY

Harvest data for 1980 indicated a good breeding population of sage grouse for 1981. Strutting ground surveys however, indicated a drop in male attendance from 1980.

Brood surveys showed decreased production throughout the state during 1981. However, birds observed per 100 hours increased 19 percent compared to 1980 and still remained above average.

The lower production in 1981 was apparent in harvest statistics collected from questionnaires and from field bag checks. Total statewide harvest decreased by 30 percent but still remained 3 percent above the 18-year average. Total hunters and hunter-days afield both decreased but remained about average. Sage grouse bagged per hunter increased slightly while sage grouse bagged per hunter-day remained the same as 1980.



### Strutting Ground Counts

The status of the sage grouse breeding population for 1981, as indicated by strutting ground counts, is shown in Table 1 of this section. Results of this survey for 1981 compared to 1980 and the 1967-80 average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Number of grounds counted	154	+33	+45
Total grouse counted	2,469	+15	+12
Average male grouse per ground	16	-16	-20
Percent change from previous year (comparable grounds)	-9	--	--

Access for spring 1981 strutting ground counts was good in all regions of the state. Although the Southern, Southeastern and Northeastern Regions showed an increase in sage grouse counted, numbers of grouse were down 27 percent in the Northern and 51 percent in the Central Region. The statewide index for comparable grounds was down 9 percent. Harvest data for 1980 indicated above average populations going into the winter of 1980-81, but the numbers of juvenile birds indicated poor production during 1980. Declines in breeding populations appeared to be the trend in most areas of the state in 1981.

### Brood Counts

Results of the survey for 1981 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 1981 are compared to 1980 and the previous 10-year average as follows:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total sage grouse counted	2,452	-3	-25
Young per 100 adults	142	-13	-5
Mean brood size	4.05	-10	-10
Sage grouse observed per 100 hours	444	+19	+15
Total hours effort	552	-18	-36

The effort devoted to sage grouse brood counts was 36 percent below average, and the total number of grouse counted was 25 percent below average.

Sage grouse density increased slightly from 1980, but production showed a 13 percent decline. More adults and fewer young were observed, with average brood size 10 percent below the 10-year average.

## Harvest

### Hunter Questionnaire

Results of the 1981 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 1980 hunting season compared to 1980 and the 1963-80 average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Sage grouse hunters	10,083	-34	-10
Sage grouse harvested	15,857	-30	+3
Hunter-days afield	18,617	-31	+3
Sage grouse per hunter-day	0.85	0	0
Sage grouse per hunter	1.57	+5	+15

The lower production in 1981 was quite apparent in the harvest. Total statewide harvest decreased 30 percent. Total sage grouse hunters and hunter-days afield also decreased, probably in response to reduced success. Hunter success decreased 20 percent in the Northern Region where 36 percent of the harvest and 41 percent of the hunting pressure occurred.

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

### Field Bag Checks

A summary of field bag check data for 1981 is shown in Table 11. Hunter success trends determined via this method are shown in Table 12. Results of the 1981 survey compared to 1980 and the 1971-80 average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total hunters checked	2,169	+21	-7
Total hours hunted	9,001	+27	0
Sage grouse per hunter (complete hunts)	0.91	-1	+14
Sage grouse bagged per 100 hours	21	0	+11
Average hours per hunter-day (complete hunts)	4.4	0	+5
Hours hunted per grouse bagged	4.9	+4	-11

### Sex and Age Composition of the Harvest

A summary of the sex and age composition of harvested sage grouse in 1981 is found in Table 13 and the trend from 1976-81 in Table 14.

Following are data derived from wing surveys in 1981 compared to 1980 and the 1975-80 averages:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Sample size	1,442	-9	-6
Percent males	39	-5	-13
Percent females	61	+3	+11
Young per 100 adults	106	+5	-24
Young per 100 hens (adult)	157	+3	-27

Analysis of wings collected at checking stations during the 1981 season also indicates that production was down compared to 1980. This was particularly true for northern and central portions of the state and specifically Box Elder County.

Sage grouse bagged per hunter and per hunter-day.

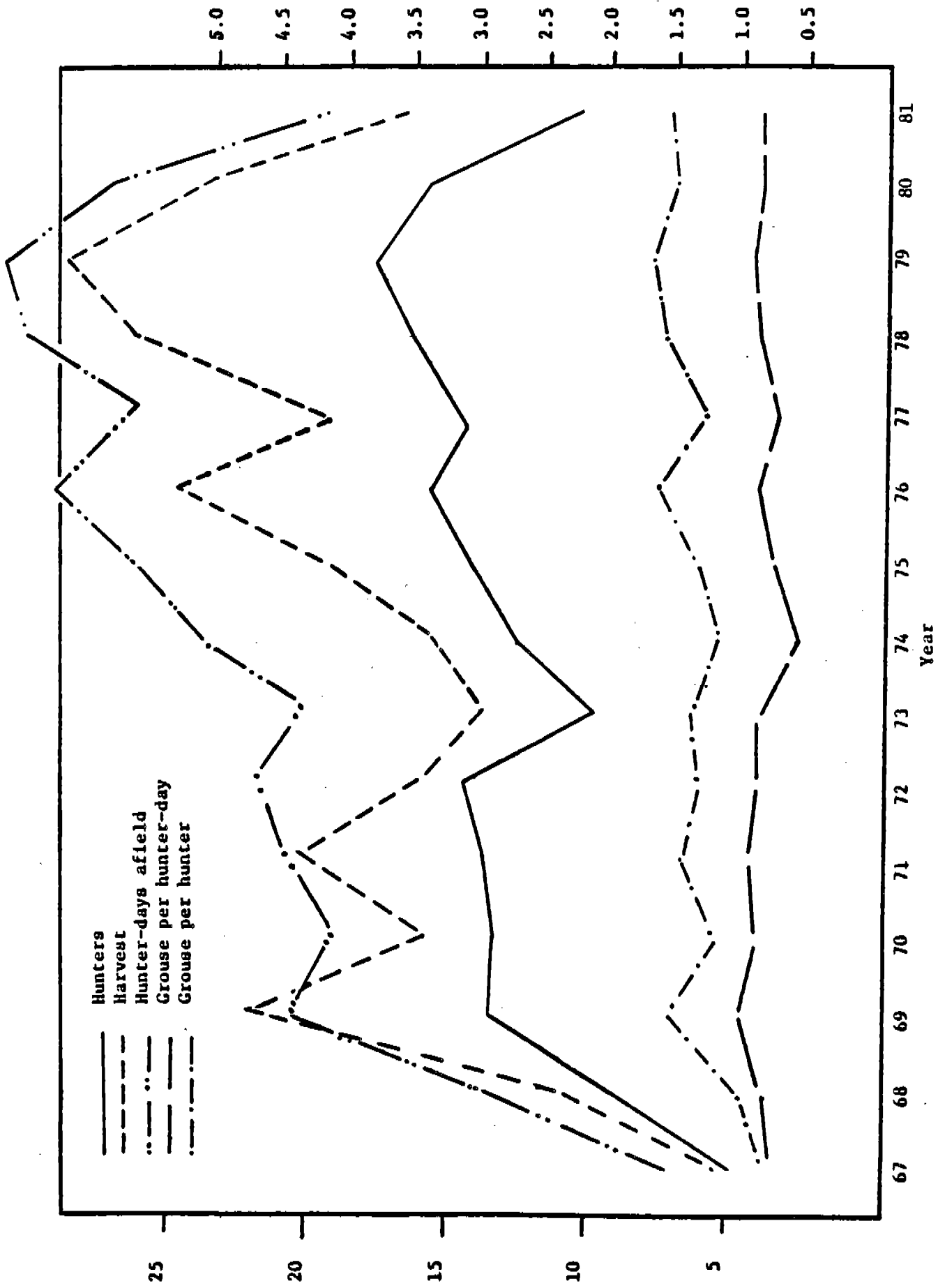


Figure 1. Statewide trend of sage grouse harvest statistics.

Hunters, harvest and hunter-days afield (thousands).

Table 1. Summary of sage grouse strutting counts by region and county, 1971-81.

Region and County	Year										
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
<b>Northern Region</b>											
<b>BOX ELDER</b>											
No. strutting grounds counted	21	20	21	25	19	15	22	18	24	28	35
Total grouse counted	479	422	325	306	346	239	621	452	763	899	711
County average (all strutting grounds)	23	21	16	12	18	16	28	25	32	32	20
% change from previous year - comparable grounds	14	-10	-30	-19	+29	0	+53	+3	+69	+9	-35
<b>CACHE</b>											
No. strutting grounds counted	3	3	2	3	3	3	3	1	3	1	3
Total grouse counted	58	57	50	44	100	35	45	15	32	18	18
County average (all strutting grounds)	23	19	25	15	33	12	15	15	11	18	6
% change from previous year - comparable grounds	+7	-16	+6	-14	+133	-68	+29	-40	0	+20	-33
<b>MORGAN</b>											
No. strutting grounds counted	2	3	3	3	3	3	3	3	3	3	3
Total grouse counted	35	53	61	63	41	52	43	111	75	131	57
County average (all strutting grounds)	18	18	20	21	14	17	14	37	25	44	19
% change from previous year - comparable grounds	-22	+29	+15	+3	-35	+27	-17	+158	-32	+76	-57
<b>RICH</b>											
No. strutting grounds counted	7	9	12	14	10	8	13	15	11	11	13
Total grouse counted	240	254	299	389	268	326	321	417	382	236	259
County average (all strutting grounds)	34	28	25	28	27	41	25	28	35	21	20
% change from previous year - comparable grounds	-12	-18	-13	+31	-32	+57	-13	+17	+11	-40	+5



Table 1 (continued)

Region and County	Year										
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
<b>SUMMIT</b>											
No. strutting grounds counted	5	5	5	5	4	6	6	6	8	1	7
Total grouse counted	223	152	13	113	88	107	169	91	116	15	60
County average (all strutting grounds)	45	30	28	23	22	18	28	15	15	15	9
% change from previous year - comparable grounds	+21	-32	-18	-18	-30	-10	+52	-29	+5	+15	+13
<b>REGIONAL TOTALS</b>											
No. strutting grounds counted	38	40	43	50	39	35	47	43	49	44	61
Total grouse counted	1,045	938	873	915	843	759	1,199	1,086	1,368	1,299	1,105
County average (all strutting grounds)	28	23	20	18	22	23	26	25	28	30	18
% change from previous year - comparable grounds	-16	-16	-20	-1	-1	+8	+19	+10	+29	-2	-27
<b>Southern Region</b>											
<b>GARFIELD</b>											
No. strutting grounds counted	14	14	14	14	14	14	10	11	9	8	11
Total grouse counted	351	330	166	327	233	201	192	224	211	97	298
County average (all strutting grounds)	25	24	12	23	17	14	19	20	23	12	27
% change from previous year - comparable grounds	0	-7	-50	+114	-35	-14	+2	+24	0	-48	+114
<b>WAYNE</b>											
No. strutting grounds counted	11	12	10	11	11	13	12	12	9	8	14
Total grouse counted	248	311	231	237	160	260	256	166	221	32	284
County average (all strutting grounds)	23	26	23	22	15	20	21	14	25	4	20
% change from previous year - comparable grounds	-46	+18	-21	+3	-33	+3	+19	-31	-59	--	--

Table 1 (continued)

Region and County	Year										
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
<b>BEAVER</b>											
No. strutting grounds counted	5	5	5	5	6	8	7	7	6	5	7
Total grouse counted	141	153	82	110	122	108	90	66	134	113	140
County average (all strutting grounds)	28	31	16	22	20	14	13	9	22	23	20
% change from previous year - comparable grounds	-49	+9	-47	+34	+1	-32	+8	-27	+137	+1	+6
<b>PIUTE</b>											
No. strutting grounds counted	1	1	1	--	--	--	--	--	--	--	--
Total grouse counted	7	5	0	--	--	--	--	--	--	--	--
County average (all strutting grounds)	7	5	--	--	--	--	--	--	--	--	--
% change from previous year - comparable grounds	0	-29	--	--	--	--	--	--	--	--	--
<b>IRON</b>											
No. strutting grounds counted	6	7	0	9	9	9	5	10	5	6	7
Total grouse counted	47	66	0	86	51	26	54	87	83	84	101
County average (all strutting grounds)	8	9	--	10	6	3	11	9	17	14	14
% change from previous year - comparable grounds	-50	+42	--	--	-41	-50	+108	+11	+48	+1	+20
<b>SEVIER</b>											
No. strutting grounds counted	1	1	1	1	--	2	3	4	4	--*	2
Total grouse counted	0	0	0	9	--	2	26	23	9	--	0
County average (all strutting grounds)	0	0	--	9	--	1	9	6	2	--	0
% change from previous year - comparable grounds	--	--	--	--	--	--	+200	-11	60	--	--

\*Poor counting conditions due to snow.

Table 1 (continued)

Region and County	Year										
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
<b>MILLARD</b>											
No. strutting grounds counted	--	--	--	--	--	1	1	1	--	--*	1
Total grouse counted	--	--	--	--	--	11	3	14	--	--	22
County average (all strutting grounds)	--	--	--	--	--	11	3	14	--	--	22
% change from previous year - comparable grounds	--	--	--	--	--	---	-73	+367	--	--	--
<b>REGIONAL TOTALS</b>											
No. strutting grounds counted	38	40	31	40	40	47	37	45	33	27	42
Total grouse counted	794	865	479	769	566	608	618	580	691	326	845
County average (all strutting grounds)	21	22	15	19	14	13	17	13	21	12	20
% change from previous year - comparable grounds	-30	+7	-40	+49	-30	-13	+14	-13	-22	-32	+46
<b>Central Region</b>											
<b>SANPETE</b>											
No. strutting grounds counted	2	1	2	2	2	2	2	2	2	2	2
Total grouse counted	13	2	0	0	5	10	4	7	6	9	9
County average (all strutting grounds)	7	2	--	--	3	5	2	4	3	5	5
% change from previous year - comparable grounds	--	-75	--	--	--	+100	-60	+75	-14	+17	0
<b>TOOELE</b>											
No. strutting grounds counted	4	5	5	5	5	5	5	5	5	5	5
Total grouse counted	92	128	60	95	59	80	77	37	116	131	46
County average (all strutting grounds)	23	26	12	19	12	16	15	7	23	26	9
% change from previous year - comparable grounds	-16	0	-35	+43	-30	+15	-4	-52	-38	+13	-64

Table 1 (continued)

Region and County	Year										
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
<b>WASATCH</b>											
No. strutting grounds counted	2	2	2	2	2	2	2	2	2	2	2
Total grouse counted	70	102	52	99	201	216	206	184	119	45	45
County average (all strutting grounds)	35	51	26	50	101	108	103	92	60	23	23
% change from previous year - comparable grounds	-30	+46	-49	+90	+103	+7	-5	-11	-35	-62	0
<b>REGIONAL TOTALS</b>											
No. strutting grounds counted	8	8	9	9	9	9	9	9	9	9	9
Total grouse counted	175	232	112	194	265	306	287	228	197	185	100
County average (all strutting grounds)	22	29	12	22	29	34	32	25	22	21	11
% change from previous year - comparable grounds	-24	+15	-42	+65	+45	+12	-6	-21	-35	-24	-51
<b>Northeastern Region</b>											
<b>DAGGETT</b>											
No. strutting grounds counted	4	4	5	4	3	3	3	3	3	5	6
Total grouse counted	37	26	41	53	30	40	55	78	47	51	68
County average (all strutting grounds)	9	7	8	13	10	13	18	26	16	10	11
% change from previous year - comparable grounds	-39	28	+31	-5	-19	+33	+38	+42	-40	-19	+20
<b>DUCHESNE</b>											
No. strutting grounds counted	3	5	5	11	11	15	14	14	10	16	16
Total grouse counted	27	74	43	172	172	245	161	227	93	120	112
County average (all strutting grounds)	9	15	9	16	16	16	12	16	9	8	7
% change from previous year - comparable grounds	-26	0	-41	+44	-5	-14	-20	+37	-35	+5	0

Table 1 (continued)

Region and County	Year										
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
<b>ULINTAH</b>											
No. strutting grounds counted	5	6	11	11	9	10	11	13	11	12	10
Total grouse counted	63	118	156	163	240	257	245	454	338	126	174
County average	13	20	14	15	27	26	22	35	31	11	17
% change from previous year - comparable grounds	-42	+77	-25	+8	+29	0	-16	+63	-18	-67	+56
<b>REGIONAL TOTALS</b>											
No. strutting grounds counted	12	15	21	26	23	28	28	30	24	33	32
Total grouse counted	127	218	240	388	442	542	461	759	478	297	354
County average	11	15	11	15	19	19	17	25	20	9	11
% change from previous year - comparable grounds	-39	+32	-25	+13	+12	-3	-13	+51	-25	-48	+27
<b>Southeastern Region</b>											
<b>CARBON</b>											
No. strutting grounds counted	3	1	0	8	2	5	9	5	--	--	6
Total grouse counted	58	40	0	77	65	134	140	41	--	--	2
County average	19	40	--	10	33	27	16	8	--	--	3
% change from previous year - comparable grounds	0	+2	--	--	+48	+83	-10	-64	--	--	--
<b>EMERY</b>											
No. strutting grounds counted	3	3	0	3	--	1	2	1	--	--	--
Total grouse counted	3	11	0	2	--	13	33	12	--	--	--
County average	1	4	--	1	--	13	17	12	--	--	--
% change from previous year - comparable grounds	-63	+270	--	--	--	--	+23	-25	--	--	--

Table 1 (continued)

Region and County	Year										
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
<b>SAN JUAN</b>											
No. strutting grounds counted	6	6	4	6	6	6	4	5	4	5	4
Total grouse counted	152	168	105	137	115	98	117	96	67	41	63
County average	25	28	26	23	19	16	29	18	17	8	16
(all strutting grounds)											
%change from previous year - comparable grounds	+32	+11	+42	-19	-9	-14	+22	-17	+1	-33	+65
<b>REGIONAL TOTALS</b>											
No. strutting grounds counted	12	10	4	17	8	12	15	11	4	5	10
Total grouse counted	213	219	105	216	180	245	290	149	67	41	65
County average	18	22	26	13	23	20	19	14	17	8	7
(all strutting grounds)											
%change from previous year - comparable grounds	+20	+13	+42	-19	+21	+20	+4	-37	+1	-33	+58
<b>STATE TOTALS</b>											
No. strutting grounds counted	108	113	108	142	119	131	136	138	120	116	154
Total grouse counted	2,354	2,472	1,809	2,482	2,296	2,460	2,855	2,802	2,808	2,148	2,469
County average	22	22	17	18	19	19	21	20	23	19	16
(all strutting grounds)											
%change from previous year - comparable grounds	-17	-1	-26	+17	-4	+2	+6	-15	-13	-20	-9

Table 2. Sage grouse summer inventory summary, 1981.

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		
<b>Northern Region</b>																
Box Elder	33	33	131	3.97	16	21	176	225	152	68	32	4	62	0	66	571
Cache	2	2	7	3.50	18	21	3	23	28	122	40	11	11	0	22	232
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	7	7	36	5.14	0	0	23	30	36	120	105	6	6	2	14	471
Rich	21	21	77	3.67	112	60	28	161	137	85	350	22	0	24	46	648
Summit	9	9	33	3.67	0	0	20	29	33	114	92	17	21	8	46	135
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>72</b>	<b>72</b>	<b>284</b>	<b>3.94</b>	<b>146</b>	<b>102</b>	<b>250</b>	<b>468</b>	<b>386</b>	<b>82</b>	<b>619</b>	<b>60</b>	<b>100</b>	<b>34</b>	<b>194</b>	<b>440</b>
<b>Central Region</b>																
Juab	2	2	4	2.00	3	23	6	11	27	245	90	6	4	0	10	380
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	5	5	24	4.80	7	49	9	21	73	348	182	0	26	5	31	303
Tooele	14	14	42	3.00	14	42	53	81	84	101	176	10	5	11	26	627
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	6	6	23	3.83	2	10	6	14	33	236	243	20	0	12	32	147
<b>REGIONAL TOTALS</b>	<b>27</b>	<b>27</b>	<b>93</b>	<b>3.44</b>	<b>26</b>	<b>124</b>	<b>74</b>	<b>127</b>	<b>217</b>	<b>171</b>	<b>691</b>	<b>36</b>	<b>35</b>	<b>28</b>	<b>99</b>	<b>347</b>
<b>Southern Region</b>																
Beaver	2	2	11	5.50	3	14	19	24	25	104	85	5	0	3	8	613
Garfield	2	2	9	4.50	0	2	11	13	11	84	0	0	5	0	5	480
Iron	14	14	50	3.57	27	27	25	66	75	113	0	0	13	0	13	1,085
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	30	2	0	0	2	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	23	23	91	3.96	6	22	14	43	113	263	170	17	12	--	29	538
<b>REGIONAL TOTALS</b>	<b>41</b>	<b>41</b>	<b>161</b>	<b>3.93</b>	<b>36</b>	<b>65</b>	<b>69</b>	<b>146</b>	<b>226</b>	<b>154</b>	<b>285</b>	<b>24</b>	<b>30</b>	<b>3</b>	<b>57</b>	<b>653</b>
<b>Northeastern Region</b>																
Daggett	18	18	74	4.11	18	71	27	63	145	230	168	8	2	16	26	800
Duchesne	22	22	86	3.91	33	83	17	72	169	235	158	15	15	12	42	574
Uintah	26	26	137	5.27	46	134	35	107	271	253	445	84	10	1	95	398
<b>REGIONAL TOTALS</b>	<b>66</b>	<b>66</b>	<b>297</b>	<b>4.50</b>	<b>97</b>	<b>288</b>	<b>79</b>	<b>242</b>	<b>585</b>	<b>242</b>	<b>771</b>	<b>107</b>	<b>27</b>	<b>29</b>	<b>163</b>	<b>507</b>
<b>Southeastern Region</b>																
Carbon	0	0	0	--	5	18	23	28	18	64	168	21	0	0	21	219
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	2	2	7	3.50	0	0	0	2	7	350	209	15	0	3	18	50
<b>REGIONAL TOTALS</b>	<b>2</b>	<b>2</b>	<b>7</b>	<b>3.50</b>	<b>5</b>	<b>18</b>	<b>23</b>	<b>30</b>	<b>25</b>	<b>83</b>	<b>377</b>	<b>36</b>	<b>0</b>	<b>3</b>	<b>39</b>	<b>141</b>
<b>STATE TOTALS</b>	<b>208</b>	<b>208</b>	<b>842</b>	<b>4.05</b>	<b>310</b>	<b>597</b>	<b>495</b>	<b>1,013</b>	<b>1,439</b>	<b>142</b>	<b>2,743</b>	<b>263</b>	<b>192</b>	<b>97</b>	<b>552</b>	<b>444</b>

Table 3. Trend of sage grouse young per 100 adults, 1971-81.

Region and County	Year											Average	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1971-80	1971-80
<u>Northern Region</u>													
Box Elder	75	83	225	119	106	250	75	125	81	84	68		
Cache	168	171	80	161	329	486	450	--	0	300	122		
Davis	--	--	--	--	--	--	--	--	--	--	--		
Morgan	58	600	245	131	64	71	35	414	66	89	120		
Rich	137	55	132	153	94	106	81	273	101	53	85		
Summit	158	173	146	275	52	247	106	316	221	74	114		
Weber	325	144	500	--	--	200	0	--	--	--	--		
<b>REGIONAL TOTALS</b>	<b>135</b>	<b>99</b>	<b>167</b>	<b>131</b>	<b>102</b>	<b>170</b>	<b>77</b>	<b>194</b>	<b>99</b>	<b>67</b>	<b>82</b>	<b>124</b>	
<u>Central Region</u>													
Juab	--	1800	500	--	--	--	76	46	262	204	245		
Salt Lake	--	--	--	--	--	--	--	--	--	--	--		
Sanpete	288	177	138	89	280	414	257	224	154	267	348		
Tooele	188	322	318	314	168	286	123	283	449	143	101		
Utah	--	--	--	--	--	--	--	--	--	--	--		
Wasatch	212	145	68	101	118	123	54	93	163	170	236		
<b>REGIONAL TOTALS</b>	<b>208</b>	<b>216</b>	<b>106</b>	<b>141</b>	<b>138</b>	<b>187</b>	<b>77</b>	<b>112</b>	<b>204</b>	<b>171</b>	<b>171</b>	<b>256</b>	
<u>Southern Region</u>													
Beaver	250	467	329	219	205	181	69	156	100	142	104		
Garfield	93	93	121	143	277	174	174	176	272	383	84		
Iron	183	37	350	46	--	--	80	313	229	269	113		
Kane	--	336	450	--	--	0	--	--	57	--	--		
Millard	--	--	--	--	--	--	--	--	--	--	--		
Piute	--	--	--	317	67	0	--	--	--	--	--		
Sevier	--	--	500	400	0	533	0	625	--	--	--		
Washington	--	--	--	--	--	--	--	--	--	--	--		
Wayne	63	62	394	166	545	286	115	308	288	291	263		
<b>REGIONAL TOTALS</b>	<b>85</b>	<b>76</b>	<b>311</b>	<b>157</b>	<b>287</b>	<b>194</b>	<b>103</b>	<b>224</b>	<b>230</b>	<b>235</b>	<b>154</b>	<b>190</b>	
<u>Northeastern Region</u>													
Daggett	168	273	150	266	51	190	169	198	169	200	230		
Duchesne	230	219	--	161	120	161	53	199	127	248	235		
Uintah	339	105	312	446	107	249	235	269	279	401	253		
<b>REGIONAL TOTALS</b>	<b>278</b>	<b>134</b>	<b>234</b>	<b>321</b>	<b>97</b>	<b>206</b>	<b>154</b>	<b>226</b>	<b>191</b>	<b>297</b>	<b>242</b>	<b>214</b>	
<u>Southeastern Region</u>													
Carbon	145	125	328	185	116	214	46	164	400	--	64		
Emery	--	--	--	0	--	--	--	--	--	--	--		
Grand	275	--	0	--	400	25	3	--	71	--	--		
San Juan	70	26	375	82	47	22	24	94	--	400	350		
<b>REGIONAL TOTALS</b>	<b>81</b>	<b>56</b>	<b>340</b>	<b>100</b>	<b>63</b>	<b>68</b>	<b>25</b>	<b>142</b>	<b>223</b>	<b>450</b>	<b>83</b>	<b>155</b>	
<b>STATE TOTALS</b>	<b>138</b>	<b>100</b>	<b>195</b>	<b>160</b>	<b>120</b>	<b>171</b>	<b>87</b>	<b>181</b>	<b>175</b>	<b>163</b>	<b>142</b>	<b>149</b>	



Table 4. Trend of sage grouse mean brood size, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	4.25	3.93	4.69	4.07	3.81	5.59	4.36	4.76	4.32	3.36	3.97	
Cache	4.50	4.88	4.00	4.62	5.00	6.25	4.50	--	--	1.00	3.50	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	5.50	6.00	4.40	4.75	3.80	4.25	3.50	6.44	4.00	5.60	5.14	
Rich	4.44	4.69	4.48	3.91	4.00	6.04	3.83	5.24	4.58	3.36	3.67	
Summit	5.58	4.73	4.56	5.00	3.75	5.00	4.50	5.77	5.00	3.78	3.67	
Weber	4.33	6.50	5.00	--	--	2.00	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>4.98</b>	<b>4.58</b>	<b>4.55</b>	<b>4.17</b>	<b>4.03</b>	<b>5.45</b>	<b>4.17</b>	<b>5.20</b>	<b>4.52</b>	<b>3.61</b>	<b>3.94</b>	<b>4.53</b>
<u>Central Region</u>												
Juab	--	7.50	5.00	--	--	--	4.50	3.33	4.25	5.00	2.00	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	6.00	5.33	4.75	4.00	4.00	5.67	3.20	4.57	6.44	5.58	4.80	
Tooele	4.19	4.81	4.90	5.25	5.50	5.07	4.17	5.13	5.64	4.09	3.00	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	2.94	3.06	4.00	4.24	3.86	4.70	3.27	4.90	4.90	4.09	3.83	
<b>REGIONAL TOTALS</b>	<b>3.94</b>	<b>3.90</b>	<b>4.38</b>	<b>4.49</b>	<b>4.22</b>	<b>4.98</b>	<b>3.44</b>	<b>4.82</b>	<b>5.18</b>	<b>4.41</b>	<b>3.44</b>	<b>4.38</b>
<u>Southern Region</u>												
Beaver	5.00	3.83	4.31	3.64	3.90	4.95	3.57	4.29	4.00	4.14	5.50	
Garfield	3.73	3.25	3.50	5.41	4.18	3.50	4.00	4.00	4.39	5.00	4.50	
Iron	4.33	3.71	5.33	6.33	--	--	3.00	5.50	4.68	4.12	3.57	
Kane	--	4.00	4.50	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	5.67	1.00	--	--	--	--	--	--	
Sevier	--	--	5.00	4.00	--	5.33	--	6.25	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	4.02	3.36	5.17	4.70	5.45	3.95	4.40	4.56	4.74	4.60	3.96	
<b>REGIONAL TOTALS</b>	<b>4.10</b>	<b>3.53</b>	<b>4.72</b>	<b>4.54</b>	<b>4.27</b>	<b>4.18</b>	<b>4.00</b>	<b>4.55</b>	<b>4.61</b>	<b>4.48</b>	<b>3.93</b>	<b>4.30</b>
<u>Northeastern Region</u>												
Daggett	4.00	3.80	4.65	4.93	3.25	4.55	4.80	5.05	5.10	4.75	4.11	
Duchesne	5.17	5.40	--	3.82	3.60	4.11	3.56	4.00	4.73	4.42	3.91	
Uintah	5.19	4.60	4.60	5.06	4.69	5.21	4.48	4.87	4.67	5.55	5.27	
<b>REGIONAL TOTALS</b>	<b>5.04</b>	<b>4.60</b>	<b>4.62</b>	<b>4.82</b>	<b>4.24</b>	<b>4.70</b>	<b>4.30</b>	<b>4.94</b>	<b>4.79</b>	<b>5.05</b>	<b>4.50</b>	<b>4.71</b>
<u>Southeastern Region</u>												
Carbon	4.67	4.14	3.50	3.92	2.67	5.05	4.14	5.17	4.67	--	--	
Emery	--	--	--	--	--	--	--	--	--	--	--	
Grand	--	--	--	--	4.00	3.00	--	--	5.00	--	--	
San Juan	5.10	3.93	5.67	6.65	3.50	--	3.29	--	--	--	3.50	
<b>REGIONAL TOTALS</b>	<b>5.00</b>	<b>4.05</b>	<b>4.43</b>	<b>5.47</b>	<b>3.17</b>	<b>4.77</b>	<b>3.71</b>	<b>5.17</b>	<b>3.25</b>	<b>--</b>	<b>3.50</b>	<b>4.34</b>
<b>STATE TOTALS</b>	<b>4.62</b>	<b>4.16</b>	<b>4.58</b>	<b>4.57</b>	<b>4.15</b>	<b>4.89</b>	<b>3.99</b>	<b>4.97</b>	<b>4.77</b>	<b>4.51</b>	<b>4.05</b>	<b>4.52</b>

Table 5. Trend of sage grouse observed per 100 hours, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	253	467	166	459	187	457	670	452	1,835	575	571	
Cache	229	183	150	250	261	410	29	--	0	154	232	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	176	111	345	514	140	433	218	160	412	427	471	
Rich	228	348	298	428	452	724	580	838	952	393	648	
Summit	420	349	119	188	109	268	361	369	226	111	135	
Weber	155	92	40	--	--	12	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>288</b>	<b>319</b>	<b>188</b>	<b>398</b>	<b>204</b>	<b>429</b>	<b>461</b>	<b>400</b>	<b>545</b>	<b>315</b>	<b>440</b>	<b>355</b>
<u>Central Region</u>												
Juab	0	181	30	--	0	0	580	255	588	206	380	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	107	106	135	85	86	263	255	594	743	319	303	
Tooele	342	786	161	665	257	781	311	265	776	710	627	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	377	364	666	529	520	1,353	1,253	767	652	360	147	
<b>REGIONAL TOTALS</b>	<b>230</b>	<b>341</b>	<b>244</b>	<b>402</b>	<b>329</b>	<b>740</b>	<b>618</b>	<b>556</b>	<b>695</b>	<b>410</b>	<b>347</b>	<b>457</b>
<u>Southern Region</u>												
Beaver	420	486	277	460	188	555	428	242	89	920	613	
Garfield	604	358	258	603	112	226	211	545	468	229	480	
Iron	426	1,133	200	241	--	--	771	220	1,315	342	1,085	
Kane	--	253	550	--	--	233	0	--	588	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	833	62	100	--	--	--	--	--	
Sevier	--	--	--	500	0	950	83	207	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	2,061	555	742	335	209	491	240	444	494	338	538	
<b>REGIONAL TOTALS</b>	<b>911</b>	<b>494</b>	<b>393</b>	<b>413</b>	<b>134</b>	<b>348</b>	<b>265</b>	<b>380</b>	<b>617</b>	<b>346</b>	<b>653</b>	<b>430</b>
<u>Northeastern Region</u>												
Daggett	835	346	308	381	132	352	575	637	1,274	489	800	
Duchesne	159	118	0	196	84	347	446	392	258	446	574	
Uintah	735	594	310	459	386	716	513	397	705	474	398	
<b>REGIONAL TOTALS</b>	<b>523</b>	<b>349</b>	<b>233</b>	<b>358</b>	<b>217</b>	<b>473</b>	<b>509</b>	<b>427</b>	<b>673</b>	<b>483</b>	<b>507</b>	<b>425</b>
<u>Southeastern Region</u>												
Carbon	45	309	500	146	49	147	283	295	200	5	219	
Emery	0	--	--	11	0	--	0	0	--	--	--	
Grand	133	25	25	--	500	1,125	550	71	240	--	--	
San Juan	560	775	300	856	321	304	341	194	--	100	50	
<b>REGIONAL TOTALS</b>	<b>218</b>	<b>432</b>	<b>215</b>	<b>360</b>	<b>128</b>	<b>220</b>	<b>332</b>	<b>237</b>	<b>210</b>	<b>36</b>	<b>141</b>	<b>239</b>
<b>STATE TOTALS</b>	<b>383</b>	<b>373</b>	<b>237</b>	<b>387</b>	<b>196</b>	<b>428</b>	<b>445</b>	<b>407</b>	<b>621</b>	<b>374</b>	<b>444</b>	<b>385</b>

Table 6. Summary of sage grouse hunter success and distribution of harvest and hunter pressure by region and county, 1981.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	87	2,929	3,694	1.26	15.74	23.29
Cache	23	743	297	0.40	3.99	1.87
Davis <sup>+</sup>	6	191	42	0.22	1.03	0.27
Morgan	17	573	425	0.74	3.08	2.68
Rich	30	1,486	785	0.53	7.98	4.95
Summit	42	1,231	467	0.38	6.61	2.95
Weber	10	403	64	0.16	2.17	0.40
REGIONAL TOTALS	215	7,557	5,774	0.76	40.59	36.41
<u>Central Region</u>						
Juab <sup>+</sup>	7	297	340	1.14	1.60	2.14
Salt Lake <sup>+</sup>	8	340	225	0.75	1.82	1.61
Sanpete <sup>+</sup>	2	106	149	1.40	0.57	0.94
Tooele	24	743	403	0.54	3.99	2.54
Utah <sup>+</sup>	23	1,125	722	0.64	6.04	4.55
Wasatch	19	552	276	0.50	2.96	1.74
REGIONAL TOTALS	83	3,163	2,144	0.68	16.99	13.52
<u>Southern Region</u>						
Beaver	17	679	722	1.06	3.65	4.55
Garfield	43	1,762	2,356	1.34	0.46	14.86
Iron	10	276	255	0.92	1.48	1.61
Kane	4	149	106	0.71	0.80	0.67
Millard	0	0	0	0.00	0.00	0.00
Piute	2	64	127	2.00	0.34	0.80
Sevier	10	467	212	0.45	2.51	1.34
Washington	0	0	0	0.00	0.00	0.00
Wayne	22	701	998	1.42	3.76	6.29
REGIONAL TOTALS	108	4,097	4,776	1.17	22.01	30.12
<u>Northeastern Region</u>						
Daggett	17	807	679	0.84	4.33	4.28
Duchesne	21	658	658	1.00	3.53	4.15
Uintah	38	1,613	1,635	1.01	8.67	10.31
REGIONAL TOTALS	76	3,078	2,972	0.97	16.53	18.74
<u>Southeastern Region</u>						
Carbon <sup>+</sup>	5	340	64	0.19	1.82	0.40
Emery <sup>+</sup>	1	21	21	1.00	0.11	0.13
Grand	3	170	64	0.38	0.91	0.40
San Juan	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	9	531	149	0.28	2.85	0.94
Unknown counties	2	191	42	0.22	1.03	0.27
Mixed counties	0	0	0	0.00	0.00	0.00
STATE TOTALS	493	18,617	15,857	0.85	100	100

\*Total hunter trips from questionnaire returns.

<sup>+</sup>Closed season - Counties hunted were either reported incorrectly, or hunters were hunting illegally.

Table 7. Summary of sage grouse bagged per hunter-day by region and county, 1975-81.

Region and County	Year						
	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>							
Box Elder	0.85	1.02	0.70	1.12	1.27	1.41	1.26
Cache	0.78	0.78	0.51	0.43	0.74	0.61	0.40
Davis	0.60	0.43	0.45	0.53	0.00	0.27	0.22*
Morgan	0.63	0.50	0.57	0.69	0.68	0.57	0.74
Rich	0.47	0.77	0.59	0.87	0.76	0.53	0.53
Summit	0.63	0.80	0.61	0.80	0.77	0.48	0.38
Weber	0.75	0.79	0.79	0.84	0.58	0.85	0.16
REGIONAL TOTALS	0.70	0.77	0.61	0.80	0.87	0.94	0.76
<u>Central Region</u>							
Juab	0.50	1.11	0.64	0.86	1.24	0.94	1.14*
Salt Lake	*	*	*	0.38*	0.87*	0.64*	0.75*
Sanpete	*	1.37	0.61	0.55	0.59	0.56	1.40*
Tooele	0.45	0.54	0.60	0.54*	0.69*	0.86	0.54
Utah	0.56	0.47	1.10	0.74	0.90	0.57	0.64
Wasatch	0.91	0.80	0.71	0.71	0.67	0.58	0.50
REGIONAL TOTALS	0.66	0.71	0.73	0.69	0.76	0.64	0.68
<u>Southern Region</u>							
Beaver	0.37	0.98	0.83	1.12	1.06	0.86	1.06
Garfield	1.16	0.90	0.71	1.09	1.24	1.20	1.34
Iron	0.57	1.20	0.84	0.71	0.50	0.82	0.92
Kane	0.00	0.00	2.00	3.00	0.00	0.00	0.71
Millard	0.00	0.33	0.50	0.50	0.00	0.70	0.00
Piute	0.94	1.50	0.57	0.46	0.92	0.79	2.00
Sevier	0.74	0.77	0.48	1.07	0.55	0.58	0.45
Washington	*	*	*	2.00*	2.00*	1.75	0.00
Wayne	0.91	1.26	0.69	0.94	1.49	1.19	1.42
REGIONAL TOTALS	0.85	0.96	0.69	0.99	1.11	0.96	1.17
<u>Northeastern Region</u>							
Daggett	0.68	1.19	1.50	1.15	1.28	0.77	0.84
Duchesne	0.94	1.05	0.84	1.14	1.26	0.70	1.00
Uintah	0.95	1.36	1.22	1.21	1.21	0.94	1.01
REGIONAL TOTALS	0.90	1.29	1.14	1.18	1.23	0.82	0.97
<u>Southeastern Region</u>							
Carbon	0.95	1.26	0.85	0.93	0.82	0.53	0.19*
Emery	0.18	0.50	0.33	1.14	0.92	1.26	1.00*
Grand	0.00	2.00	0.00	1.33	0.00	1.50	0.38
San Juan	0.67	0.00	2.00	1.37	0.25	0.17	0.00
REGIONAL TOTALS	0.82	1.24	0.79	1.03	0.77	0.69	0.28
Unknown counties	0.43	0.87	0.46	0.55	1.95	1.25	0.22
Mixed counties	--	3.00	2.00	2.40	0.00	0.00	0.00
Illegal areas	1.68	0.36	0.51	0.75	0.00	0.00	0.00
STATE TOTALS	0.74	0.87	0.72	0.87	0.92	0.85	0.85

\*Closed season.

Table 8. Percentage distribution of sage grouse harvest by region and county, 1975-81.

Region and County	Year						
	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>							
Box Elder	8.58	8.32	7.04	14.04	15.08	31.07	23.29
Cache	10.73	11.53	5.75	4.71	6.59	3.06	1.87
Davis	0.77	1.89	0.81	0.62	0.00	0.60	0.27*
Morgan	2.06	1.57	2.19	2.39	2.37	1.19	2.68
Rich	4.03	10.22	6.56	7.41	10.91	5.74	4.95
Summit	7.04	4.28	7.85	4.94	6.33	3.50	2.95
Weber	6.18	4.45	3.89	4.55	1.80	1.64	0.40
REGIONAL TOTALS	39.40	42.26	34.09	38.66	43.13	46.80	36.41
<u>Central Region</u>							
Juab	0.26	1.73	1.46	0.93*	1.34*	1.12*	2.14*
Salt Lake	*	*	*	0.23*	1.34*	0.67*	1.61*
Sanpete	*	3.95	2.02	1.39	1.80	1.34	0.94*
Tooele	1.89	3.54	5.59	1.00*	0.57	3.28	2.54
Utah	8.93	2.64	7.21	5.48	4.84	3.80	4.55*
Wasatch	6.09	3.95	8.26	8.64	6.18	5.96	1.74
REGIONAL TOTALS	21.46	16.47	25.75	17.67	16.06	16.17	13.52
<u>Southern Region</u>							
Beaver	0.60	3.79	1.54	1.39	0.87	2.38	4.55
Garfield	6.87	3.79	3.32	5.40	4.32	5.29	14.86
Iron	1.12	0.49	1.30	1.16	0.26	1.04	1.61
Kane	0.00	0.00	0.16	0.23	0.00	0.00	0.67
Millard	0.00	0.25	0.40	0.15	0.00	0.52	0.00
Piute	1.29	0.49	0.32	0.46	1.13	1.64	0.80
Sevier	3.86	1.98	1.21	2.24	1.03	2.09	1.34
Washington	*	*	*	0.77*	0.10*	0.52*	0.00
Wayne	7.47	5.52	3.97	3.55	6.07	5.07	6.29
REGIONAL TOTALS	21.37	16.31	12.39	15.35	13.79	18.55	30.12
<u>Northeastern Region</u>							
Daggett	1.29	1.57	2.67	2.39	3.29	1.27	4.28
Duchesne	2.75	1.89	3.97	5.56	6.28	4.92	4.15
Uintah	6.44	9.88	12.63	10.73	9.68	7.60	10.31
REGIONAL TOTALS	10.47	13.34	19.27	18.67	19.25	13.79	18.74
<u>Southeastern Region</u>							
Carbon	5.32	4.04	4.86	4.40	4.27	2.24	0.40*
Emery	0.17	0.08	0.32	1.93	1.24	1.79	0.13*
Grand	--	0.16	0.00	0.31	0.00	0.22	0.40
San Juan	0.69	0.00	0.32	0.85	0.15	0.07	0.00
REGIONAL TOTALS	6.18	4.28	5.51	7.48	5.66	4.32	0.94
Unknown counties	1.12	5.60	2.41	1.23	2.11	0.37	0.27
Mixed counties	--	1.73	0.49	0.93	0.00	0.00	0.00
Illegal areas	4.46	0.66	1.37	2.93	2.78	2.31	10.04*
STATE TOTALS	100	100	100	100	100	100	100

\*Closed season.

Table 9. Percentage distribution of sage grouse hunting pressure by region and county, 1975-81.

Region and County	Year						
	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>							
Box Elder	7.45	7.06	7.31	10.92	10.96	17.48	15.74
Cache	10.16	12.77	8.13	9.58	8.16	4.23	3.99
Davis	0.95	3.78	1.29	1.01	0.00	1.89	1.03*
Morgan	2.40	2.71	2.75	3.02	3.23	1.77	3.08
Rich	6.25	11.41	8.02	7.37	13.19	9.15	7.98
Summit	8.27	4.64	9.25	5.36	7.64	6.18	6.61
Weber	6.06	4.85	3.57	4.69	2.85	1.64	2.17
REGIONAL TOTALS	41.54	47.22	40.32	41.96	46.03	42.33	40.59
<u>Central Region</u>							
Juab	0.38	1.36	1.64	0.94*	1.00*	1.01*	1.60*
Salt Lake	*	*	*	0.54*	1.42*	0.88*	1.82*
Sanpete	*	2.50	2.40	2.21	2.80	2.02	0.57*
Tooele	3.09	5.71	6.73	1.61*	0.76*	3.22	3.99
Utah	11.81	4.85	4.39	6.43	4.98	5.62	6.04*
Wasatch	4.92	4.28	8.43	10.59	8.49	8.77	2.96
REGIONAL TOTALS	23.99	19.97	25.34	22.32	19.45	21.51	16.99
<u>Southern Region</u>							
Beaver	1.20	3.35	1.35	1.07	0.76	2.33	3.65
Garfield	4.36	3.64	3.39	4.29	3.23	3.72	9.46
Iron	1.45	0.36	1.11	1.41	0.47	1.07	1.48
Kane	0.25	0.21	0.06	0.07	0.00	0.00	0.80
Millard	0.25	0.64	0.59	0.27	0.28	0.63	0.00
Piute	1.01	0.29	0.41	0.87	1.14	1.77	0.34
Sevier	3.85	2.21	1.81	1.81	1.80	3.03	2.51
Washington	*	*	*	0.34*	0.05*	0.25*	0.00
Wayne	4.25	6.06	3.78	4.15	3.28	3.75	3.76
REGIONAL TOTALS	18.50	14.76	13.05	13.40	11.48	16.40	22.01
<u>Northeastern Region</u>							
Daggett	1.39	1.14	1.29	1.81	2.37	1.39	4.33
Duchesne	2.15	1.57	3.39	4.22	4.60	5.93	3.53
Uintah	4.99	6.28	7.49	7.71	7.40	6.88	3.67
REGIONAL TOTALS	8.52	8.99	12.17	13.74	14.37	14.20	16.53
<u>Southeastern Region</u>							
Carbon	4.10	2.78	4.15	4.09	4.79	3.60	1.82*
Emery	0.69	0.14	0.70	1.47	1.23	1.20	0.11*
Grand	0.00	0.07	0.06	0.20	0.14	0.12	0.91
San Juan	0.76	0.00	0.12	0.54	0.57	0.38	0.00
REGIONAL TOTALS	5.56	3.00	5.03	6.30	6.74	5.30	2.85
Unknown counties	1.89	5.56	3.92	1.94	1.93	0.25	1.03
Mixed counties	--	0.50	0.18	0.34	0.00	0.00	0.00
Illegal areas	3.85	1.57	1.94	3.42	0.00	0.00	12.99*
STATE TOTALS	100	100	100	100	100	100	100

\*Closed season.

Table 10. Statewide summary of sage grouse harvest statistics, 1951-81.

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
<hr/>					
TOTALS (1963-1981)	211,945	292,874	342,663	0.85	1.38
<hr/>					
AVERAGES (1963-1980)	11,215	15,390	18,002	0.85	1.37

\*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, 1981.

Region and County	ALL HUNTS				COMPLETE HUNTS				
	Total Parties	Total Hunters	Total Hours	Total Birds	Total Hunts	Total Hunters	Total Hours	Total Birds	Birds/100 Hr Hunter
<u>Northern Region</u>									
Box Elder	366	1,102	5,224	1,153	364	1,100	5,216	1,153	22 1.05
Cache	50	105	378	14	45	93	337	14	4 0.15
Davis	--	--	--	--	--	--	--	--	-- --
Morgan	--	--	--	--	--	--	--	--	-- --
Rich	81	204	910	48	81	204	910	48	5 0.24
Summit	7	14	28	6	7	14	28	6	21 0.43
Weber	1	2	3	0	1	2	3	0	-- --
<b>REGIONAL TOTALS</b>	<b>505</b>	<b>1,427</b>	<b>6,543</b>	<b>1,221</b>	<b>498</b>	<b>1,413</b>	<b>6,494</b>	<b>1,221</b>	<b>19 0.86</b>
<u>Central Region</u>									
Juab	--	--	--	--	--	--	--	--	-- --
Salt Lake	--	--	--	--	--	--	--	--	-- --
Sanpete	--	--	--	--	--	--	--	--	-- --
Tooele	28	74	141	37	8	22	36	21	58 0.95
Utah	--	--	--	--	--	--	--	--	-- --
Wasatch	--	--	--	--	--	--	--	--	-- --
<b>REGIONAL TOTALS</b>	<b>28</b>	<b>74</b>	<b>141</b>	<b>37</b>	<b>8</b>	<b>22</b>	<b>36</b>	<b>21</b>	<b>58 0.95</b>
<u>Southern Region</u>									
Beaver	--	--	--	--	--	--	--	--	-- --
Garfield	23	88	370	72	4	12	59	24	41 2.00
Iron	19	59	181	40	11	49	49	9	18 0.18
Kane	--	--	--	--	--	--	--	--	-- --
Millard	--	--	--	--	--	--	--	--	-- --
Piute	--	--	--	--	--	--	--	--	-- --
Sevier	--	--	--	--	--	--	--	--	-- --
Washington	--	--	--	--	--	--	--	--	-- --
Wayne	88	232	1,042	258	54	127	739	224	30 1.76
<b>REGIONAL TOTALS</b>	<b>130</b>	<b>379</b>	<b>1,593</b>	<b>370</b>	<b>69</b>	<b>188</b>	<b>847</b>	<b>257</b>	<b>30 1.71</b>
<u>Northeastern Region</u>									
Daggett	12	32	68	18	6	14	32	13	41 0.93
Duchesne	7	16	49	5	--	--	--	--	-- --
Uintah	92	240	605	140	56	124	383	90	23 0.73
<b>REGIONAL TOTALS</b>	<b>111</b>	<b>288</b>	<b>722</b>	<b>163</b>	<b>62</b>	<b>138</b>	<b>415</b>	<b>103</b>	<b>25 0.75</b>
<u>Southeastern Region</u>									
Carbon	--	--	--	--	--	--	--	--	-- --
Emery	--	--	--	--	--	--	--	--	-- --
Grand	--	--	--	--	--	--	--	--	-- --
San Juan	1	1	2	0	1	1	2	0	-- --
<b>REGIONAL TOTALS</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>-- --</b>
<b>STATE TOTALS</b>	<b>775</b>	<b>2,169</b>	<b>9,001</b>	<b>1,791</b>	<b>638</b>	<b>1,762</b>	<b>7,794</b>	<b>1,602</b>	<b>21 0.91</b>



Table 12. Sage grouse hunter success trend determined by field bag checks, 1976-81.

Region and County	1976		1977		1978		1979		1980		1981	
	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	20	0.90	20	0.96	31	1.36	38	1.40	29	1.22	22	1.05
Cache	14	0.49	7	0.26	11	0.45	7	0.27	3	0.13	4	0.15
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	28	0.64	32	0.59	--	--	7	0.22	--	--	--	--
Rich	13	0.63	4	0.22	14	0.58	14	0.58	7	0.33	5	0.24
Summit	--	--	45	0.93	--	--	11	0.34	6	0.20	21	0.43
Weber	6	0.29	0	0.00	7	0.24	--	--	6	0.27	--	--
REGIONAL TOTALS	15	0.64	12	0.56	23	0.98	25	0.93	18	0.82	19	0.86
<u>Central Region</u>												
Juab	109	1.00	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	28	0.85	24	0.73	--	--	--	--	68	1.00	58	0.95
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	34	0.98	33	0.79	35	0.81	32	0.73	41	0.85	--	--
REGIONAL TOTALS	33	0.92	31	0.77	35	0.81	32	0.73	58	0.95	58	0.95
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	17	1.54	18	0.71	26	1.09	65	1.83	--	--	41	2.00
Iron	67	1.04*	74	1.56	--	--	73	1.90	36	0.84	18	0.18
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	31	0.57*	80	2.00	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	24	1.38	14	0.74	21	0.99	20	1.12	39	2.11	30	1.76
REGIONAL TOTALS	23	1.40	15	0.76	21	1.00	28	1.34	36	1.78	30	1.71
<u>Northeastern Region</u>												
Daggett	46	2.64	60	0.71	27	0.82	40	1.31	28	1.04	41	0.93
Duchesne	34	1.59	26	0.60	140	1.75	72	1.44	--	--	--	--
Uintah	46	1.33	21	0.78	21	1.14	41	1.19	28	1.49	23	0.73
REGIONAL TOTALS	42	1.44	24	0.75	23	1.03	41	1.23	28	1.23	25	0.75
<u>Southeastern Region</u>												
Carbon	59	1.00	36	1.14	31	1.10	11	0.42	--	--	--	--
Emery	0	0.00	--	--	0	0.00	--	--	--	--	--	--
Grand	--	--	--	--	27	1.14	20	0.50	--	--	--	--
San Juan	--	--	15	0.80	--	--	--	--	--	--	--	--
REGIONAL TOTALS	58	0.97	29	1.05	31	1.10	12	0.43	--	--	--	--
STATE TOTALS	22	0.90	15	0.65	23	0.98	27	1.01	21	0.92	21	0.91

\*Sage grouse per hunter index based on all hunts.

Table 13. Sex and age composition of harvested sage grouse, 1981.

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	574	114	262	376	66	132	198	53	76
Cache	12	1	4	5	4	3	7	140	175
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--
Rich	40	6	18	24	8	8	16	67	89
Summit	6	1	5	6	0	0	0	--	--
Weber	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>632</b>	<b>122</b>	<b>289</b>	<b>411</b>	<b>78</b>	<b>143</b>	<b>221</b>	<b>54</b>	<b>76</b>
<u>Central Region</u>									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--
Tooele	30	3	15	18	5	7	12	67	80
Utah	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>30</b>	<b>3</b>	<b>15</b>	<b>18</b>	<b>5</b>	<b>7</b>	<b>12</b>	<b>67</b>	<b>80</b>
<u>Southern Region</u>									
Beaver	--	--	--	--	--	--	--	--	--
Garfield	207	27	46	73	65	69	134	184	291
Iron	18	8	3	11	4	3	7	64	233
Kane	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	299	39	56	95	103	101	204	215	364
<b>REGIONAL TOTALS</b>	<b>524</b>	<b>74</b>	<b>105</b>	<b>179</b>	<b>172</b>	<b>173</b>	<b>345</b>	<b>193</b>	<b>329</b>
<u>Northeastern Region</u>									
Daggett	23	6	8	14	5	4	9	64	113
Duchesne	6	0	2	2	1	3	4	200	200
Uintah	227	21	55	76	74	77	151	199	275
<b>REGIONAL TOTALS</b>	<b>256</b>	<b>27</b>	<b>65</b>	<b>92</b>	<b>80</b>	<b>84</b>	<b>164</b>	<b>178</b>	<b>252</b>
<u>Southeastern Region</u>									
Carbon	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<b>STATE TOTALS</b>	<b>1,442</b>	<b>226</b>	<b>474</b>	<b>700</b>	<b>335</b>	<b>407</b>	<b>742</b>	<b>106</b>	<b>157</b>

Table 14. Sex and age composition of harvested sage grouse from 1978-81.

Region and County	1978						1979						1980						1981						Averages 1976-80															
	Sex Ratio %		Young/100H		n	100A	Sex Ratio %		Young/100H		n	100A	Sex Ratio %		Young/100H		n	100A	Sex Ratio %		Young/100H		n	100A	Sex Ratio %		Young/100H		n	100A										
	M	F	M	F			M	F	M	F			M	F	M	F			M	F	M	F			M	F														
Northern Region																																								
Box Elder	388	49	51	294	149	622	43	57	166	106	611	42	58	91	55	574	51	69	76	53																				
Cache	66	44	56	267	154	27	30	70	100	68	14	36	64	140	100	12	42	58	175	140																				
Davis	13	39	61	100	86	4	100	0	--	--	--	--	--	--	--	--	--	--	--	--																				
Morgan	188	39	61	332	203	131	43	57	96	66	101	45	55	85	53	40	35	65	89	67																				
Rich	6	17	83	150	100	8	62	38	150	43	7	29	71	25	17	6	17	83	--	--																				
Summit	9	22	78	175	125	17	47	53	160	89	--	--	--	--	--	--	--	--	--	--																				
Weber	45	55	179	160	809	43	57	149	94	733	42	58	90	55	632	32	68	76	54	589	45	55	185	128																
REGIONAL TOTALS																																								
Central Region																																								
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Tooele	--	--	--	--	--	--	--	--	--	--	67	39	61	79	52	30	27	73	80	67																				
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Wasatch	178	52	48	314	162	60	45	55	227	131	17	47	53	400	240	--	--	--	--																					
REGIONAL TOTALS																																								
Southern Region	178	52	48	314	162	60	45	55	227	131	84	41	59	109	109	71	30	27	73	80	67	143	46	54	227	138														
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Garfield	71	36	64	253	209	177	37	63	292	181	119	43	57	278	170	207	44	56	291	184																				
Iron	13	61	39	1,000	333	62	44	56	260	170	45	47	53	157	96	18	67	33	233	64																				
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Wayne	252	35	65	217	190	342	42	58	186	111	377	41	59	291	204	299	47	53	364	215																				
REGIONAL TOTALS																																								
Northeastern Region	336	37	63	232	197	581	41	59	221	134	541	46	54	273	183	524	47	53	329	193	410	39	61	208	147															
Daggett	67	40*	60*	271	219	101	35	65	220	180	25	40	60	267	178	23	48	52	113	64																				
Duchesne	104	46*	54*	329	197	50	46	54	330	194	--	--	--	--	--	6	17	83	200	200																				
Uintah	386	45*	55*	329	214	355	41	59	272	175	218	35	65	227	183	227	42	58	275	199																				
REGIONAL TOTALS																																								
Southeastern Region	557	45*	55*	320	211	506	40	60	266	178	243	35	65	231	183	256	42	58	252	178	387	40	60	261	171															
Carbon	44	57	43	1,550	238	14	--	--	--	--	19	42	58	200	111	--	--	--	--	--																				
Emery	2	50	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																				
REGIONAL TOTALS																																								
STATE TOTALS	1,787	44	56	293	183	1,956	42	58	196	125	1,580	41	59	153	101	1,442	39	61	157	106	1,533	45	55	216	140															
*Includes estimated percentage of juveniles.																																								
n = wing sample size.																																								

# FOREST GROUSE

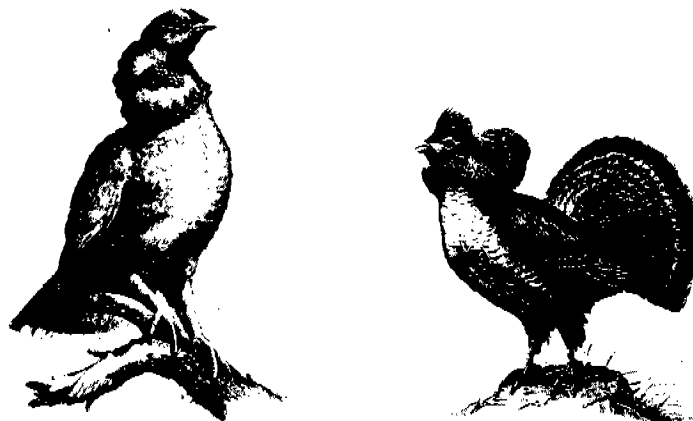
## SUMMARY

Judging from harvest statistics for the fall of 1980, the 1981 breeding populations of both ruffed and blue grouse were slightly lower than in 1980. Production of ruffed grouse indicated by brood counts was up from 1980 and near average. The number of ruffed grouse observed during brood surveys and the apparent density (grouse per 100 hours) suggested a favorable increase in abundance in 1981 compared to 1980.

Production of blue grouse was better than in 1980 and slightly exceeded the 10-year average. Blue grouse observed per 100 hours of effort remained 22 percent above average. A total of 132 forest grouse broods were observed during 1981 compared with 115 in 1980 and 147 in 1979.

Harvest statistics indicated lower density of forest grouse. Total harvest decreased from 45,522 during 1980 to 27,894 in 1981, another 39 percent decrease in harvest. Total hunters again decreased from 19,511 in 1980 to 14,329 in 1981, and days afield decreased from 49,899 to 34,305.

Field bag check data confirmed the decreased success shown by the questionnaire. Blue grouse wing data, however, indicated a 7 percent increase in young per 100 adults and 4 percent increase young per 100 hens.



## Brood Counts

### Ruffed Grouse

Results of the annual random brood survey for 1981 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 1981 compared to 1980 and the 10-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total ruffed grouse observed	181	+35	-23
Young per 100 adults	311	+6	+1
Mean brood size	4.57	+1	+2
Ruffed grouse observed per 100 hours	27	+35	0
Total hours effort (forest grouse)	738	+5	-20

Harvest statistics for 1980 indicated an average breeding population for 1981.

Effort on brood surveys increased slightly in comparison to 1980 but was still below average.

Total ruffed grouse observed increased from 1980 but remained well below average. Grouse observed per 100 hours was 35 percent higher than 1980.

Mean brood size, based on a sample of 30 broods (compared to 21 broods observed in 1980), remained slightly above the long-term average.

### Blue Grouse

Results of the annual random brood survey for 1981 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 1981 compared to 1980 and the 10-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total blue grouse observed	689	+5	+6
Young per 100 adults	274	+25	+15
Mean brood size	3.97	-5	-10
Blue grouse observed per 100 hours	93	0	+22
Total hours effort (forest grouse)	738	+5	-20

Harvest statistics for 1980 indicated an above average breeding population for 1981.

All indications from the 1981 summer surveys on blue grouse were that production was above 1980, and slightly above average. Total observations

remained relatively constant despite increased efforts. The number of grouse observed per 100 hours of effort remained the same as 1980 and was 22 percent above average.

The summer inventory indicated an increased fall blue grouse population, and wing samples collected at checking stations also indicated slightly increased production.

### Harvest

#### Hunter Questionnaire

Results of the 1981 forest grouse (ruffed and blue grouse combined) hunter questionnaire are shown in Table 10. 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 11-13 and total statewide harvest statistics in Table 14. Harvest statistics for 1981 compared to 1980 and the 18-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Forest grouse hunters	14,329	-27	-5
Forest grouse harvested	27,894	-39	-25
Hunter-days afield	34,305	-31	-4
Forest grouse per hunter-day	0.81	-11	-22
Forest grouse per hunter	1.95	-16	-21
Percent ruffed grouse	30.70	-10	-22
Percent blue grouse	64.00	+6	+19
Percent unidentified	5.30	-2	-22

Results from the harvest questionnaire indicated lower forest grouse population levels than implied by summer surveys. Total harvest continued to drop from the record harvest of 1978. Hunter success (grouse per hunter-day) was below average as was the number of grouse harvested per hunter. Hunter pressure again decreased significantly and was below the 18-year average.

#### Field Bag Checks

A summary of field bag check data for 1981 is found in Table 15. Hunter success trends determined via this method are shown in Table 16. Results of the 1981 survey compared to 1980 and the 10-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total hunters checked	1,178	-30	-38
Total hours hunted	4,989	-30	-34
Forest grouse per hunter (complete hunts)	0.51	+46	-18
Forest grouse bagged per 100 hours	11	+22	-31
Average hours per hunter-day (complete hunts)	4.50	+2	+10
Hours hunted per grouse bagged (complete hunts)	8.80	-28	+17

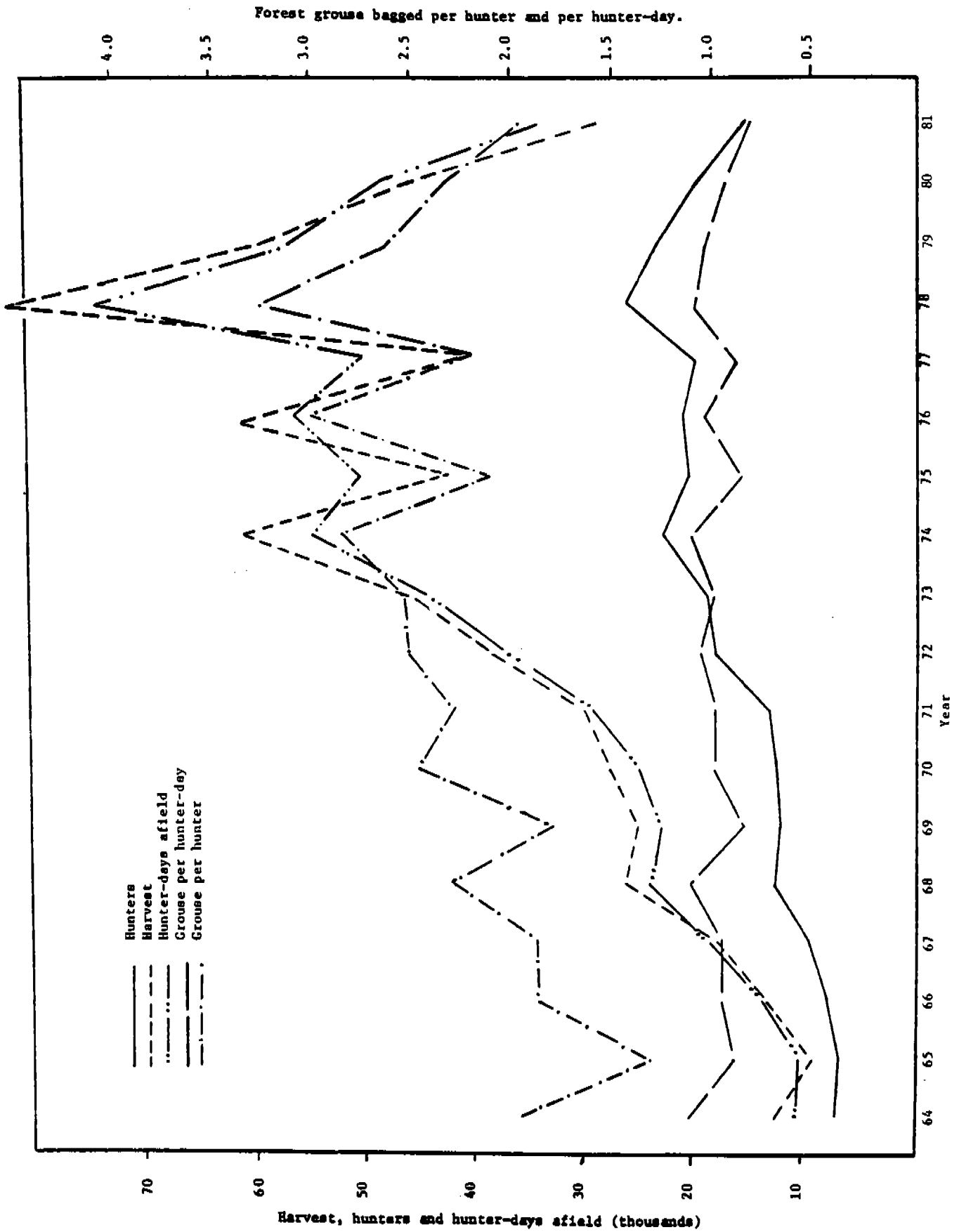


Figure 1. Statewide trends of forest grouse harvest statistics.

Table 1. Ruffed grouse summer inventory, 1981.

Region and County	Distinct Broods		Mixed Yng & Adults		Mean Brood	Total Yng	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
<u>Northern Region</u>																
Box Elder	0	0	0	0	---	0	0	0	0	--	95	9	0	1	10	--
Cache	0	0	0	0	---	0	0	0	0	--	170	37	22	3	62	--
Davis	0	0	0	0	---	0	0	0	0	--	83	6	0	9	15	--
Morgan	0	0	0	0	---	0	0	0	0	--	15	2	8	0	10	--
Rich	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Summit	1	1	2	0	2.00	0	0	1	2	200	50	11	0	4	15	--
Weber	2	2	8	0	4.00	0	1	3	8	267	275	22	3	10	35	31
REGIONAL TOTALS	3	3	10	0	3.33	0	1	4	10	250	688	87	33	27	147	10
<u>Central Region</u>																
Juab	0	0	0	0	--	0	0	0	0	--	180	14	8	0	22	--
Salt Lake	5	5	11	0	2.20	0	7	12	11	92	12	1	0	32	33	70
Sanpete	15	15	82	0	5.47	0	6	21	82	390	112	2	16	2	20	515
Tooele	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Utah	1	1	3	0	3.00	0	0	1	3	300	244	29	0	0	29	14
Wasatch	0	0	0	0	--	0	0	0	0	--	300	24	0	5	29	--
REGIONAL TOTALS	21	21	96	0	4.57	0	13	34	96	282	848	70	24	39	133	98
<u>Southern Region</u>																
Beaver	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Sevier	1	1	5	0	5.00	0	0	1	5	500	250	10	250	0	260	2
Washington	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	1	1	5	0	5.00	0	0	1	5	500	250	10	250	0	260	2
<u>Northeastern Region</u>																
Daggett	4	4	19	0	4.75	0	0	4	19	475	120	5	1	8	14	164
Duchesne	1	1	7	0	7.00	0	0	1	7	700	480	48	15	4	67	12
Uintah	0	0	0	0	--	0	0	0	0	--	235	30	9	0	39	--
REGIONAL TOTALS	5	5	26	0	5.20	0	0	5	26	520	835	83	25	12	120	26
<u>Southeastern Region</u>																
Carbon	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	---	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	30	30	137	0	4.57	0	14	44	137	311	2621	250	332	78	660	27



Table 2. Trend of ruffed grouse young per 100 adults, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<b>Northern Region</b>												
Box Elder	--	--	--	0	250	250	--	--	--	--	--	--
Cache	383	900	--	300	329	300	300	262	450	138	--	--
Davis	--	388	--	--	--	--	--	--	1,100	--	--	--
Morgan	540	--	--	400	--	500	--	100	400	600	--	--
Rich	--	375	600	--	317	300	--	--	--	--	--	--
Summit	514	650	333	500	217	250	475	400	500	200	200	200
Weber	340	--	450	--	--	--	400	--	500	500	267	--
<b>REGIONAL TOTALS</b>	<b>426</b>	<b>453</b>	<b>417</b>	<b>369</b>	<b>286</b>	<b>245</b>	<b>364</b>	<b>260</b>	<b>460</b>	<b>217</b>	<b>250</b>	<b>350</b>
<b>Central Region</b>												
Juab	325	--	300	400	500	100	--	--	--	--	--	--
Salt Lake	100	--	--	125	--	167	0	--	--	200	92	--
Sanpete	240	329	264	195	233	387	289	462	506	373	390	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	300	475	125	313	57	56	150	300	280	217	300	--
Wasatch	--	--	300	--	--	--	--	--	300	--	--	--
<b>REGIONAL TOTALS</b>	<b>242</b>	<b>358</b>	<b>231</b>	<b>221</b>	<b>164</b>	<b>273</b>	<b>246</b>	<b>424</b>	<b>416</b>	<b>295</b>	<b>282</b>	<b>287</b>
<b>Southern Region</b>												
Beaver	200	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	200	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	280	--	--	--	--	--	--	--	--	--	--	--
Piute	300	--	--	--	--	--	--	--	--	--	--	--
Sevier	221	333	311	500	233	--	575	300	400	600	500	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	367	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>235</b>	<b>333</b>	<b>325</b>	<b>147</b>	<b>233</b>	<b>--</b>	<b>575</b>	<b>300</b>	<b>400</b>	<b>600</b>	<b>500</b>	<b>350</b>
<b>Northeastern Region</b>												
Daggett	--	--	--	--	--	500	--	--	240	--	475	--
Duchesne	--	367	--	333	600	124	67	300	450	--	700	--
Uintah	375	--	--	600	--	500	--	600	--	300	--	--
<b>REGIONAL TOTALS</b>	<b>375</b>	<b>367</b>	<b>--</b>	<b>400</b>	<b>600</b>	<b>195</b>	<b>67</b>	<b>343</b>	<b>300</b>	<b>300</b>	<b>520</b>	<b>327</b>
<b>Southeastern Region</b>												
Carbon	--	--	--	480	200	350	300	--	--	--	--	--
Emery	500	--	300	400	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>500</b>	<b>--</b>	<b>300</b>	<b>467</b>	<b>200</b>	<b>350</b>	<b>300</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>353</b>
<b>STATE TOTALS</b>	<b>308</b>	<b>385</b>	<b>297</b>	<b>267</b>	<b>241</b>	<b>244</b>	<b>298</b>	<b>345</b>	<b>398</b>	<b>294</b>	<b>311</b>	<b>308</b>

Table 3. Trend of ruffed grouse mean brood size, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	--	--	--	--	5.00	2.50	--	--	--	--	--	--
Cache	5.55	9.00	--	5.00	3.83	3.00	4.00	4.33	5.14	3.67	--	--
Davis	--	4.80	--	--	--	--	--	--	9.00	--	--	--
Morgan	6.75	--	--	4.00	--	5.00	--	1.00	4.89	6.00	--	--
Rich	--	3.75	6.00	--	4.75	3.00	--	--	--	--	--	--
Summit	6.00	6.50	5.00	5.00	3.00	4.00	4.75	4.00	5.00	4.00	2.00	--
Weber	8.00	--	4.50	--	--	--	4.00	--	5.00	5.00	4.00	--
<b>REGIONAL TOTALS</b>	6.09	5.08	5.00	4.54	4.00	3.08	4.25	3.88	5.20	4.33	3.33	4.55
<u>Central Region</u>												
Juab	4.33	--	3.00	4.00	5.00	2.00	--	--	--	--	--	--
Salt Lake	4.00	--	--	4.00	--	5.00	--	--	--	2.00	2.20	--
Sanpete	5.50	4.67	4.60	3.00	4.50	5.36	4.44	5.11	5.79	5.14	5.47	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	3.75	4.75	5.00	4.25	4.00	2.00	3.00	4.00	4.67	3.25	3.00	--
Wasatch	--	3.00	--	--	--	--	--	--	3.00	--	--	--
<b>REGIONAL TOTALS</b>	4.75	4.55	4.43	3.44	4.50	4.94	4.08	4.83	5.20	4.25	4.57	4.50
<u>Southern Region</u>												
Beaver	5.00	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	2.00	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	4.67	--	--	--	--	--	--	--	--	--	--	--
Piute	3.00	--	--	--	--	--	--	--	--	--	--	--
Sevier	3.83	4.29	4.00	5.00	2.33	--	5.75	3.00	4.80	6.00	5.00	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	5.50	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	4.08	4.29	4.33	4.40	2.33	--	5.75	3.00	4.80	6.00	5.00	4.33
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	5.00	--	--	4.00	--	4.75	--
Duchesne	--	3.67	--	3.33	6.00	3.50	2.00	4.50	4.50	--	7.00	--
Uintah	5.00	--	--	6.00	--	5.00	--	6.00	--	6.00	--	--
<b>REGIONAL TOTALS</b>	5.00	3.67	--	4.00	6.00	4.10	2.00	4.80	4.20	6.00	5.20	4.42
<u>Southeastern Region</u>												
Carbon	--	--	--	4.80	2.00	3.50	3.00	--	--	--	--	--
Emery	5.00	--	5.00	4.00	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	5.00	--	5.00	4.67	2.00	3.50	3.00	--	--	--	--	3.86
<b>STATE TOTALS</b>	5.16	4.61	4.58	4.09	3.87	4.12	4.26	4.46	5.06	4.52	4.57	4.47

Table 4. Trend of ruffed grouse observed per 100 hours, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	--	--	--	2	54	50	--	--	--	--	--	--
Cache	67	14	--	34	45	13	50	25	18	25	--	--
Davis	--	244	--	0	0	10	--	--	60	--	--	--
Morgan	128	--	--	136	0	33	--	8	149	20	--	--
Rich	--	61	140	--	--	27	--	--	--	--	--	--
Summit	108	100	62	185	46	100	144	61	600	21	--	--
Weber	73	--	--	--	--	0	111	--	16	17	31	--
<b>REGIONAL TOTALS</b>	<b>77</b>	<b>39</b>	<b>24</b>	<b>49</b>	<b>41</b>	<b>20</b>	<b>49</b>	<b>18</b>	<b>38</b>	<b>19</b>	<b>10</b>	<b>37</b>
<u>Central Region</u>												
Juab	142	--	33	250	27	40	--	--	--	--	--	--
Salt Lake	16	--	0	30	0	20	4	--	2	150	70	--
Sanpete	167	240	129	124	69	181	125	203	270	200	515	--
Tooele	--	--	0	0	0	0	0	--	--	--	--	--
Utah	40	37	23	73	32	19	25	30	39	37	14	--
Wasatch	0	50	--	--	0	0	--	--	48	3	--	--
<b>REGIONAL TOTALS</b>	<b>85</b>	<b>84</b>	<b>50</b>	<b>71</b>	<b>23</b>	<b>64</b>	<b>56</b>	<b>99</b>	<b>73</b>	<b>47</b>	<b>98</b>	<b>65</b>
<u>Southern Region</u>												
Beaver	250	--	--	0	--	--	--	--	--	--	--	--
Garfield	--	--	0	38	0	--	0	--	--	--	--	--
Iron	--	--	--	0	0	--	0	--	--	--	--	--
Kane	--	--	0	--	0	--	0	--	--	--	--	--
Millard	317	--	0	0	--	--	0	--	--	--	--	--
Piute	267	--	--	--	0	--	0	--	--	--	--	--
Sevier	28	22	10	8	2	--	12	2	15	3	2	--
Washington	--	--	--	0	0	--	0	--	--	--	--	--
Wayne	--	--	117	0	--	--	0	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>35</b>	<b>15</b>	<b>12</b>	<b>8</b>	<b>2</b>	<b>--</b>	<b>9</b>	<b>2</b>	<b>15</b>	<b>3</b>	<b>2</b>	<b>11</b>
<u>Northeastern Region</u>												
Daggett	0	--	0	0	0	20	0	--	85	--	164	--
Duchesne	0	28	0	30	11	47	9	46	48	--	12	--
Uintah	83	--	0	16	0	62	0	11	--	350	--	--
<b>REGIONAL TOTALS</b>	<b>83</b>	<b>10</b>	<b>0</b>	<b>20</b>	<b>5</b>	<b>44</b>	<b>4</b>	<b>21</b>	<b>26</b>	<b>350</b>	<b>26</b>	<b>56</b>
<u>Southeastern Region</u>												
Carbon	0	--	0	53	33	12	7	--	9	--	--	--
Emery	46	--	67	42	0	--	0	--	33	--	--	--
Grand	--	--	0	--	0	--	--	--	--	--	--	--
San Juan	--	--	0	0	0	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>46</b>	<b>--</b>	<b>28</b>	<b>26</b>	<b>11</b>	<b>7</b>	<b>3</b>	<b>--</b>	<b>12</b>	<b>--</b>	<b>--</b>	<b>19</b>
<b>STATE TOTALS</b>	<b>54</b>	<b>28</b>	<b>18</b>	<b>28</b>	<b>12</b>	<b>25</b>	<b>23</b>	<b>29</b>	<b>37</b>	<b>20</b>	<b>27</b>	<b>27</b>

Table 5. Blue grouse summer inventory summary, 1981.

Region and County	Distinct Broods		Mixed Yng & Adults		Mean Brood	Total Yng	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
<b>Northern Region</b>																
Box Elder	5	5	18	0	0	0	0	5	18	360	95	9	0	1	10	230
Cache	9	9	33	0	0	0	4	13	33	254	170	37	22	3	62	74
Davis	0	0	0	0	0	0	1	1	0	--	83	6	0	9	15	7
Morgan	1	1	2	0	0	0	0	1	2	200	15	2	8	0	10	30
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	9	9	35	0	0	0	9	9	35	389	50	11	0	4	15	293
Weber	7	7	25	4	17	17	8	19	42	221	275	22	3	10	35	174
<b>REGIONAL TOTALS</b>	<b>31</b>	<b>31</b>	<b>113</b>	<b>4</b>	<b>17</b>	<b>17</b>	<b>13</b>	<b>48</b>	<b>130</b>	<b>271</b>	<b>688</b>	<b>87</b>	<b>33</b>	<b>27</b>	<b>147</b>	<b>121</b>
<b>Central Region</b>																
Juab	3	3	12	0	0	0	1	4	12	300	180	14	8	0	22	73
Salt Lake	0	0	0	3	8	8	1	4	8	200	12	1	0	32	33	36
Sanpete	0	0	0	0	0	0	0	0	0	--	112	2	16	2	20	--
Tooele	5	5	16	2	6	6	9	16	22	138	110	5	0	9	14	271
Utah	1	1	7	0	0	0	7	8	7	88	244	29	0	0	29	52
Wasatch	0	0	0	0	0	0	0	0	0	--	300	24	0	5	29	--
<b>REGIONAL TOTALS</b>	<b>9</b>	<b>9</b>	<b>35</b>	<b>5</b>	<b>14</b>	<b>14</b>	<b>18</b>	<b>32</b>	<b>49</b>	<b>153</b>	<b>958</b>	<b>75</b>	<b>24</b>	<b>48</b>	<b>147</b>	<b>55</b>
<b>Southern Region</b>																
Beaver	1	1	4	0	0	0	1	2	4	200	110	7	0	6	13	46
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	0	0	0	0	0	0	0	0	0	--	105	6	0	1	7	--
Piute	6	6	28	2	3	3	--	8	31	387	80	7	0	0	7	557
Sevier	9	9	31	0	0	0	11	20	31	155	250	10	250	0	260	20
Washington	4	4	20	0	0	0	0	4	20	500	0	0	3	0	3	800
Wayne	0	0	0	0	0	0	0	0	0	--	30	3	2	0	5	--
<b>REGIONAL TOTALS</b>	<b>20</b>	<b>20</b>	<b>83</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>12</b>	<b>34</b>	<b>86</b>	<b>253</b>	<b>575</b>	<b>33</b>	<b>255</b>	<b>7</b>	<b>295</b>	<b>41</b>
<b>Northeastern Region</b>																
Daggett	11	11	49	8	35	35	0	19	84	442	120	5	1	8	14	736
Duchesne	10	10	36	0	0	0	4	14	36	257	480	48	15	4	67	75
Uintah	16	16	76	4	19	19	5	25	95	380	235	30	9	0	39	308
<b>REGIONAL TOTALS</b>	<b>37</b>	<b>37</b>	<b>161</b>	<b>12</b>	<b>54</b>	<b>54</b>	<b>9</b>	<b>58</b>	<b>215</b>	<b>371</b>	<b>835</b>	<b>83</b>	<b>25</b>	<b>12</b>	<b>120</b>	<b>228</b>
<b>Southeastern Region</b>																
Carbon	1	1	2	0	0	0	0	1	2	200	144	18	0	0	18	17
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	2	2	5	0	0	0	3	5	5	100	0	0	0	0	0	--
San Juan	2	2	6	3	12	12	1	6	18	300	40	4	0	7	11	218
<b>REGIONAL TOTALS</b>	<b>5</b>	<b>5</b>	<b>13</b>	<b>3</b>	<b>12</b>	<b>12</b>	<b>4</b>	<b>12</b>	<b>25</b>	<b>208</b>	<b>184</b>	<b>22</b>	<b>0</b>	<b>7</b>	<b>29</b>	<b>128</b>
<b>STATE TOTALS</b>	<b>102</b>	<b>102</b>	<b>405</b>	<b>26</b>	<b>100</b>	<b>100</b>	<b>56</b>	<b>184</b>	<b>505</b>	<b>274</b>	<b>3,240</b>	<b>300</b>	<b>337</b>	<b>101</b>	<b>738</b>	<b>93</b>

Table 6. Trend of blue grouse young per 100 adults, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	--	500	--	236	100	429	--	400	380	600	360	
Cache	245	288	192	357	356	331	100	322	167	83	254	
Davis	520	82	--	300	0	150	320	500	100	600	--	
Morgan	533	250	375	300	130	341	117	230	0	233	200	
Rich	--	300	--	--	167	500	--	--	--	300	--	
Summit	600	533	314	--	143	333	333	560	325	400	389	
Weber	557	68	700	625	0	400	400	425	280	425	221	
REGIONAL TOTALS	305	191	222	305	194	333	167	357	205	217	271	250
<u>Central Region</u>												
Juab	--	--	50	--	500	--	--	200	200	124	300	
Salt Lake	67	--	0	300	25	333	238	160	230	350	200	
Sanpete	425	156	300	--	--	325	260	89	275	--	--	
Tooele	--	--	143	179	86	227	82	108	225	141	138	
Utah	422	375	415	222	0	300	27	266	169	279	88	
Wasatch	450	600	--	333	400	400	--	800	214	--	--	
REGIONAL TOTALS	324	321	285	218	192	277	120	156	200	167	153	226
<u>Southern Region</u>												
Beaver	--	--	--	500	--	--	--	--	200	--	200	
Garfield	600	133	--	--	400	100	300	380	375	--	--	
Iron	267	--	--	150	--	--	--	200	233	340	--	
Kane	200	240	211	--	--	--	--	400	--	--	--	
Millard	280	67	--	450	--	--	700	567	475	--	--	
Piute	--	--	--	--	--	200	--	--	--	--	387	
Sevier	136	100	100	320	233	106	86	214	100	179	155	
Washington	--	271	533	350	--	500	--	600	400	--	500	
Wayne	--	--	--	400	--	275	567	--	--	--	--	
REGIONAL TOTALS	213	149	192	313	246	142	146	288	158	193	253	204
<u>Northeastern Region</u>												
Daggett	--	286	286	567	--	487	367	343	154	336	442	
Duchesne	400	275	600	300	350	431	380	567	220	409	257	
Uintah	167	557	500	250	300	525	350	500	460	354	380	
REGIONAL TOTALS	225	339	344	311	320	461	372	486	202	366	371	343
<u>Southeastern Region</u>												
Carbon	167	92	--	243	167	321	500	225	100	350	200	
Emery	300	--	667	--	--	--	300	--	--	--	--	
Grand	--	114	0	43	200	110	300	--	--	--	100	
San Juan	386	375	--	242	200	155	100	380	250	200	300	
REGIONAL TOTALS	310	216	333	188	189	209	269	255	140	275	208	238
STATE TOTALS	292	224	237	284	195	281	181	278	188	219	274	238

Table 7. Trend of blue grouse mean brood size, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<b>Northern Region</b>												
Box Elder	--	5.00	--	5.06	3.00	5.75	--	4.00	3.80	6.00	3.60	
Cache	5.18	5.50	4.66	4.95	5.30	4.48	3.40	4.46	2.50	3.75	3.67	
Davis	6.25	2.67	--	--	--	4.00	3.67	5.00	3.50	6.00	--	
Morgan	5.33	5.33	5.50	4.62	3.25	4.45	2.80	3.83	--	3.00	2.00	
Rich	--	4.50	--	--	5.00	5.00	--	--	--	3.00	--	
Summit	6.00	5.33	4.40	--	2.75	5.00	5.00	5.60	4.33	4.00	3.89	
Weber	6.50	4.75	7.00	6.25	--	6.00	4.00	4.25	3.50	4.25	3.57	
<b>REGIONAL TOTALS</b>	5.54	4.96	4.79	5.00	4.25	4.67	3.56	4.55	3.63	3.90	3.65	4.49
<b>Central Region</b>												
Juab	--	--	1.00	--	5.00	--	--	4.00	2.00	3.67	4.00	
Salt Lake	2.00	--	--	6.00	1.00	5.00	4.75	2.67	3.29	3.50	--	
Sanpete	4.25	2.80	3.00	--	--	3.25	4.33	4.00	2.75	--	--	
Tooele	--	--	6.00	4.40	3.50	3.45	2.50	4.40	4.20	3.58	3.20	
Utah	4.22	4.22	5.38	5.00	--	4.29	1.50	3.13	3.13	3.00	7.00	
Wasatch	4.50	6.00	--	5.00	4.00	4.00	--	8.00	5.00	--	--	
<b>REGIONAL TOTALS</b>	4.00	4.12	4.54	4.83	3.40	3.97	3.64	3.61	3.30	3.37	3.89	3.88
<b>Southern Region</b>												
Beaver	--	--	--	5.00	--	--	--	--	5.00	--	4.00	
Garfield	6.00	4.00	--	--	6.00	--	6.00	4.75	5.00	--	--	
Iron	8.00	--	--	3.00	--	--	--	2.00	3.50	4.25	--	
Kane	6.00	3.33	6.33	--	--	--	--	4.00	--	--	--	
Millard	4.67	2.00	--	4.50	--	--	7.00	5.67	6.33	--	--	
Piute	--	--	--	--	--	2.00	--	--	--	--	4.67	
Sevier	3.00	2.62	3.00	5.89	3.82	3.17	4.29	4.50	3.29	4.95	3.44	
Washington	--	4.00	5.33	3.50	--	5.00	--	6.00	4.00	--	5.00	
Wayne	--	--	--	4.00	--	5.50	6.00	--	--	--	--	
<b>REGIONAL TOTALS</b>	4.45	3.06	4.55	5.31	4.00	3.50	4.90	4.65	4.04	4.82	4.15	4.33
<b>Northeastern Region</b>												
Daggett	--	5.00	5.00	5.67	--	4.88	3.67	4.00	4.00	7.20	4.45	
Duchesne	4.00	4.71	6.00	4.22	7.00	4.60	4.22	5.30	3.00	5.00	3.60	
Uintah	2.50	6.50	5.00	5.00	4.50	5.25	3.50	5.00	5.75	3.70	4.75	
<b>REGIONAL TOTALS</b>	3.00	5.21	5.20	4.71	5.33	4.78	3.94	4.83	3.95	4.90	4.35	4.59
<b>Southeastern Region</b>												
Carbon	5.00	6.00	--	3.40	3.33	4.25	4.75	4.50	2.00	3.50	2.00	
Emery	3.00	--	6.67	--	--	--	3.00	--	--	--	--	
Grand	--	2.67	--	1.50	4.00	3.67	6.00	--	--	--	2.50	
San Juan	5.25	6.17	--	4.83	3.50	3.40	4.00	6.00	5.00	4.00	3.00	
<b>REGIONAL TOTALS</b>	4.82	5.50	6.67	3.77	3.57	3.88	4.57	5.40	3.50	3.67	2.60	4.54
<b>STATE TOTALS</b>	4.86	4.64	4.81	4.88	4.05	4.29	4.00	4.44	3.69	4.20	3.97	4.39

Table 8. Trend of blue grouse observed per 100 hours, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	--	35	0	273	46	132	--	39	800	58	230	
Cache	171	133	409	271	124	75	62	41	7	44	74	
Davis	194	125	--	80	10	52	84	188	140	92	7	
Morgan	76	125	173	400	35	417	173	127	--	86	30	
Rich	--	39	0	--	--	40	--	--	--	--	--	
Summit	18	127	138	8	83	93	81	400	850	18	293	
Weber	153	147	--	--	125	62	167	42	51	58	174	
REGIONAL TOTALS	135	111	266	274	80	94	87	65	30	57	121	120
<u>Central Region</u>												
Juab	0	--	25	0	27	0	--	86	38	336	73	
Salt Lake	20	--	20	27	14	98	112	111	70	450	36	
Sanpete	34	92	39	0	0	27	31	65	33	--	--	
Tooele	--	--	94	144	108	354	172	1,080	557	248	271	
Utah	94	92	172	64	118	54	23	96	176	104	52	
Wasatch	1,100	262	--	433	36	250	--	46	88	3	--	
REGIONAL TOTALS	51	98	95	57	29	91	56	113	109	122	55	82
<u>Southern Region</u>												
Beaver	--	--	--	300	--	--	--	--	107	--	46	
Garfield	45	10	0	25	56	16	53	86	61	--	--	
Iron	42	--	--	167	--	--	0	150	333	275	--	
Kane	51	--	76	--	0	--	0	250	--	--	--	
Millard	317	83	0	122	--	--	133	250	2,300	--	--	
Piute	--	--	--	--	0	75	0	--	--	--	557	
Sevier	16	23	7	40	21	34	28	38	46	68	20	
Washington	--	260	--	129	0	55	0	--	125	--	800	
Wayne	--	--	8	--	--	375	2,000	0	--	--	--	
REGIONAL TOTALS	29	37	18	47	21	40	35	56	61	74	41	42
<u>Northeastern Region</u>												
Daggett	0	146	45	182	0	157	88	100	420	600	736	
Duchesne	13	90	13	130	14	105	84	148	209	130	75	
Uintah	35	87	19	78	27	86	20	19	44	256	308	
REGIONAL TOTALS	18	104	27	112	15	112	63	83	150	220	228	90
<u>Southeastern Region</u>												
Carbon	80	258	0	44	35	77	44	46	19	35	17	
Emery	31	--	77	0	0	--	40	--	33	--	--	
Grand	13	103	19	25	33	68	62	6	--	--	--	
San Juan	178	238	0	158	53	108	24	99	54	46	218	
REGIONAL TOTALS	97	216	36	56	39	81	38	46	29	38	128	68
STATE TOTALS	71	95	66	91	33	81	52	106	68	93	93	76

Table 9. Summary of effort expended on forest grouse brood counts, 1981.

Region and County	Vehicle Miles Traveled	Hours Effort Expended			Total
		Vehicle	Horseback	Walking	
<u>Northern Region</u>					
Box Elder	95	9	0	1	10
Cache	170	37	22	3	62
Davis	83	6	0	9	15
Morgan	15	2	8	0	10
Rich	--	--	--	--	--
Summit	50	11	0	4	15
Weber	275	22	3	10	35
<b>REGIONAL TOTALS</b>	<b>688</b>	<b>87</b>	<b>33</b>	<b>27</b>	<b>147</b>
<u>Central Region</u>					
Juab	180	14	8	0	22
Salt Lake	12	1	0	32	33
Sanpete	112	2	16	2	20
Tooele	110	5	0	9	14
Utah	244	29	0	0	29
Wasatch	300	24	0	5	29
<b>REGIONAL TOTALS</b>	<b>958</b>	<b>75</b>	<b>24</b>	<b>48</b>	<b>147</b>
<u>Southern Region</u>					
Beaver	110	7	0	6	13
Garfield	--	--	--	--	--
Iron	--	--	--	--	--
Kane	--	--	--	--	--
Millard	105	6	0	1	7
Piute	80	7	0	0	7
Sevier	250	10	250	0	260
Washington	0	0	3	0	3
Wayne	30	3	2	0	5
<b>REGIONAL TOTALS</b>	<b>575</b>	<b>33</b>	<b>225</b>	<b>7</b>	<b>295</b>
<u>Northeastern Region</u>					
Daggett	120	5	1	8	14
Duchesne	480	48	15	4	67
Uintah	235	30	9	0	39
<b>REGIONAL TOTALS</b>	<b>835</b>	<b>83</b>	<b>25</b>	<b>12</b>	<b>120</b>
<u>Southeastern Region</u>					
Carbon	144	18	0	0	18
Emery	--	--	--	--	--
Grand	--	--	--	--	--
San Juan	40	4	0	7	11
<b>REGIONAL TOTALS</b>	<b>184</b>	<b>22</b>	<b>0</b>	<b>7</b>	<b>29</b>
<b>STATE TOTALS</b>	<b>3,240</b>	<b>300</b>	<b>337</b>	<b>101</b>	<b>738</b>



Table 10. Summary of forest grouse hunter success and distribution of harvest and hunting pressure by region and county, 1981.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged			Total	Birds per Hunter-day	% of Pressure	% of Harvest
			Ruffed	Blue	Unident.				
<b>Northern Region</b>									
Box Elder	29	913	276	934	21	1,231	1.35	2.66	4.41
Cache	128	6,156	1,465	3,779	127	5,371	0.87	17.95	19.25
Davis	32	1,061	340	361	0	701	0.66	3.09	2.51
Morgan	25	2,420	891	531	0	1,422	0.59	7.05	5.10
Rich	20	870	64	85	0	149	0.17	2.54	0.53
Summit	46	2,462	722	806	276	1,804	0.73	7.18	6.47
Weber	50	2,441	573	1,146	106	1,825	0.75	7.12	6.54
<b>REGIONAL TOTALS</b>	<b>330</b>	<b>16,325</b>	<b>4,331</b>	<b>7,642</b>	<b>530</b>	<b>12,503</b>	<b>0.77</b>	<b>47.59</b>	<b>44.82</b>
<b>Central Region</b>									
Juab	11	573	85	488	43	616	1.07	1.67	2.21
Salt Lake	23	785	128	106	21	255	0.32	2.29	0.91
Sanpete	32	1,083	170	573	191	934	0.86	3.16	3.35
Tooele	21	785	106	531	64	701	0.89	2.29	2.51
Utah	112	5,732	1,486	3,290	85	4,861	0.85	16.71	17.43
Wasatch	33	1,422	297	722	127	1,146	0.81	4.15	4.11
<b>REGIONAL TOTALS</b>	<b>232</b>	<b>10,381</b>	<b>2,272</b>	<b>5,710</b>	<b>531</b>	<b>3,513</b>	<b>0.82</b>	<b>30.26</b>	<b>30.52</b>
<b>Southern Region</b>									
Beaver	8	807	85	403	0	488	0.61	2.35	1.75
Garfield	11	276	0	297	0	297	1.08	0.80	1.07
Iron	14	382	21	149	191	361	0.94	1.11	1.29
Kane	8	297	0	234	0	234	0.79	0.87	0.84
Millard	23	552	170	403	0	573	1.04	1.61	2.05
Piute	9	318	361	42	43	446	1.40	0.93	1.60
Sevier	32	1,316	276	510	21	807	0.61	3.84	2.89
Washington	1	42	0	21	0	21	0.50	0.12	0.08
Wayne	2	106	0	42	0	42	0.40	0.31	0.15
<b>REGIONAL TOTALS</b>	<b>108</b>	<b>4,097</b>	<b>913</b>	<b>2,101</b>	<b>255</b>	<b>3,269</b>	<b>0.80</b>	<b>11.94</b>	<b>11.72</b>
<b>Northeastern Region</b>									
Daggett	11	828	255	509	0	764	0.92	2.41	2.74
Duchesne	9	254	191	42	85	318	1.25	0.74	1.14
Uintah	15	531	149	446	42	637	1.20	1.55	2.28
<b>REGIONAL TOTALS</b>	<b>35</b>	<b>1,613</b>	<b>595</b>	<b>997</b>	<b>127</b>	<b>1,719</b>	<b>1.07</b>	<b>4.70</b>	<b>6.16</b>
<b>Southeastern Region</b>									
Carbon	12	616	170	276	0	446	0.72	1.79	1.60
Emery	10	594	234	318	0	552	0.93	1.73	1.98
Grand	8	318	0	446	42	488	1.53	0.93	1.75
San Juan	3	297	0	297	0	297	1.00	0.87	1.07
<b>REGIONAL TOTALS</b>	<b>33</b>	<b>1,826</b>	<b>404</b>	<b>1,337</b>	<b>42</b>	<b>1,783</b>	<b>0.98</b>	<b>5.32</b>	<b>6.39</b>
Unknown Counties	3	64	42	65	0	107	1.67	0.19	0.38
Mixed Counties	0	0	0	0	0	0	0.00	0.00	0.00
<b>STATE TOTALS</b>	<b>741</b>	<b>34,305</b>	<b>8,557</b>	<b>17,852</b>	<b>1,485</b>	<b>27,894</b>	<b>0.81</b>	<b>100</b>	<b>100</b>

\*Total hunter trips from questionnaire returns.

Table 11. Summary of forest grouse bagged per hunter-day by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	0.84	1.23	0.98	0.79	1.20	1.35
Cache	1.25	0.92	1.40	1.24	0.96	0.87
Davis	0.84	0.90	1.34	0.94	0.74	0.66
Morgan	0.88	1.24	1.47	1.08	0.50	0.59
Rich	0.75	0.58	1.10	0.90	0.73	0.17
Summit	1.26	0.87	1.38	0.93	0.72	0.73
Weber	1.56	1.01	1.06	1.07	0.90	0.75
REGIONAL TOTALS	1.17	0.94	1.27	1.08	0.86	0.77
<u>Central Region</u>						
Juab	1.09	0.97	0.63	1.63	1.21	1.07
Salt Lake	1.08	0.64	1.59	1.17	1.12	0.32
Sanpete	0.98	0.73	0.82	0.96	0.73	0.36
Tooele	1.02	0.86	0.89	0.98	1.03	0.89
Utah	1.22	0.85	1.13	1.11	1.09	0.85
Wasatch	1.06	0.75	0.93	0.93	0.65	0.81
REGIONAL TOTALS	1.13	0.81	1.04	1.05	0.95	0.82
<u>Southern Region</u>						
Beaver	0.88	0.40	1.65	1.64	0.89	0.61
Garfield	0.68	0.25	0.57	0.64	0.91	1.08
Iron	1.48	0.91	0.98	0.78	0.73	0.94
Kane	0.50	0.50	0.57	0.86	1.00	0.79
Millard	1.55	1.35	1.21	1.44	1.56	1.04
Piute	1.17	0.65	1.93	0.74	1.10	1.40
Sevier	0.66	1.18	1.02	1.14	1.26	0.61
Washington	1.00	1.50	1.22	0.45	0.00	0.50
Wayne	1.50	1.00	1.00	0.95	0.67	0.40
REGIONAL TOTALS	0.98	1.01	1.06	1.11	1.16	0.80
<u>Northeastern Region</u>						
Daggett	1.12	0.41	0.79	0.69	0.55	0.92
Duchesne	1.02	1.03	0.96	0.99	0.71	1.25
Uintah	0.87	0.75	0.82	0.93	0.87	1.20
REGIONAL TOTALS	0.96	0.70	0.87	0.90	0.75	1.07
<u>Southeastern Region</u>						
Carbon	1.20	0.64	1.32	0.73	0.88	0.72
Emery	1.50	0.79	0.89	0.52	0.83	0.93
Grand	0.00	0.67	0.67	0.57	0.00	1.53
San Juan	0.00	0.40	0.43	0.40	1.00	1.00
REGIONAL TOTALS	1.18	0.67	0.96	0.61	0.87	0.98
Unknown Counties	1.06	1.74	0.74	1.00	0.00	1.67
Mixed Counties	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	1.12	0.87	1.12	1.04	0.91	0.81

Table 12. Percentage distribution of forest grouse harvest by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	2.17	4.22	2.99	1.63	4.73	4.41
Cache	26.39	20.01	20.93	21.94	18.23	19.25
Davis	2.93	3.51	3.56	4.04	3.47	2.51
Morgan	2.71	3.48	3.58	2.87	2.01	5.10
Rich	3.03	2.13	3.66	3.40	3.13	0.53
Summit	4.72	7.10	6.90	5.76	5.59	6.47
Weber	9.66	10.57	7.93	10.17	5.67	6.54
REGIONAL TOTALS	51.59	51.03	49.55	49.81	42.83	44.82
<u>Central Region</u>						
Juab	1.53	1.21	0.61	1.39	1.71	2.21
Salt Lake	2.52	1.91	2.97	3.21	3.43	0.91
Sanpete	5.39	3.58	4.17	6.27	3.80	3.35
Tooele	1.40	2.48	2.38	1.43	2.42	2.51
Utah	16.76	13.63	16.76	12.31	16.70	17.43
Wasatch	3.38	4.44	4.66	5.50	4.81	4.11
REGIONAL TOTALS	30.98	27.25	31.56	30.11	32.87	30.52
<u>Southern Region</u>						
Beaver	1.37	0.14	0.69	0.44	0.63	1.75
Garfield	0.41	0.07	0.42	0.34	0.37	1.07
Iron	1.27	2.06	1.06	0.51	1.12	1.29
Kane	0.06	0.07	0.20	0.15	0.37	0.84
Millard	1.63	0.82	0.71	3.33	2.91	2.05
Piute	0.45	0.53	0.71	0.56	0.82	1.60
Sevier	1.59	5.71	3.58	6.49	7.98	2.89
Washington	0.19	0.11	0.54	0.12	0.00	0.08
Wayne	0.29	0.11	0.10	0.44	0.15	0.15
REGIONAL TOTALS	7.27	9.62	8.00	12.38	14.35	11.72
<u>Northeastern Region</u>						
Daggett	0.57	1.17	0.76	0.75	0.86	2.74
Duchesne	1.56	2.13	2.36	2.36	2.16	1.14
Uintah	1.69	1.67	2.18	1.51	3.58	2.28
REGIONAL TOTALS	3.82	4.97	5.30	4.62	6.60	6.16
<u>Southeastern Region</u>						
Carbon	1.53	2.41	2.36	1.53	1.68	1.60
Emery	0.38	1.10	1.67	0.85	1.49	1.98
Grand	0.00	0.14	0.15	0.51	0.00	1.75
San Juan	0.00	0.07	0.37	0.10	0.19	1.07
REGIONAL TOTALS	1.91	3.73	4.54	2.99	3.35	6.39
Unknown Counties	4.43	3.41	1.06	0.10	0.00	0.38
Mixed Counties	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100

Table 13. Percentage distribution of forest grouse hunting pressure by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	2.90	3.00	3.44	2.16	3.60	2.66
Cache	23.79	18.99	16.79	18.41	17.24	17.95
Davis	3.91	3.40	2.97	4.46	4.28	3.09
Morgan	3.48	2.44	2.72	2.76	3.67	7.05
Rich	4.55	3.18	3.71	3.96	3.91	2.54
Summit	4.19	7.08	5.61	6.44	7.04	7.18
Weber	6.95	9.09	8.42	9.91	5.71	7.12
REGIONAL TOTALS	49.77	47.19	43.67	48.10	45.46	47.59
<u>Central Region</u>						
Juab	1.58	1.08	1.10	0.89	1.29	1.67
Salt Lake	2.62	2.60	2.09	2.87	2.79	2.29
Sanpete	6.20	4.27	5.70	6.82	4.76	3.16
Tooele	1.54	2.50	3.00	1.52	2.14	2.29
Utah	15.41	13.91	16.62	11.51	13.97	16.71
Wasatch	3.58	5.13	5.61	6.19	6.73	4.15
REGIONAL TOTALS	30.92	29.50	34.12	29.79	13.69	30.26
<u>Southern Region</u>						
Beaver	1.76	0.31	0.47	0.28	0.65	2.35
Garfield	0.68	0.25	0.83	0.56	0.37	0.80
Iron	0.97	1.98	1.21	0.68	1.39	1.11
Kane	0.14	0.12	0.39	0.18	0.34	0.87
Millard	1.18	0.53	0.66	2.41	1.70	1.61
Piute	0.43	0.71	0.41	0.79	0.68	0.93
Sevier	2.72	4.21	3.94	5.96	5.78	3.84
Washington	0.21	0.06	0.50	0.28	0.20	0.12
Wayne	0.21	0.09	0.11	0.48	0.20	0.31
REGIONAL TOTALS	8.31	8.26	8.50	11.61	11.32	11.94
<u>Northeastern Region</u>						
Daggett	0.57	2.47	1.07	1.14	1.43	2.41
Duchesne	1.72	1.79	2.75	2.48	2.79	0.74
Uintah	2.19	1.95	2.97	1.70	3.74	1.55
REGIONAL TOTALS	4.48	6.22	6.80	5.32	7.96	4.70
<u>Southeastern Region</u>						
Carbon	1.43	3.28	2.01	2.18	1.73	1.79
Emery	0.29	1.21	2.09	1.70	1.63	1.73
Grand	0.00	0.19	0.25	0.94	0.00	0.93
San Juan	0.11	0.15	0.96	0.25	0.17	0.87
REGIONAL TOTALS	1.83	4.82	5.31	5.07	3.54	5.32
Unknown Counties	4.69	4.02	1.60	0.10	0.03	0.19
Mixed Counties	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100

Table 14. Statewide summary of forest grouse harvest statistics, 1963-81.

Year	Total			Total Harvest			Hunter-days		Grouse/Hunter-day		Grouse Per Hunter					
	Hunters	Ruffed	Percent	Blue	Percent	Unknown	Percent	Total	Atfield	Ruffed	Blue	Total				
1963	7,425	5,470	(40.2)	7,372	(54.2)	766	(5.6)	13,603	12,313	0.44	0.66	1.11	0.74	0.99	1.85	
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	0.85	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	2.43	
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	0.85	1.72	
1970	13,363	15,759	(49.4)	13,749	(43.1)	2,793	(8.7)	31,898	26,619	0.59	0.51	1.20	1.22	1.06	2.50	
1971	16,640	20,648	(48.6)	19,221	(45.2)	2,393	(7.5)	31,901	29,100	0.54	0.47	1.10	1.18	1.03	2.39	
1972	17,588	7,153	(15.8)	36,846	(81.4)	1,233	(2.7)	42,518	38,940	0.53	0.49	1.09	1.24	1.16	2.56	
1973	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	
1974	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	
1975	19,188	15,766	(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	
1976	25,318	30,340	(37.2)	46,651	(57.2)	4,567	(5.6)	81,558	72,732	0.37	0.48	0.87	0.82	1.22	2.21	
1977	21,993	23,156	(38.7)	33,070	(55.3)	3,625	(6.0)	59,851	57,404	0.40	0.64	1.12	1.20	1.84	3.22	
1978	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	2.53	
1979	14,329	8,557	(30.7)	17,852	(64.0)	1,485	(5.3)	27,891	34,305	0.25	0.52	0.81	0.60	1.25	1.95	
1980																
1981																
TOTALS	289,517	272,317	(39.1)	376,417	(54.1)	47,180	(6.8)	695,914	679,394	0.40	0.55	1.02	0.94	1.30	2.40	
(1963-81)																
AVERAGES	15,066	14,653	(39.5)	19,920	(53.7)	2,539	(6.8)	37,112	35,833	0.41	0.56	1.04	0.97	1.32	2.46	
(1963-80)																

Table 15. Forest grouse field bag check summary, 1981.

Region and County	ALL HUNTS				COMPLETE HUNTS				Total Birds/100 Hr	Total Birds/100 Hr Hunter
	Total Parties	Total Hunters	Total Hours	Total Birds	Total Complete Hunts	Total Hunters	Total Hours	Total Birds		
<u>Northern Region</u>										
Box Elder	1	4	28	1	1	4	28	1	4	0.25
Cache	215	457	2,027	211	191	10	1,904	208	11	0.52
Davis	35	70	207	24	28	12	163	19	12	0.33
Morgan	--	--	--	--	--	--	--	--	--	--
Rich	37	82	310	25	37	8	310	25	8	0.30
Summit	--	--	--	--	--	--	--	--	--	--
Weber	62	124	481	33	54	7	410	29	7	0.27
<b>REGIONAL TOTALS</b>	<b>350</b>	<b>737</b>	<b>3,053</b>	<b>294</b>	<b>311</b>	<b>10</b>	<b>2,815</b>	<b>282</b>	<b>10</b>	<b>0.43</b>
<u>Central Region</u>										
Juab	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--
Sanpete	1	1	2	1	1	50	2	1	50	1.00
Tooele	--	--	--	--	--	--	--	--	--	--
Utah	143*	366	1,499	179	143*	12	1,499	179	12	0.55
Wasatch	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>144</b>	<b>327</b>	<b>1,501</b>	<b>180</b>	<b>144</b>	<b>12</b>	<b>1,501</b>	<b>180</b>	<b>12</b>	<b>0.55</b>
<u>Southern Region</u>										
Beaver	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--
Kane	2	5	12	2	2	17	12	2	16	0.40
Millard	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--
Sevier	7	20	131	8	4	6	76	7	9	0.64
Washington	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>9</b>	<b>25</b>	<b>143</b>	<b>10</b>	<b>6</b>	<b>7</b>	<b>88</b>	<b>9</b>	<b>10</b>	<b>0.56</b>
<u>Northeastern Region</u>										
Daggett	--	--	--	--	--	--	--	--	--	--
Duchesne	7	12	141	8	3	20	18	3	17	0.50
Uintah	23	72	245	79	16	32	143	49	34	1.69
<b>REGIONAL TOTALS</b>	<b>30</b>	<b>84</b>	<b>286</b>	<b>87</b>	<b>19</b>	<b>30</b>	<b>161</b>	<b>52</b>	<b>32</b>	<b>1.49</b>
<u>Southeastern Region</u>										
Carbon	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--
Grand	1	4	4	4	1	100	4	4	100	1.00
San Juan	1	1	2	1	1	50	2	1	50	1.00
<b>REGIONAL TOTALS</b>	<b>2</b>	<b>5</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>83</b>	<b>6</b>	<b>5</b>	<b>83</b>	<b>1.00</b>
<b>STATE TOTALS</b>	<b>535</b>	<b>1,178</b>	<b>4,989</b>	<b>576</b>	<b>482</b>	<b>12</b>	<b>4,671</b>	<b>528</b>	<b>11</b>	<b>0.51</b>

\*Estimated.

Table 16. Forest grouse hunter success trend determined by field bag checks, 1976-81.

Region and County	1976		1977		1978		1979		1980		1981	
	Birds/100 Hr Hunter	Birds/Hunter	Birds/100 Hr Hunter	Birds/Hunter	Birds/100 Hr Hunter	Birds/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	17	1.36	0	0.00	41	2.33	29	2.00	--	--	4	0.25
Cache	18	0.72	7	0.30	31	0.59	16	0.66	6	0.27	11	0.52
Davis	--	--	0	0.00	--	0.00	43	1.22	42	1.00	12	0.33
Morgan	19	1.25	--	--	--	--	--	--	--	--	--	--
Rich	7	0.29	4	0.16	15	0.62	10	0.32	2	0.07	8	0.30
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	17	0.77	8	0.23	20	0.79	8	0.36	6	0.24	7	0.27
<b>REGIONAL TOTALS</b>	<b>17</b>	<b>0.69</b>	<b>6</b>	<b>0.27</b>	<b>26</b>	<b>0.63</b>	<b>14</b>	<b>0.58</b>	<b>6</b>	<b>0.25</b>	<b>10</b>	<b>0.43</b>
<u>Central Region</u>												
Juab	22	0.88	3	0.10	33	0.80	--	--	81	1.86	--	--
Salt Lake	--	--	13	0.33	--	--	0	0.00	--	--	--	--
Sanpete	14	0.14	--	--	--	--	28	0.53	20	1.25	50	1.00
Tooele	34	1.00	--	--	22	0.40	--	--	--	--	--	--
Utah	14	0.53	8	0.25	17	0.65	17	0.64	11	0.51	12	0.55
Wasatch	20	0.33	--	--	7	0.00	100	1.00	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>15</b>	<b>0.56</b>	<b>8</b>	<b>0.24</b>	<b>17</b>	<b>0.65</b>	<b>89</b>	<b>0.63</b>	<b>12</b>	<b>0.56</b>	<b>12</b>	<b>0.55</b>
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	80	0.57	78	1.00	88	1.60	22	0.31	--	--	--	--
Iron	--	--	--	--	35	1.66	--	--	--	--	--	--
Kane	--	--	36	0.71	16	0.33	0	0.00	--	--	16	0.40
Millard	--	--	13	0.72	27	1.04	97	2.43	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	18	0.78	17	1.00	--	--	31	1.04	--	--	9	0.64
Washington	--	--	--	--	--	--	150	3.00	--	--	--	--
Wayne	4	0.33	--	--	--	--	17	0.50	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>18</b>	<b>0.68</b>	<b>20</b>	<b>0.81</b>	<b>37</b>	<b>1.22</b>	<b>39</b>	<b>1.05</b>	<b>--</b>	<b>--</b>	<b>10</b>	<b>0.56</b>
<u>Northeastern Region</u>												
Daggett	41	4.00	11	0.33	57	0.80	38	1.31	54	1.60	--	--
Duchesne	11	1.22	10	0.39	20	0.50	30	0.73	0	0.00	17	0.50
Uintah	60	1.31	8	0.27	14	0.29	70	0.97	--	--	34	1.69
<b>REGIONAL TOTALS</b>	<b>33</b>	<b>1.50</b>	<b>9</b>	<b>0.29</b>	<b>19</b>	<b>0.46</b>	<b>44</b>	<b>1.12</b>	<b>39</b>	<b>1.26</b>	<b>32</b>	<b>1.49</b>
<u>Southeastern Region</u>												
Carbon	46	1.00	100	1.00	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	25	1.33	--	--	--	--	0	0.00	--	--	100	1.00
San Juan	--	--	--	--	--	--	0	0.00	--	--	50	1.00
<b>REGIONAL TOTALS</b>	<b>39</b>	<b>1.08</b>	<b>100</b>	<b>1.00</b>	<b>--</b>	<b>--</b>	<b>0</b>	<b>0.00</b>	<b>--</b>	<b>--</b>	<b>83</b>	<b>1.00</b>
<b>STATE TOTALS</b>	<b>17</b>	<b>0.67</b>	<b>7</b>	<b>0.28</b>	<b>22</b>	<b>0.64</b>	<b>17</b>	<b>0.64</b>	<b>8</b>	<b>0.35</b>	<b>11</b>	<b>0.51</b>

Table 17. Sex and age composition of harvested blue grouse, 1981.

Region and County	Sample Size	Adults			Young			Young/ 100 Adults	Young/ 100 Hens
		M	F	Total	M	F	Total <sup>1</sup>		
<u>Northern Region</u>									
Box Elder	--	--	--	--	--	--	--	--	--
Cache <sup>2</sup>	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--
Rich <sup>2</sup>	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--
Weber <sup>2</sup>	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	221	59	58	117	--	--	104	90	179
<u>Central Region</u>									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--
Utah	180	54	40	94	44	42	86	91	215
Wasatch	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	180	54	40	94	44	42	86	93	215
<u>Southern Region</u>									
Beaver	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
<u>Northeastern Region</u>									
Daggett	11	1	2	3	6	2	8	267	400
Duchesne	5	0	1	1	--	--	4	400	400
Uintah	64	9	11	20	23	21	44	220	400
REGIONAL TOTALS	80	10	14	24	29	23	56	233	400
<u>Southeastern Region</u>									
Carbon	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
STATE TOTALS	481	123	112	235	73	65	246	105	220

<sup>1</sup>Includes unclassified juveniles.

<sup>2</sup>Data combined apply to one population of blue grouse.



# QUAIL

## SUMMARY

The 1981 breeding populations of California and Gambel's quail were slightly less than 1980 and average.

Production of both California and Gambel's quail increased from 1980 to well above average except in the Central Region. Quail observation trends were also above average in most areas of the state.

Harvest statistics, when compared to 1980, showed an increase in total hunters and total harvest, but hunter success (birds per hunter-day) remained below average statewide. However, a decrease of hunters and an increased harvest of Gambel's quail was reported in Washington County.



### Brood Counts

Results of the annual random brood counts for 1981 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. Survey results for 1981 compared to 1980 and the previous 10-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total quail observed	720	+31	-9
Young per 100 adults	311	+101	+39
Mean brood size	8.09	+79	+19
Quail observed per 100 hours	720	+33	+19
Total hours effort	100	-1	-25

Harvest statistics for 1980 indicated a decrease in the breeding populations of quail statewide; however, breeding populations of California quail increased slightly in the Northeastern and Southeastern regions. Gambel's quail in Washington County also showed a slight increase in breeding population.

Gambel's quail call counts on the west slope of Beaver Dam Mountains were discontinued in 1980.

Brood counts indicated production of both California and Gambel's quail increased significantly from 1980 and was well above average.

### Harvest

Results of the annual hunter questionnaire for 1981 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 1981 season to 1980 and the previous 22-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Quail hunters	4,946	+19	-29
Quail harvested	13,586	+16	-32
Hunter-days afield	12,843	+23	-26
Quail per hunter-day	1.06	-5	0
Quail per hunter	2.75	-2	-3

Harvest statistics for 1981 increased 16 percent from 1980 and were still below average.

Hunter success and total harvest for Washington County (Gambel's quail) increased from 1980, but hunter-days afield decreased 21 percent. About 41 percent of the statewide harvest of quail was taken in Washington County during 1981 compared to 44 percent in 1980 and nearly 25 percent in 1979.

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

Gambel's Quail Studies

Annual call count surveys and long period waterhole counts have been conducted on the west slopes of the Beaver Dam Mountains since 1962; however, call counts were discontinued in 1980.

Waterhole counts totaled 62 birds during 1981 compared to 124 during 1980 and 330 during 1979.

Vegetative studies were discontinued in 1977.

Quail bagged per hunter and per hunter-day

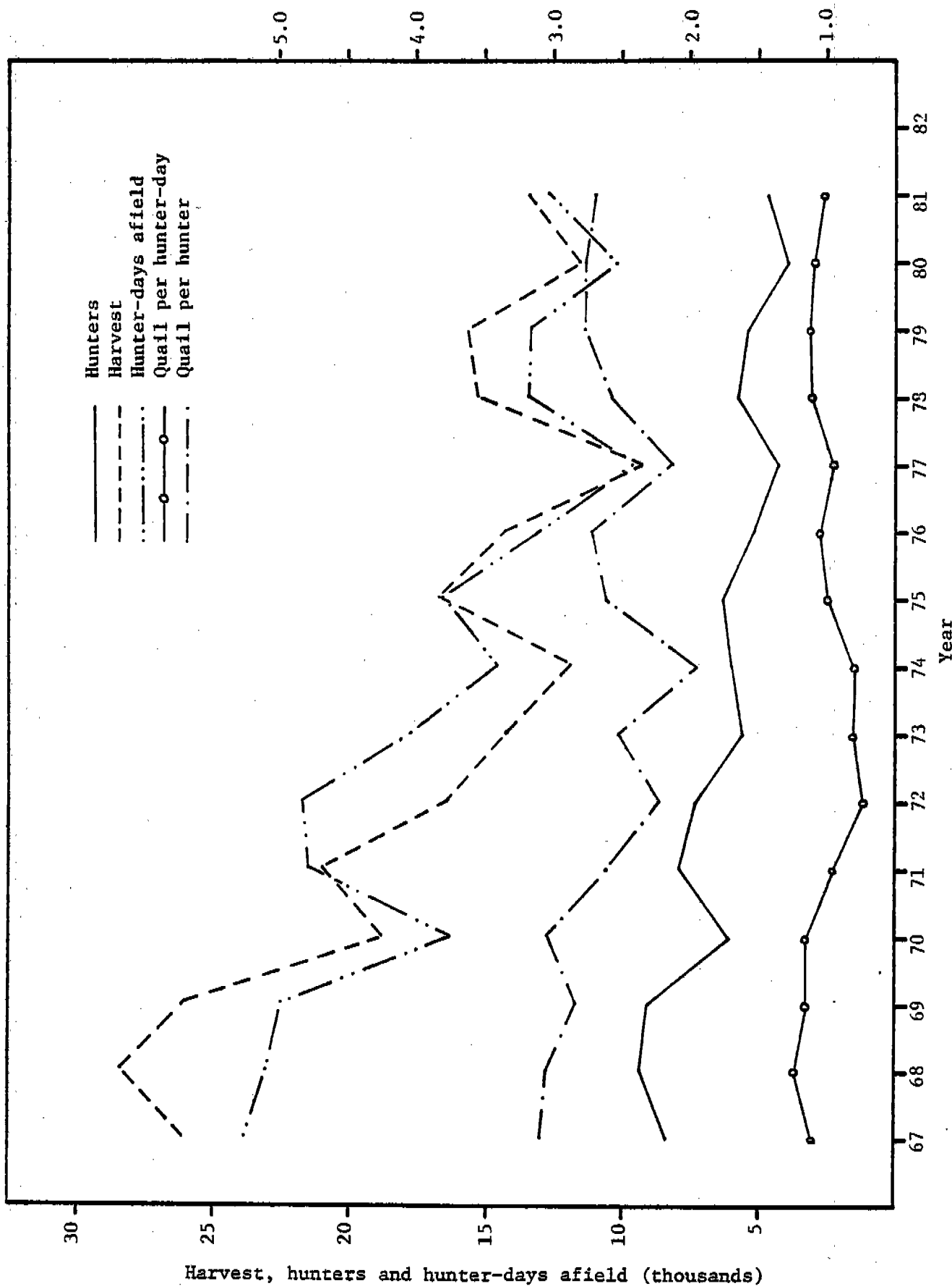


Figure 1. Statewide trend of quail harvest statistics.

Table 1. Quail summer inventory summary, 1981.

Region and County	Distinct Broods		Mixed Yng		Mean Brood	Total Yng	Adults w/o Yng	Total Adults	Total Yng	Young/100 Ad Miles	Hours of Effort			Birds/100 Hr		
	#	Ad	Yng	Ad							Yng	Veh. Miles	Horse		Walk	Total
<b>Northern Region</b>																
Box Elder	4	8	44	0	11.00	0	2	10	44	440	1	0	2	3	1800	
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Davis	3	4	4	3	1.33	7	19	31	11	35	4	0	4	8	525	
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Weber	0	0	0	0	--	0	2	2	0	--	0	0	0	0	--	
<b>REGIONAL TOTALS</b>	<b>7</b>	<b>12</b>	<b>48</b>	<b>3</b>	<b>6.85</b>	<b>7</b>	<b>23</b>	<b>43</b>	<b>55</b>	<b>128</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>11</b>	<b>891</b>	
<b>Central Region</b>																
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Salt Lake	0	0	0	3	--	10	12	15	10	67	3	0	1	4	63	
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Utah	1	1	3	0	3.00	0	2	3	3	100	8	0	0	8	75	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>3.00</b>	<b>10</b>	<b>14</b>	<b>18</b>	<b>13</b>	<b>72</b>	<b>11</b>	<b>0</b>	<b>1</b>	<b>12</b>	<b>258</b>	
<b>Southern Region</b>																
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Millard	28	28	239	11	8.54	58	13	55	297	519	9	0	0	9	3911	
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Washington	7	12	45	7	6.42	16	8	27	61	226	20	0	12	32	275	
Wayne	2	2	11	0	5.50	0	0	2	11	530	2	0	--	2	650	
<b>REGIONAL TOTALS</b>	<b>37</b>	<b>42</b>	<b>295</b>	<b>21</b>	<b>7.97</b>	<b>74</b>	<b>21</b>	<b>84</b>	<b>369</b>	<b>459</b>	<b>31</b>	<b>0</b>	<b>12</b>	<b>43</b>	<b>1,053</b>	
<b>Northeastern Region</b>																
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	2	3	18	3	9.00	17	0	6	35	583	18	0	1	19	205	
Uintah	5	7	64	0	12.80	0	14	21	64	305	10	0	2	12	708	
<b>REGIONAL TOTALS</b>	<b>7</b>	<b>10</b>	<b>82</b>	<b>3</b>	<b>11.71</b>	<b>17</b>	<b>14</b>	<b>27</b>	<b>99</b>	<b>367</b>	<b>28</b>	<b>0</b>	<b>3</b>	<b>31</b>	<b>406</b>	
<b>Southeastern Region</b>																
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Grand	2	2	9	0	4.50	0	1	3	9	300	3	--	--	3	400	
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>2</b>	<b>2</b>	<b>9</b>	<b>0</b>	<b>4.50</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>9</b>	<b>300</b>	<b>3</b>	<b>--</b>	<b>--</b>	<b>3</b>	<b>400</b>	
<b>STATE TOTALS</b>	<b>54</b>	<b>67</b>	<b>437</b>	<b>33</b>	<b>8.09</b>	<b>108</b>	<b>73</b>	<b>175</b>	<b>515</b>	<b>311</b>	<b>78</b>	<b>0</b>	<b>22</b>	<b>100</b>	<b>720</b>	

Table 2. Trend of quail young per 100 adults, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	--	--	250	--	--	--	--	--	--	--	440	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	314	--	--	--	--	--	--	--	196	94	35	--
Morgan	300	575	400	640	--	300	--	--	500	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	255	111	50	--	217	0	133	--	233	--	--	--
<b>REGIONAL TOTALS</b>	<b>290</b>	<b>254</b>	<b>230</b>	<b>640</b>	<b>217</b>	<b>180</b>	<b>133</b>	<b>--</b>	<b>209</b>	<b>94</b>	<b>128</b>	<b>250</b>
<u>Central Region</u>												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	240	114	222	175	154	97	86	77	256	400	67	--
Sanpete	440	500	174	175	300	580	230	300	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	220	275	241	250	229	64	80	44	240	714	100	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>267</b>	<b>143</b>	<b>222</b>	<b>200</b>	<b>188</b>	<b>108</b>	<b>95</b>	<b>127</b>	<b>245</b>	<b>656</b>	<b>72</b>	<b>225</b>
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
*Kane	160	--	--	--	--	--	--	--	--	--	--	--
Millard	233	117	0	113	50	146	98	47	204	156	540	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	700	--	--	--
Washington	320	57	--	273	580	199	149	555	301	93	226	--
Wayne	0	--	--	86	--	244	238	1,250	--	--	550	--
<b>REGIONAL TOTALS</b>	<b>270</b>	<b>75</b>	<b>0</b>	<b>171</b>	<b>429</b>	<b>190</b>	<b>146</b>	<b>317</b>	<b>283</b>	<b>114</b>	<b>439</b>	<b>222</b>
<u>Northeastern Region</u>												
Daggett	267	--	0	525	450	600	0	--	--	--	--	--
Duchesne	--	--	--	333	314	0	129	190	340	114	583	--
Uintah	217	165	700	438	475	323	383	800	653	338	305	--
<b>REGIONAL TOTALS</b>	<b>243</b>	<b>165</b>	<b>350</b>	<b>431</b>	<b>411</b>	<b>265</b>	<b>122</b>	<b>336</b>	<b>517</b>	<b>282</b>	<b>367</b>	<b>312</b>
<u>Southeastern Region</u>												
Carbon	125	--	533	--	--	450	--	650	--	--	--	--
Emery	50	438	--	109	0	--	0	19	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	300	--
San Juan	--	--	--	--	--	--	41	--	40	--	--	--
<b>REGIONAL TOTALS</b>	<b>100</b>	<b>438</b>	<b>533</b>	<b>109</b>	<b>0</b>	<b>450</b>	<b>33</b>	<b>89</b>	<b>40</b>	<b>--</b>	<b>300</b>	<b>225</b>
<b>STATE TOTALS</b>	<b>225</b>	<b>171</b>	<b>216</b>	<b>248</b>	<b>360</b>	<b>163</b>	<b>112</b>	<b>272</b>	<b>285</b>	<b>155</b>	<b>311</b>	<b>224</b>

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

Table 3. Trend of quail mean brood size from 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<b>Northern Region</b>												
Box Elder	--	--	5.00	--	--	--	--	--	--	--	11.00	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	11.00	--	--	--	--	--	--	6.75	5.00	1.33	--	--
Morgan	12.00	11.50	8.00	9.00	--	--	--	5.00	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	9.33	10.00	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	10.50	11.00	7.00	9.00	--	--	--	6.40	5.00	6.85	8.15	--
<b>Central Region</b>												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	7.00	8.00	7.50	5.00	6.80	7.00	6.40	2.00	4.60	4.00	--	--
Sanpete	5.70	5.40	5.60	4.00	6.00	5.80	4.33	4.75	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	7.43	7.17	7.36	6.67	7.00	2.50	4.00	4.00	4.00	5.00	3.00	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	6.50	7.18	6.95	5.29	6.56	5.64	5.78	3.44	4.43	4.50	3.00	5.63
<b>Southern Region</b>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
*Kane	8.00	--	--	--	--	--	--	--	--	--	--	--
Millard	8.00	7.00	--	7.00	8.00	10.20	6.67	6.25	11.25	5.63	8.54	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	7.00	--	--	--
*Washington	6.62	2.67	--	5.17	10.84	6.08	7.83	11.80	8.51	5.22	6.42	--
*Wayne	--	--	--	9.00	--	9.00	13.00	--	--	--	5.50	--
<b>REGIONAL TOTALS</b>	7.21	3.75	--	6.30	10.63	7.40	8.07	10.21	8.86	5.45	7.97	7.54
<b>Northeastern Region</b>												
Daggett	5.45	--	--	5.25	4.50	6.00	--	--	--	--	--	--
Duchesne	--	--	--	5.00	--	--	3.43	6.86	6.00	4.00	9.00	--
Uintah	5.33	5.92	7.00	11.00	10.00	3.55	7.67	8.00	6.34	3.55	12.80	--
<b>REGIONAL TOTALS</b>	5.41	5.92	7.00	6.73	6.86	3.67	4.70	7.53	6.17	3.59	11.71	5.76
<b>Southeastern Region</b>												
Carbon	--	--	8.00	--	--	9.00	--	--	--	--	--	--
Emery	2.00	9.86	--	5.00	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	4.50	--
San Juan	--	--	--	--	--	4.50	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	2.00	9.86	8.00	5.00	--	9.00	4.50	--	--	--	4.50	6.39
<b>STATE TOTALS</b>	6.58	7.21	7.04	6.20	9.16	5.58	6.25	7.55	8.08	4.52	8.09	6.82

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

Table 4. Trend of quail observed per 100 hours, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	--	--	175	--	--	--	--	--	--	--	1,800	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	829	--	--	--	--	--	--	956	--	729	525	--
Morgan	400	1,350	--	925	--	1,200	--	600	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	300	271	100	--	238	22	350	--	1,000	--	--	--
<b>REGIONAL TOTALS</b>	<b>471</b>	<b>511</b>	<b>330</b>	<b>925</b>	<b>238</b>	<b>140</b>	<b>350</b>	<b>927</b>	<b>729</b>	<b>891</b>	<b>513</b>	
<u>Central Region</u>												
Juab	--	--	--	--	--	0	--	--	--	--	--	--
Salt Lake	1,133	2,706	414	550	592	2,838	2,092	575	1,067	167	63	--
Sanpete	982	771	525	138	480	262	236	400	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	988	1,071	1,194	400	383	512	90	217	1,700	900	75	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>1,030</b>	<b>1,873</b>	<b>808</b>	<b>267</b>	<b>513</b>	<b>1,041</b>	<b>805</b>	<b>378</b>	<b>1,429</b>	<b>296</b>	<b>258</b>	<b>844</b>
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
*Kane	578	--	--	--	--	--	--	--	--	--	--	--
Millard	3,000	118	125	1,067	1,600	2,867	1,088	867	1,340	1,536	3,911	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	50	800	--	--	--
*Washington	600	122	--	194	1,143	632	596	750	2,741	675	275	--
*Wayne	33	--	--	300	14	517	645	333	--	--	650	--
<b>REGIONAL TOTALS</b>	<b>708</b>	<b>90</b>	<b>125</b>	<b>254</b>	<b>917</b>	<b>729</b>	<b>702</b>	<b>667</b>	<b>1,951</b>	<b>867</b>	<b>1,053</b>	<b>701</b>
<u>Northeastern Region</u>												
Daggett	1,900	--	18	208	157	41	--	--	--	--	--	--
Duchesne	0	--	0	325	153	43	240	310	209	79	205	--
Uintah	1,120	1,005	533	1,950	460	715	483	563	890	613	708	--
<b>REGIONAL TOTALS</b>	<b>769</b>	<b>303</b>	<b>47</b>	<b>739</b>	<b>226</b>	<b>241</b>	<b>350</b>	<b>398</b>	<b>443</b>	<b>314</b>	<b>406</b>	<b>383</b>
<u>Southeastern Region</u>												
Carbon	300	--	--	0	--	220	--	1,500	--	--	--	--
Emery	83	1,950	0	343	17	--	67	950	--	--	400	--
Grand	--	--	--	0	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	0	238	0	127	--	--	--
<b>REGIONAL TOTALS</b>	<b>181</b>	<b>1,950</b>	<b>112</b>	<b>343</b>	<b>17</b>	<b>110</b>	<b>206</b>	<b>425</b>	<b>127</b>	<b>--</b>	<b>400</b>	<b>386</b>
<b>STATE TOTALS</b>	<b>728</b>	<b>664</b>	<b>336</b>	<b>364</b>	<b>549</b>	<b>571</b>	<b>588</b>	<b>530</b>	<b>1,193</b>	<b>541</b>	<b>720</b>	<b>606</b>

\*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, 1981.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	4	573	43	0.07	4.46	0.31
Cache	1	21	0	0.00	0.17	0.00
Davis	17	764	743	0.97	5.95	5.47
Morgan	2	106	42	0.40	0.38	0.31
Rich	0	0	0	0.00	0.00	0.00
Summit	0	0	0	0.00	0.00	0.00
Weber	10	510	340	0.67	3.97	2.50
<b>REGIONAL TOTALS</b>	<b>34</b>	<b>1,974</b>	<b>1,168</b>	<b>0.59</b>	<b>15.37</b>	<b>8.59</b>
<u>Central Region</u>						
Juab	2	212	0	0.00	1.65	0.00
Salt Lake	14	552	488	0.38	4.30	3.59
Sanpete	0	0	0	0.00	0.00	0.00
Tooele	6	212	64	0.30	1.65	0.47
Utah	67	3,269	2,738	0.84	25.45	20.16
Wasatch	2	64	106	1.67	0.50	0.78
<b>REGIONAL TOTALS</b>	<b>91</b>	<b>4,309</b>	<b>3,396</b>	<b>0.79</b>	<b>33.55</b>	<b>25.00</b>
<u>Southern Region</u>						
Beaver	1	21	42	2.00	0.17	0.31
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	16	913	1,061	1.16	7.11	7.81
Piute	1	21	42	2.00	0.17	0.31
Sevier	1	21	21	1.00	0.17	0.16
Washington	44	2,781	5,541	1.99	21.65	40.78
Wayne	1	106	127	1.20	0.83	0.94
<b>REGIONAL TOTALS</b>	<b>64</b>	<b>3,864</b>	<b>6,835</b>	<b>1.77</b>	<b>30.08</b>	<b>50.31</b>
<u>Northeastern Region</u>						
Daggett	0	0	0	0.00	0.00	0.00
Duchesne	13	573	616	1.07	4.46	4.53
Uintah	20	1,295	955	0.74	10.08	7.03
<b>REGIONAL TOTALS</b>	<b>33</b>	<b>1,868</b>	<b>1,571</b>	<b>0.34</b>	<b>14.55</b>	<b>11.56</b>
<u>Southeastern Region</u>						
Carbon	11	616	425	0.69	4.79	3.13
Emery	6	170	127	0.75	1.32	0.94
Grand	0	0	0	0.00	0.00	0.00
San Juan	1	21	64	3.00	0.17	0.47
<b>REGIONAL TOTALS</b>	<b>18</b>	<b>807</b>	<b>616</b>	<b>0.76</b>	<b>6.28</b>	<b>4.53</b>
Unknown counties	1	21	0	0.00	0.17	0.00
Mixed counties	0	0	0	0.00	0.00	0.00
<b>STATE TOTALS</b>	<b>241</b>	<b>12,843</b>	<b>13,586</b>	<b>1.06</b>	<b>100</b>	<b>100</b>

\*Total hunter-trips from questionnaire returns.

Table 6. Summary of quail bagged per hunter-day by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	0.18	1.15	0.88	0.43	0.60	0.07
Cache	0.67	1.00	0.24	--	0.50	0.00
Davis	0.70	0.80	1.16	0.96	0.80	0.97
Morgan	0.80	1.20	0.80	0.95	0.00	0.40
Rich	0.00	0.00	0.00	0.00	0.00	0.00
Summit	0.17	1.00	1.67	2.37	2.50	0.00
Weber	0.52	0.63	0.78	0.89	0.88	0.67
REGIONAL TOTALS	0.62	0.77	0.92	0.89	0.77	0.59
<u>Central Region</u>						
Juab	0.00	0.00	3.00	3.00	2.75	0.00
Salt Lake	0.86	1.11	0.90	1.48	1.54	0.88
Sanpete	0.13	1.50	0.00	0.90	0.00	0.00
Tooele	0.00	1.50	0.00	0.00	0.00	0.30
Utah	0.88	0.84	0.91	1.14	1.31	0.84
Wasatch	0.00	0.00	4.00	--	0.00	1.67
REGIONAL TOTALS	0.82	0.95	0.93	1.23	1.37	0.79
<u>Southern Region</u>						
Beaver	0.43	0.00	0.00	0.00	0.00	2.00
Garfield	0.00	0.00	0.00	2.00	0.00	0.00
Iron	1.40	0.00	0.00	0.00	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	1.16
Millard	1.53	0.13	0.44	--	1.03	1.16
Piute	0.00	4.00	0.00	0.00	0.00	2.00
Sevier	0.33	0.00	0.00	0.63	0.00	2.00
Washington	2.22	1.63	2.42	2.04	1.45	1.99
Wayne	2.00	0.36	0.86	2.62	0.00	1.20
REGIONAL TOTALS	2.01	1.43	1.82	1.96	1.43	1.77
<u>Northeastern Region</u>						
Daggett	0.00	0.00	1.00	0.00	0.00	0.00
Duchesne	1.94	1.09	1.37	0.77	0.74	1.07
Uintah	0.70	0.76	1.39	0.83	0.84	0.74
REGIONAL TOTALS	1.07	0.89	1.38	0.80	0.81	0.84
<u>Southeastern Region</u>						
Carbon	0.30	0.78	0.63	0.46	0.82	0.69
Emery	0.33	0.52	1.17	0.45	0.55	0.75
Grand	0.00	0.00	0.00	0.00	0.00	0.00
San Juan	0.00	2.00	0.00	0.00	0.00	3.00
REGIONAL TOTALS	0.72	0.73	0.77	0.42	0.60	0.76
Unknown counties	0.89	1.47	1.88	1.16	0.00	0.00
Mixed counties	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	1.09	0.98	1.13	1.17	1.12	1.06

Table 7. Percentage distribution of quail harvest by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	0.28	2.38	2.84	1.66	1.74	0.31
Cache	0.84	0.63	0.52	--	0.15	0.00
Davis	9.93	8.10	11.11	8.74	7.98	5.47
Morgan	1.68	0.95	1.55	1.93	0.00	0.31
Rich	0.00	0.00	0.00	0.00	0.00	0.00
Summit	0.14	0.32	0.65	1.75	0.73	0.00
Weber	3.22	6.67	4.65	4.69	6.10	2.50
REGIONAL TOTALS	16.08	19.05	21.32	18.77	16.69	8.59
<u>Central Region</u>						
Juab	0.00	0.00	0.78	0.55	1.60	0.00
Salt Lake	3.36	10.00	4.78	11.59	3.37	3.50
Sanpete	0.14	0.48	0.00	0.33	0.00	0.00
Tooele	0.00	0.48	0.00	0.00	0.00	0.47
Utah	12.73	13.81	23.51	21.34	17.35	20.16
Wasatch	0.00	0.00	1.03	--	0.00	0.73
REGIONAL TOTALS	16.22	24.76	30.10	34.31	24.32	25.00
<u>Southern Region</u>						
Beaver	0.42	0.00	0.00	0.00	0.00	0.31
Garfield	0.00	0.00	0.00	0.18	0.00	0.00
Iron	0.98	0.00	0.00	0.00	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00
Millard	3.64	0.16	0.52	--	1.39	7.81
Piute	0.00	1.27	0.00	0.00	0.00	0.31
Sevier	0.14	0.00	0.00	0.46	0.00	0.15
Washington	40.14	26.67	18.48	25.43	43.83	40.73
Wayne	1.68	0.95	0.73	1.93	0.00	0.34
REGIONAL TOTALS	46.99	29.05	19.77	23.06	45.72	50.51
<u>Northeastern Region</u>						
Daggett	0.00	0.00	0.13	0.00	0.00	0.00
Duchesne	4.90	7.94	6.20	3.68	2.90	4.53
Uintah	4.20	8.10	13.35	5.11	6.32	7.05
REGIONAL TOTALS	9.09	16.03	24.33	10.02	9.72	11.56
<u>Southeastern Region</u>						
Carbon	3.36	4.60	1.29	1.20	1.31	3.13
Emery	0.28	1.90	0.90	0.46	1.74	0.34
Grand	0.00	0.00	0.00	0.00	0.00	0.00
San Juan	0.00	0.63	0.00	0.00	0.00	0.47
REGIONAL TOTALS	3.64	7.14	2.20	1.66	3.05	4.53
Unknown counties	7.97	3.97	1.94	8.18	0.00	0.00
Mixed counties	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100

Table 8. Percentage distribution of quail hunting pressure by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	1.68	2.03	3.67	4.51	3.26	4.46
Cache	1.37	0.62	2.49	--	0.33	0.17
Davis	15.40	10.00	10.85	10.63	11.26	5.95
Morgan	2.29	0.78	2.20	2.36	1.47	0.83
Rich	0.00	0.00	0.00	0.11	0.00	0.00
Summit	0.91	0.31	0.44	0.86	0.33	0.00
Weber	6.71	10.47	6.74	6.12	7.83	3.97
REGIONAL TOTALS	28.35	24.22	26.39	24.59	24.47	15.37
<u>Central Region</u>						
Juab	0.15	0.16	0.29	0.21	0.65	1.65
Salt Lake	4.27	8.91	6.01	9.13	3.92	4.30
Sanpete	1.22	0.31	0.00	1.08	0.00	0.00
Tooele	0.15	0.31	0.59	0.32	0.16	1.65
Utah	15.85	16.09	29.47	21.91	15.33	25.45
Wasatch	0.00	0.00	0.29	--	0.33	0.50
REGIONAL TOTALS	21.65	25.78	36.66	32.66	20.39	33.55
<u>Southern Region</u>						
Beaver	1.07	0.00	0.00	0.21	0.00	0.17
Garfield	0.00	0.00	0.00	0.11	0.00	0.00
Iron	0.76	0.16	0.44	0.00	0.00	0.00
Kane	0.00	0.00	0.29	0.00	0.00	0.00
Millard	2.59	1.25	1.32	--	1.96	7.11
Piute	0.00	0.31	0.15	0.11	0.00	0.17
Sevier	0.46	1.09	0.44	0.86	0.00	0.17
Washington	19.66	16.09	8.65	14.61	33.93	21.65
Wayne	0.91	1.09	1.03	0.86	0.00	0.83
REGIONAL TOTALS	25.46	20.00	12.32	16.75	35.89	30.08
<u>Northeastern Region</u>						
Daggett	0.00	0.00	0.15	0.00	0.00	0.00
Duchesne	2.74	7.19	5.13	5.59	4.40	4.46
Uintah	6.55	10.47	14.96	7.52	9.14	10.08
REGIONAL TOTALS	9.30	17.66	20.23	13.10	13.54	14.55
<u>Southeastern Region</u>						
Carbon	4.57	5.78	2.35	3.01	1.79	4.79
Emery	0.91	3.59	0.88	1.18	3.59	1.32
Grand	0.00	0.00	0.00	0.43	0.00	0.00
San Juan	0.00	0.31	0.00	0.00	0.33	0.17
REGIONAL TOTALS	5.49	9.59	3.23	4.62	5.71	6.28
Unknown counties	9.76	2.66	1.17	8.27	0.00	0.17
Mixed counties	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100

Table 9. Statewide summary of quail harvest statistics, 1951-1981.

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
TOTALS (1959-81)	158,695	450,805	394,618	1.14	2.84
AVERAGES (1959-80)	6,989	19,874	17,353	1.15	2.84

Table 10. Gambel's quail call count trend on the west slope of the Beaver Dam Mountains, Washington County, 1971-80.

Index	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980*
Mean calls per station	1.57	0.36	0.06	0.00	2.55	0.76	0.25	0.97	5.20	--*
Mean quail calling per station	0.37	0.11	0.03	0.00	0.40	0.13	0.03	0.19	0.53	--*
Mean total calls route	23.50	5.30	1.00	0.00	38.20	11.40	3.75	14.60	78.00	--*
Mean total quail calling route	5.50	1.70	0.40	0.00	6.00	2.00	0.50	2.80	8.00	--*

\*Discontinued.

Table 11. Gambel's quail long period waterhole count trend on the west slope of the Beaver Dam Mountains, Washington County, 1971-81.

Index	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Total young	33	0	0	24	145	61	--	67	253	72	37
Total adults	8	0	0	6	20	53	--	29	77	52	25
Total quail	41	0	0	30	165	114	17	86	330	124	62
Young per 100 adults	412	--	--	400	725	115	--	353	329	138	148

# HUNGARIAN PARTRIDGE

## SUMMARY

Harvest data for 1980 indicated that 1981 breeding population densities were greater than 1980. Limited brood data indicated above average Hun densities for 1981.

The 1981 hunt indicated similar hunting pressure on Huns when compared to 1980. While the number of hunters and Huns harvested increased in 1981, the hunter-days afield decreased 2 percent. However, total hunters, days afield and harvest were below the long-term average. Hunter success was equal to the long-term average.



### Brood Counts

Results of the annual random brood counts for 1981 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 1981 compared to 1980 and the previous 10-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total Huns observed	147	+67	-14
Young per 100 adults	600	-5	+9
Mean brood size	10.80	+14	+6
Huns observed per 100 hours	565	+292	+232
Total hours effort	26	-57	-77

Harvest data for 1980 indicated an increase but slightly below average breeding population for 1981.

Although hours of effort decreased 57 percent from 1980, the number of Huns observed increased 67 percent. Only ten broods were observed in 1981, but mean brood size was 6 percent above average.

### Harvest

#### Hunter Questionnaire

Results of the annual hunter questionnaire for 1981 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 1981 season compared to 1980 and the previous 22-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Hungarian partridge hunters	3,545	+6	-14
Hungarian partridge harvest	8,916	+5	-2
Hunter-days afield	10,147	-2	-3
Huns per hunter-day	0.88	+7	0
Huns per hunter	2.52	0	+14

Hungarian partridge hunting pressure decreased slightly, but success improved during 1981 as compared to 1980. Harvest was only 2 percent below the long-term average.



Field Bag Checks

Results of the survey for 1981 are shown in Table 10. Hunter success trends determined via this method are shown in Table 11. Indices obtained for 1981 compared to 1980 and the previous 10-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total hunters checked	62	+72	-11
Total hours hunted	228	+121	-29
Huns per hunter (complete hunts)	1.11	+208	+71
Huns bagged per 100 hours	30	+131	+114
Average hours per hunter-day (complete hunts)	3.7	+28	-12
Hours hunted per Hun bagged (complete hunts)	3.3	-58	-63

Hungarian partridge bagged per hunter and per hunter-day.

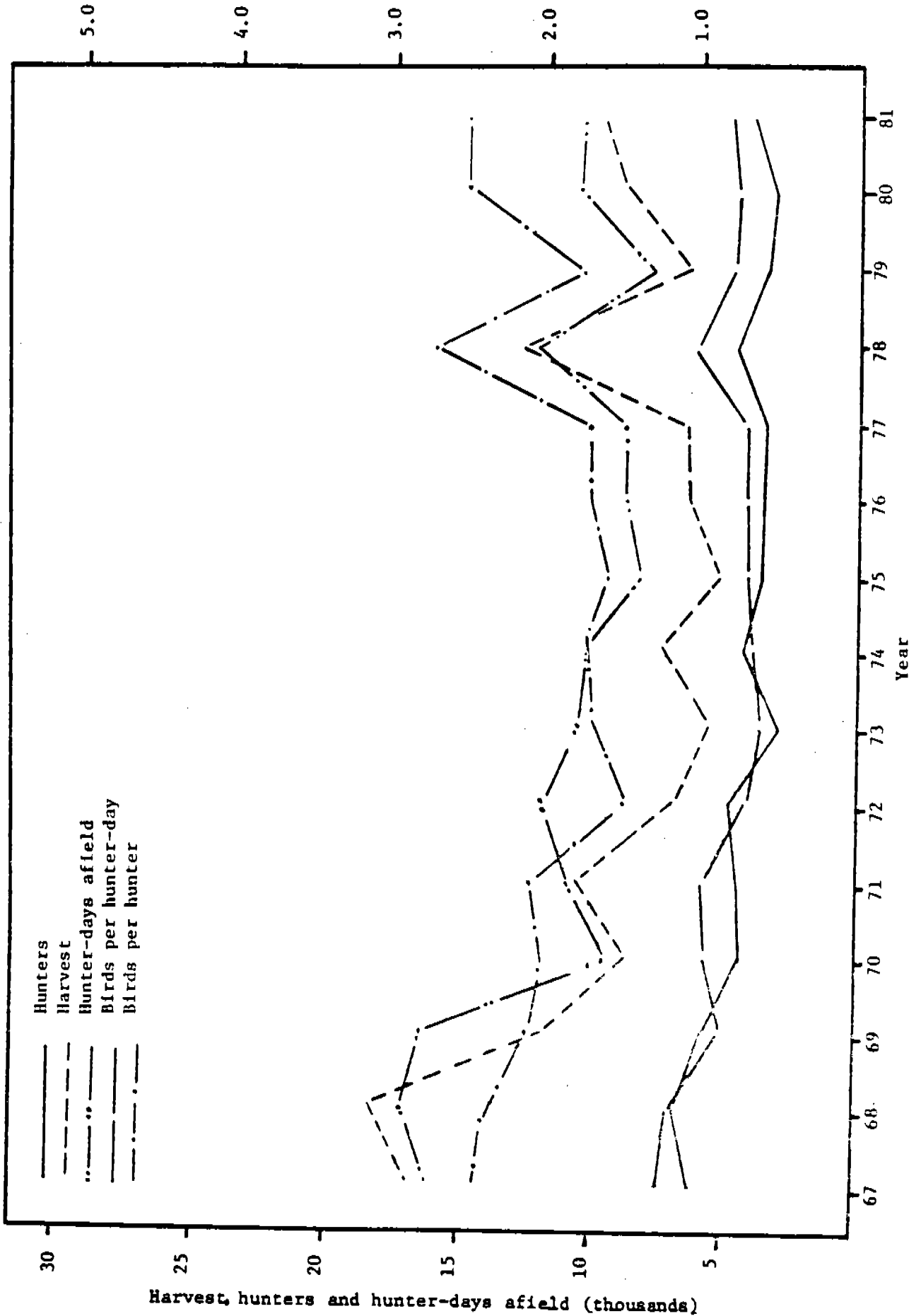


Figure 1. Statewide trend of Hungarian partridge harvest statistics.

Table 1. Hungarian partridge summer inventory summary, 1981.

Region and County	Distinct Broods		Mean Brood	Mixed Ing & Adults		Adults w/o Ing	Total Adults	Total Ing	Young/100 Ad	Veh. Miles	Hours of Effort		Birds/100 Hr	
	#	Ad		Ad	Ad						Veh.	Horse		Walk
<u>Northern Region</u>														
Box Elder	8	13	96	4	18	0	17	114	671	270	15	8	23	570
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	2	4	12	0	0	0	4	12	300	0	0	0	0	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>10</b>	<b>17</b>	<b>108</b>	<b>4</b>	<b>18</b>	<b>0</b>	<b>21</b>	<b>126</b>	<b>600</b>	<b>270</b>	<b>15</b>	<b>8</b>	<b>23</b>	<b>639</b>
<u>Central Region</u>														
Juab	0	0	0	0	0	0	0	0	--	65	3	0	0	3
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>--</b>	<b>65</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
<u>Southern Region</u>														
Beaver														
Garfield														
Iron														
Kane														
Millard														
Piute														
Sevier														
Washington														
Wayne														
<b>REGIONAL TOTALS</b>														
<u>Northeastern Region</u>														
Daggett														
Duchesne														
Uintah														
<b>REGIONAL TOTALS</b>														
<u>Southeastern Region</u>														
Carbon														
Emery														
Grand														
San Juan														
<b>REGIONAL TOTALS</b>														
<b>STATE TOTALS</b>	<b>10</b>	<b>17</b>	<b>108</b>	<b>4</b>	<b>18</b>	<b>0</b>	<b>21</b>	<b>126</b>	<b>600</b>	<b>330</b>	<b>18</b>	<b>8</b>	<b>26</b>	<b>565</b>

NOT APPLICABLE

NOT APPLICABLE

NOT APPLICABLE

Table 2. Trend of Hungarian partridge young per 100 adults, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	524	379	575	775	600	421	467	580	840	688	671	
Cache	--	--	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	1,400	--	400	675	--	533	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	700	300	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	553	379	560	755	600	431	467	580	840	691	600	586
<u>Central Region</u>												
Juab	--	--	--	--	--	--	--	--	500	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	--	--	--	--	--	233	173	--	--	--	--	
Tooele	--	--	--	--	--	550	--	--	--	--	--	
Utah	--	--	--	--	--	--	--	--	--	0	--	
Wasatch	350	800	450	800	--	20	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	350	800	450	800	--	200	173	--	500	--	--	468
<u>Southern Region</u>												
Beaver												
Garfield												
Iron												
Kane												
Millard												
Piute												
Sevier												
Washington												
Wayne												
N O T A P P L I C A B L E												
<b>REGIONAL TOTALS</b>												
<u>Northeastern Region</u>												
Daggett												
Duchesne												
Uintah												
N O T A P P L I C A B L E												
<b>REGIONAL TOTALS</b>												
<u>Southeastern Region</u>												
Carbon												
Emery												
Grand												
San Juan												
N O T A P P L I C A B L E												
<b>REGIONAL TOTALS</b>												
<b>STATE TOTALS</b>	495	424	552	757	600	328	369	580	780	633	600	552

Table 3. Trend of Hungarian partridge mean brood size from 1971-81.

Region and County	Year										Average 1971-80	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980		1981
<u>Northern Region</u>												
Box Elder	7.82	11.50	11.36	11.22	13.44	10.22	10.77	11.60	8.40	11.00	12.00	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	14.00	--	8.33	13.50	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	7.00	6.00	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
<u>REGIONAL TOTALS</u>	8.16	11.50	10.80	11.64	13.44	10.22	10.77	11.60	8.40	9.50	10.80	10.60
<u>Central Region</u>												
Juab	--	--	--	--	--	--	--	--	5.00	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	8.00	4.50	8.00	--	2.00	--	--	--	--	--	--
<u>REGIONAL TOTALS</u>	--	8.00	4.50	8.00	--	2.00	--	--	5.00	--	--	5.50
<u>Southern Region</u>												
Beaver												
Garfield												
Iron												
Kane												
Millard												
Piute												
Sevier												
Washington												
Wayne												
<u>REGIONAL TOTALS</u>												
<u>Northeastern Region</u>												
Daggett												
Duchesne												
Uintah												
<u>REGIONAL TOTALS</u>												
<u>Southeastern Region</u>												
Carbon												
Emery												
Grand												
San Juan												
<u>REGIONAL TOTALS</u>												
<u>STATE TOTALS</u>	8.16	10.33	9.75	11.33	13.44	9.40	10.77	11.60	7.83	9.50	10.80	10.21

Table 4. Trend of Hungarian partridge observed per 100 hours, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	213	133	91	80	262	184	109	203	235	154	570	
Cache	--	--	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	--	428	--	--	1,900	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>213</b>	<b>133</b>	<b>106</b>	<b>97</b>	<b>262</b>	<b>205</b>	<b>109</b>	<b>151</b>	<b>174</b>	<b>158</b>	<b>639</b>	<b>161</b>
<u>Central Region</u>												
Juab	--	--	--	--	--	--	--	--	600	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	--	--	--	--	400	820	--	--	--	--	--	
Tooele	--	--	--	--	2,600	--	--	--	--	--	--	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	300	450	275	450	--	120	--	--	0	33	--	
<b>REGIONAL TOTALS</b>	<b>300</b>	<b>171</b>	<b>275</b>	<b>450</b>	<b>--</b>	<b>371</b>	<b>820</b>	<b>--</b>	<b>200</b>	<b>17</b>	<b>--</b>	<b>326</b>
<u>Southern Region</u>												
Beaver												
Garfield												
Iron												
Kane												
Millard												
Piute												
Sevier												
Washington												
Wayne												
M O T A P P L I C A B L E												
<u>Northwestern Region</u>												
Daggett												
Duchesne												
Uintah												
M O T A P P L I C A B L E												
<u>Southeastern Region</u>												
Carbon												
Emery												
Grand												
San Juan												
M O T A P P L I C A B L E												
<b>REGIONAL TOTALS</b>	<b>243</b>	<b>139</b>	<b>110</b>	<b>101</b>	<b>362</b>	<b>238</b>	<b>131</b>	<b>151</b>	<b>177</b>	<b>144</b>	<b>565</b>	<b>170</b>
<b>STATE TOTALS</b>												

Table 5. Summary of Hungarian partridge hunter success and distribution of harvest and hunting pressure by region and county, 1981.

Region and County	Sample Size*	Hunter-days Afield	Birds Bagged	Birds per Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	104	5,349	7,027	1.31	52.72	78.81
Cache	26	2,038	1,231	0.60	20.08	13.81
Davis	1	21	0	0.00	0.21	0.00
Morgan	4	127	64	0.50	1.26	0.71
Rich	3	85	42	0.50	0.84	0.43
Summit	2	42	64	1.50	0.42	0.71
Weber	1	21	0	0.00	0.21	0.00
REGIONAL TOTALS	141	7,685	8,428	1.10	75.73	94.52
<u>Central Region</u>						
Juab	2	106	127	1.20	1.05	1.43
Salt Lake	4	340	21	0.06	3.35	0.24
Sanpete	0	0	0	0.00	0.00	0.00
Tooele	8	1,380	127	0.09	13.60	1.43
Utah	8	425	106	0.25	4.18	1.19
Wasatch	4	106	42	0.40	1.05	0.48
REGIONAL TOTALS	26	2,356	425	0.13	23.22	4.76
<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	0	0	0	0.00	0.00	0.00
Piute	0	0	0	0.00	0.00	0.00
Sevier	0	0	0	0.00	0.00	0.00
Washington	0	0	0	0.00	0.00	0.00
Wayne	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	0	0	0	0.00	0.00	0.00
<u>Northeastern Region</u>						
Daggett	0	0	0	0.00	0.00	0.00
Duchesne	1	21	21	1.00	0.21	0.24
Uintah	1	21	21	1.00	0.21	0.24
REGIONAL TOTALS	2	42	42	1.00	0.42	0.48
<u>Southeastern Region</u>						
Carbon	0	0	0	0.00	0.00	0.00
Emery	1	21	21	1.00	0.21	0.24
Grand	0	0	0	0.00	0.00	0.00
San Juan	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	1	21	21	1.00	0.21	0.24
Unknown counties	2	42	0	0.00	0.42	0.00
Mixed counties	0	0	0	0.00	0.00	0.00
STATE TOTALS	172	10,147	8,916	0.88	100	100

\*Total hunter-trips from questionnaire returns.

Table 6. Summary of Hungarian partridge bagged per hunter-day by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	0.90	0.74	1.19	0.94	0.88	1.31
Cache	0.68	0.92	0.67	0.93	0.77	0.60
Davis	0.64	0.00	2.00	0.76	1.50	0.00
Morgan	0.29	0.44	0.27	1.36	2.25	0.50
Rich	0.09	0.22	2.80	0.56	1.00	0.50
Summit	0.00	0.88	2.00	0.50	1.00	1.50
Weber	0.46	0.97	0.91	0.32	1.00	0.00
REGIONAL TOTALS	0.75	0.76	1.07	0.90	0.88	1.10
<u>Central Region</u>						
Juab	0.00	0.33	0.67	0.00	0.00	1.20
Salt Lake	2.00	0.75	1.50	0.00	1.00	0.05
Sanpete	0.50	0.00	0.00	0.00	0.00	0.00
Tooele	0.00	0.21	0.00	0.50	0.60	0.09
Utah	0.50	0.27	0.33	1.00	0.23	0.25
Wasatch	0.00	0.55	1.64	0.13	0.63	0.40
REGIONAL TOTALS	0.31	0.36	0.33	0.27	0.43	0.18
<u>Southern Region</u>						
Beaver	0.50	0.00	0.00	0.00	2.50	0.00
Garfield	0.00	0.50	0.00	0.00	0.00	0.00
Iron	0.00	0.00	0.00	0.00	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00
Millard	0.00	0.00	0.00	0.00	0.00	0.00
Piute	0.00	0.00	0.00	0.00	0.00	0.00
Sevier	0.33	1.00	0.00	0.00	0.00	0.00
Washington	0.00	0.00	0.00	0.00	2.50	0.00
Wayne	0.00	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	0.40	0.50	0.00	0.00	1.00	0.00
<u>Northeastern Region</u>						
Daggett	0.00	0.00	0.00	0.00	0.00	0.00
Duchesne	0.00	0.00	0.00	0.00	1.20	1.00
Uintah	0.00	0.00	0.50	0.00	0.00	1.00
REGIONAL TOTALS	0.00	0.00	0.50	0.00	1.20	1.00
<u>Southeastern Region</u>						
Carbon	0.00	0.00	0.00	0.00	1.00	0.00
Emery	0.00	0.00	0.00	0.00	0.00	1.00
Grand	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
REGIONAL TOTALS	0.00	0.00	0.00	0.00	1.00	1.00
Unknown counties	1.17	0.64	1.00	0.65	0.00	0.00
Mixed counties	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	0.72	0.70	1.05	0.80	0.82	0.88



Table 7. Percentage distribution of Hungarian partridge harvest by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	68.49	66.35	78.40	62.44	73.75	78.81
Cache	12.54	14.45	8.33	18.54	9.82	13.81
Davis	2.25	0.00	0.31	3.76	0.60	0.00
Morgan	3.54	1.66	1.39	4.46	1.80	0.71
Rich	0.32	0.47	2.16	1.17	0.20	0.48
Summit	0.00	1.66	0.62	0.23	0.40	0.71
Weber	1.93	6.87	1.54	1.65	0.20	0.00
REGIONAL TOTALS	89.07	91.47	92.75	92.25	86.77	94.52
<u>Central Region</u>						
Juab	0.00	0.47	0.31	0.00	0.00	1.43
Salt Lake	0.64	0.71	0.93	0.00	0.20	0.24
Sanpete	0.64	0.00	0.00	0.00	0.00	0.00
Tooele	0.00	0.71	0.00	1.17	2.40	1.43
Utah	2.25	1.42	0.46	2.11	2.61	1.19
Wasatch	0.00	2.61	2.78	1.41	4.61	0.48
REGIONAL TOTALS	3.54	5.92	4.48	4.69	9.82	4.76
<u>Southern Region</u>						
Beaver	0.32	0.00	0.00	0.00	1.00	0.00
Garfield	0.00	0.24	0.00	0.00	0.00	0.00
Iron	0.00	0.00	0.00	0.00	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00
Millard	0.00	0.00	0.00	0.00	0.00	0.00
Piute	0.00	0.00	0.00	0.00	0.00	0.00
Sevier	0.32	0.24	0.00	0.00	0.00	0.00
Washington	0.00	0.00	0.00	0.00	1.00	0.00
Wayne	0.00	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	0.64	0.47	0.00	0.00	2.00	0.00
<u>Northeastern Region</u>						
Daggett	0.00	0.00	0.00	0.00	0.00	0.00
Duchesne	0.00	0.00	0.00	0.00	1.20	0.24
Uintah	0.00	0.00	0.15	0.00	0.00	0.24
REGIONAL TOTALS	0.00	0.00	0.15	0.00	1.20	0.48
<u>Southeastern Region</u>						
Carbon	0.00	0.00	0.00	0.00	0.20	0.00
Emery	0.00	0.00	0.00	0.00	0.00	0.24
Grand	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
REGIONAL TOTALS	0.00	0.00	0.00	0.00	0.20	0.24
Unknown counties	6.75	2.13	2.62	3.05	0.00	0.00
Mixed counties	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100

Table 8. Percentage distribution of Hungarian partridge hunting pressure by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	54.50	62.56	69.32	53.08	68.58	52.72
Cache	13.16	10.98	13.15	15.89	10.47	20.08
Davis	2.54	0.33	0.16	3.93	0.33	0.21
Morgan	8.78	2.66	5.36	2.62	0.65	1.26
Rich	2.54	1.50	0.81	1.68	0.16	0.84
Summit	0.46	1.33	0.32	0.37	0.33	0.42
Weber	3.00	4.99	1.79	4.11	0.16	0.21
REGIONAL TOTALS	84.99	84.36	90.91	81.68	80.69	75.73
<u>Central Region</u>						
Juab	0.00	1.00	0.49	0.37	0.16	1.05
Salt Lake	0.23	0.67	0.65	0.19	0.16	3.35
Sanpete	0.92	0.50	1.14	1.12	0.00	0.00
Tooele	2.31	2.33	0.16	1.37	3.27	13.60
Utah	3.23	3.66	1.46	1.68	7.53	4.18
Wasatch	1.62	3.33	1.79	8.60	5.56	1.05
REGIONAL TOTALS	8.31	11.43	5.68	13.83	16.69	23.22
<u>Southern Region</u>						
Beaver	0.46	0.00	0.00	0.00	0.33	0.00
Garfield	0.00	0.33	0.00	0.00	0.00	0.00
Iron	0.00	0.00	0.00	0.00	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00
Millard	0.00	0.00	0.00	0.00	0.33	0.00
Piute	0.00	0.00	0.16	0.00	0.65	0.00
Sevier	0.69	0.17	0.00	0.00	0.00	0.00
Washington	0.00	0.17	0.00	0.00	0.33	0.00
Wayne	0.00	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	1.15	0.67	0.16	0.00	1.64	0.00
<u>Northeastern Region</u>						
Daggett	0.00	0.00	0.00	0.00	0.00	0.00
Duchesne	0.00	0.00	0.00	0.37	0.32	0.21
Uintan	0.69	1.00	0.32	0.00	0.00	0.21
REGIONAL TOTALS	0.69	1.00	0.32	0.37	0.32	0.42
<u>Southeastern Region</u>						
Carbon	0.69	0.00	0.00	0.19	0.16	0.00
Emery	0.00	0.17	0.00	0.00	0.00	0.21
Grand	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
REGIONAL TOTALS	0.69	0.17	0.16	0.38	0.16	0.21
Unknown counties	4.16	2.33	2.76	3.74	0.00	0.42
Mixed counties	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	100	100	100	100	100	100

Table 9. Statewide summary of Hungarian partridge harvest statistics, 1955-81.

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	4,543	15,348	11,473	1.34	3.57
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	1.06	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
TOTAL (1959-81)	94,549	210,042	239,549	0.88	2.22
AVERAGES (1959-80)	4,137	9,142	10,427	0.88	2.21

Table 10. Hungarian partridge field bag check summary, 1981.

Region and County	ALL HUNTS			COMPLETE HUNTS			
	Total Parties	Total Hunters	Total Hours	Total Complete Hunts	Total Hours	Total Birds	Birds/100 Hr Hunter
<u>Northern Region</u>							
Box Elder	25	62	228	25	62	69	1.11
Cache	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--
<u>REGIONAL TOTALS</u>	25	62	228	25	62	69	1.11
<u>Central Region</u>							
Juab							
Salt Lake							
Sanpete							
Tooele							
Utah							
Wasatch							
<u>REGIONAL TOTALS</u>							
<u>Southern Region</u>							
Beaver							
Garfield							
Iron							
Kane							
Millard							
Piute							
Sevier							
Washington							
Wayne							
<u>REGIONAL TOTALS</u>							
<u>Northeastern Region</u>							
Daggett							
Duchesne							
Uintah							
<u>REGIONAL TOTALS</u>							
<u>Southeastern Region</u>							
Carbon							
Emery							
Grand							
San Juan							
<u>REGIONAL TOTALS</u>							
<u>STATE TOTALS</u>	25	62	228	25	62	69	1.11

N O D A T A

N O T A P P L I C A B L E

N O T A P P L I C A B L E

N O T A P P L I C A B L E

Table 11. Hungarian partridge hunter success trend determined by field bag checks, 1976-81.

Region and County	1976		1977		1978		1979		1980		1981	
	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	8	0.24	36	0.92	17	0.92	4	0.13	13	0.36	30	1.11
Cache	6	0.33	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	0.00	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>7</b>	<b>0.24</b>	<b>36</b>	<b>0.92</b>	<b>16</b>	<b>0.80</b>	<b>4</b>	<b>0.13</b>	<b>13</b>	<b>0.36</b>	<b>30</b>	<b>1.11</b>
<u>Central Region</u>												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	7	0.33	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>--</b>	<b>--</b>	<b>7</b>	<b>0.33</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
NOT APPLICABLE												
<u>Northeastern Region</u>												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<u>Southeastern Region</u>												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
NOT APPLICABLE												
<b>STATE TOTALS</b>	<b>7</b>	<b>0.24</b>	<b>26</b>	<b>0.80</b>	<b>16</b>	<b>0.80</b>	<b>4</b>	<b>0.13</b>	<b>13</b>	<b>0.36</b>	<b>30</b>	<b>1.11</b>

# WILD TURKEY

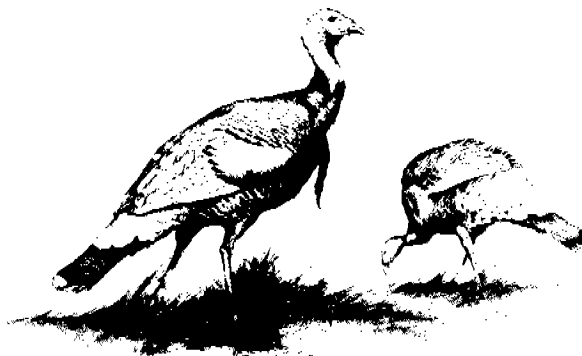
## SUMMARY

Turkey numbers throughout the 1970's remained noticeably below numbers of the late 1960's. The severe winters of 1972-73 and 1978-79 are believed to have caused the decline in combination with periodic summer droughts.

Hunter success and turkey observational data for the 1981 spring season indicated a statewide turkey population level considerably above that of 1980 and the long-term average, thus indicating a possible increase in breeding populations. This conclusion was supported by higher fall 1980 hunter success and turkeys observed. Apparently, the turkeys fared the relatively mild 1980-81 winter well. We hoped this was a sign of population recovery.

Unfortunately, the fall 1981 hunt statistics contradict this trend. Fall hunting pressure was up from 1980 but total harvest did not increase correspondingly as expected. Only one more bird was reported killed in 1981 than in 1980. Thus, hunter success was down statewide and total harvest remained considerably below the average of 41 harvested birds per year. There was also a significant decline in the percentage of hunters observing turkeys. Apparently, reproductive success declined during the summer of 1981. The period May through October was twice as wet in 1981 as it was in 1980 in southcentral Utah (3.29 inches versus 1.64 inches departure from normal). Precipitation was noticeably below normal in southern Utah during June, July and August 1980. Temperature in southern Utah averaged 4°F below normal for the period May through October 1980 and 8°F above normal for the comparable period in 1981.

Permit sales and hunters afield were higher in 1981 for both hunts compared with 1980 but remained well below the 14-year average. We expect hunter pressure to remain well below average in 1982 as well. Spring and fall harvests are not expected to change appreciably from recent levels.



## Brood Counts

Annual random brood counts have been conducted each year since the introduction of turkeys into Utah in the early 1950's; however, success in finding broods has usually been poor. Sample sizes have generally been too low to meaningfully indicate relative density or production from year to year. Spring harvest data for 1980 indicated an improved breeding population for 1981. This may have been due to improved access by hunters in 1981 compared to 1980. Improved reproductive success was not evident in the fall harvest statistics. No turkey brood observations were reported in 1981.

## Harvest

### Spring Gobbler Season

Results of the 1981 spring season are shown in Table 1 of this section. The trend of these data since the first season in 1967 is shown in Table 2. The 1981 spring season compared to 1980 and the previous 14-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Permits sold	83	+108	-45
Hunters afield	60	+71	-57
Turkeys harvested	14	+100	+17
Hunter-days afield	129	+54	-64
Percent hunter success	23	+100	+156
Turkeys bagged per hunter-day	0.11	+100	+267
Percent of hunters who observed turkeys	53	+212	+71

Permit sales and hunters afield increased from 1980 but remained below average. The total harvest has decreased from 12 in 1977 to 9 in 1978 to 1 in 1979 to 0 in 1980, but in 1981 it increased to 14. The proportion of hunters who reported having observed turkeys increased 212 percent above the 1980 level and 71 percent above average. The East Zion unit accounted for 73 percent of the hunting pressure based on hunter-days afield.

The trend of spring turkey harvest statistics is shown in Figure 1.

### Fall Season

Results of the 1981 fall season are shown in Table 3 of this section. The trend of these data since 1968 are shown in Tables 4-9. The 1981 fall season compared to 1980 and the previous 14-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Permits sold	63	+47	-59
Hunters afield	55	+57	-60
Turkeys harvested	12	+9	-71
Hunter-days afield	114	+65	-62
Percent hunter success	22	-31	-27
Turkeys bagged per hunter-day	0.11	-31	-21
Percent of hunters who observed turkeys	32	-27	-9

Approximately 35 percent of the turkey hunters use rifles during both the spring and fall hunts. About 35 percent of the turkeys killed during the spring hunt are killed by rifle. This indicates that the rifle is as effective during the spring hunt as shotgun. None of the birds killed in the fall were taken by rifle indicating rifles may be less effective during the fall.

For the first time since 1978, Utah DWR was successful in obtaining turkeys from Arizona. Funding was not by Federal Aid. Floyd Coles, the Southern Regional game manager, trapped 55 turkeys on the North Kaibab and released them on the Boulder Mountains. It is hoped that these will form the nucleus for increased populations and distribution for the 1980's. We extend our appreciation to the Arizona Game and Fish Department for these birds.

The trend of fall harvest statistics is shown in Figure 2.



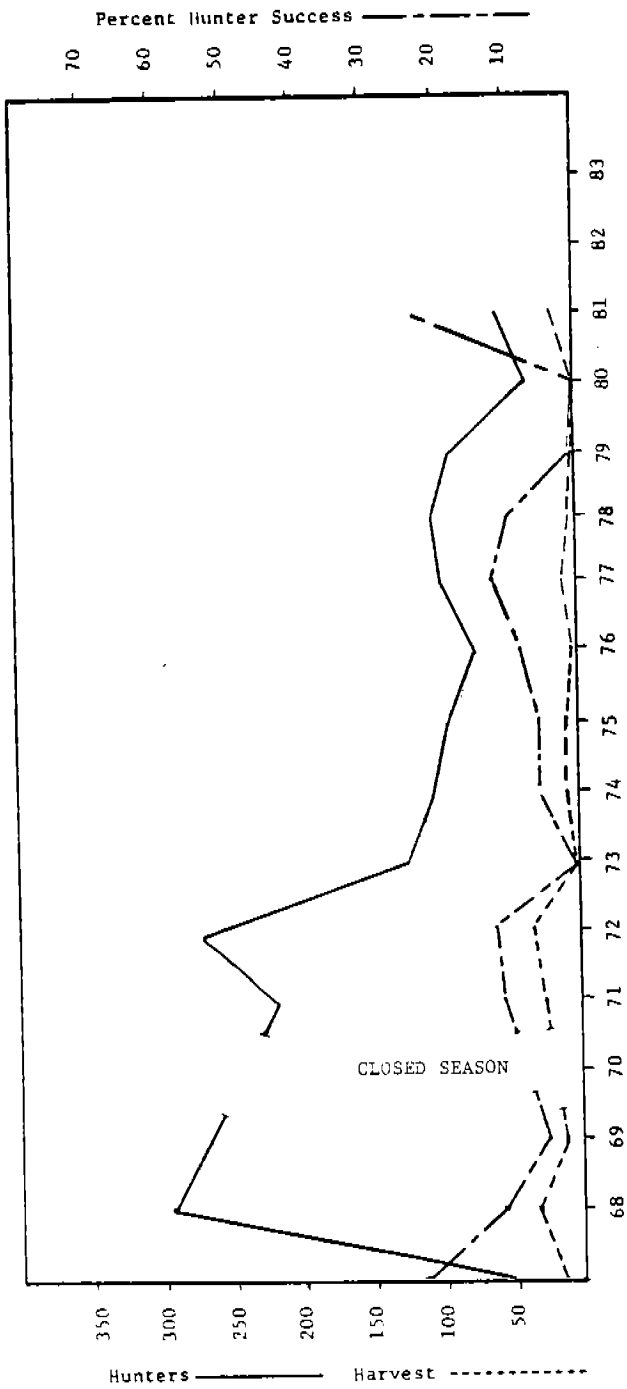


Figure 1. Wild turkey gobbler harvest trends for spring seasons.

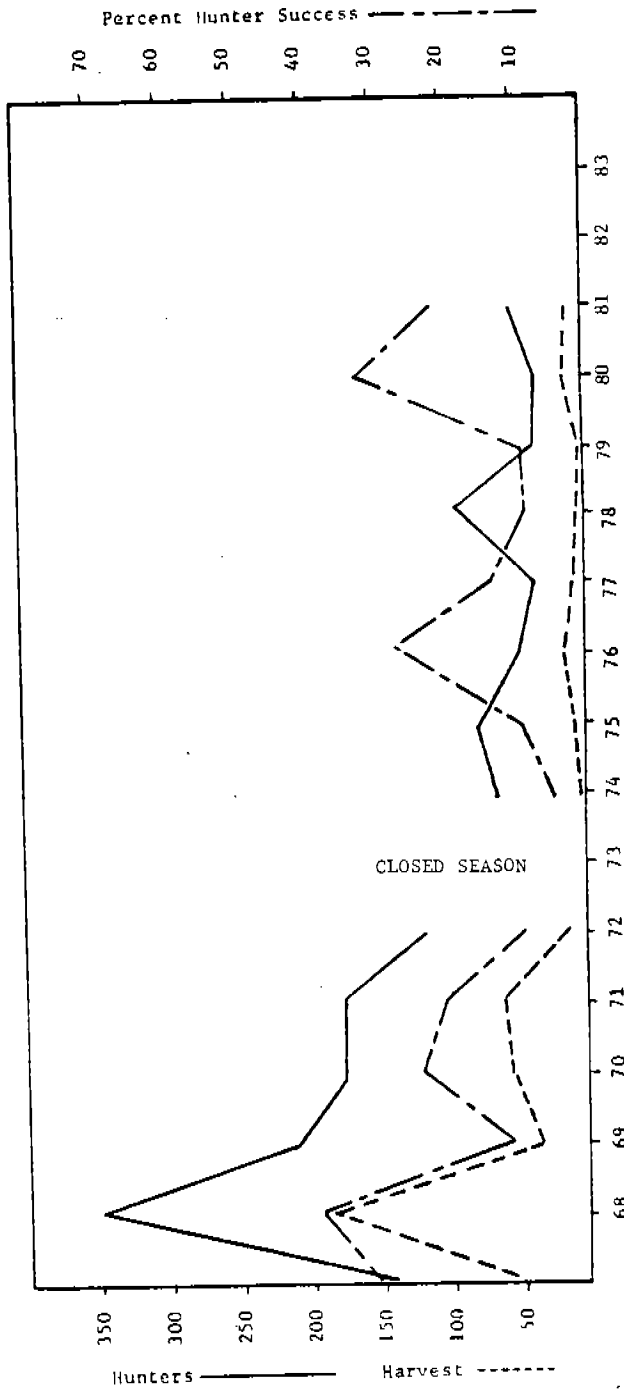


Figure 2. Wild turkey harvest trends for fall seasons.

Table 1. Summary of the 1981 spring turkey season.

Data	Elk Ridge		East Zion		Boulder		LaSal		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															83	--
No hunts															21	22
Hunters afield															57	60
Hunter-days															121	129
Turkeys bagged															13	14
Percent success															23	--
Turkeys bagged per hunter-day															0.11	--
Reported crippling loss (loss/100 bagged)															15	--
Turkeys observed															65	--
Gobblers															41	--
Hens															25	--
Unidentified															30	--
Number of hunters who saw turkeys															100	--
Percent of hunters who saw turkeys															53	--

Projection factor = 1.0641

Table 2. Summary of turkey harvest statistics for spring gobbler seasons, 1967-81.

Hunting Unit	Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per Hunter-day		Percent of Hunters Observing Turkeys	Total Permits**
		Afield			Afield						
EAST ZION	1967	24	9	59	38	0.15	58				
	1968	130	16	364	11	0.04	48				
	1969	77	4	210	6	0.02	35				
	1970				NO SEASON						
	1971	106	14	272	12	0.05	38				
	1972	113	20	321	14	0.06	47				
	1973	43	0	96	0	0.00	14				
	1974	34	2	73	7	0.03	23				
	1975	29	3	42	8	0.06	33				
	1976	31	5	74	16	0.05	38				
	1977	47	6	117	13	0.05	48				
	1978	36	4	80	13	0.06	56				
	1979	35	1	95	4	0.01	11				
	1980	35	0	84	0	0.00	17				
1981	39	13	94	32	0.14	68					
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				NO SEASON						
	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				NO SEASON						
1981				NO SEASON							

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		Hunter-day	Turkeys		
LASAL MOUNTAINS	1967	6		0	16		0	0.00		33	
	1968	17		0	44		0	0.00		62	
	1969	39		3	102		9	0.03		24	
	1970					N O	S E A S O N				
	1971	17		1	34		6	0.03		20	
	1972	50		3	129		7	0.03		29	
	1973	23		0	53		0	0.00		16	
	1974	20		0	66		0	0.00		11	
	1975	11		0	30		0	0.00		33	
	1976	8		0	25		0	0.00		14	
	1977	24		4	53		15	0.07		45	
	1978	32		2	78		7	0.03		38	
	1979	34		0	74		0	0.00		7	
	1980					N O	S E A S O N				
1981	18		1	31		6	0.03		24		
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					N O	S E A S O N				
	1980					N O	S E A S O N				
	1981					N O	S E A S O N				

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						
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			
BLUE MOUNTAIN-ELK RIDGE	1974	17		2	34	13	0.07	27			
	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 O	S E A S O N					
	1981				N O	S E A S O N					
	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			

Table 2 (continued)

Hunting Unit	Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per Hunter-day		Percent of Hunters Observing	Total Permits**
		Afield			Afield			Hunter-day	Turkeys		
STATE TOTALS	1967	49	11	118	22	0.09	59	52			
	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			
STATE AVERAGES											
(1967-80)		141	12	355	9	0.03	31	152			

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

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

Table 3. Summary of the 1981 fall turkey season.

Data	Pine Valley		Elk Ridge		Boulder Mtns.		East Zion		LaSal		STATE TOTALS	
	Rep't	Calc	Rep't	Calc	Rep't	Calc	Rep't	Calc	Rep't	Calc	Rep't	Calc
Permits sold											63	--
No hunts											6	8
Hunters afield	1	1			0	0	25	34	15	20	41	55
Hunter-days	3	4			0	0	46	62	36	48	85	114
Turkeys bagged	0	0			0	0	9	12	0	0	9	12
Percent success	0	--			0	--	36	--	0	--	22	--
Turkeys bagged per hunter-day	0	--			0	--	0.20	--	--	--	0.11	--
Reported crippling loss (loss/100 bagged)	0	--			0	--	56	--	0	--	56	--
Turkeys observed	5	--			0	--	136	--	0	--	141	--
Number of hunters who saw turkeys	1	--			0	--	12	--	0	--	13	--
Percent of hunters who saw turkeys	100	--			0	--	48	--	0	--	32	--

Projection factor = 1.340

Table 4. Summary of Boulder Mountain wild turkey harvest data for fall hunts from 1969-81.

Harvest Data	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Hunters afield	45	24	20	7	C	C	13	4	2	0	C	3	0
Hunter-days	103	77	46	17	L	L	36	10	5	0	L	6	0
Turkeys bagged	0	2	0	0	0	0	0	0	0	0	0	0	0
Percent success*	0	8	0	0	S	S	0	0	0	0	S	0	0
Percent bagging two turkeys	0	0	0	0	E	E	--	--	--	--	E	--	--
Turkeys bagged per hunter-day	0.00	0.03	0.00	0.00	D	D	0.00	0.00	0.00	0.00	D	0.00	--
Reported crippling loss (loss/100 bagged)	--	0	0	0	S	S	0	0	0	0	S	0	0
Turkeys observed	0	16	0	0	E	E	0	0	0	0	E	0	0
Number of hunters who saw turkeys	0	2	0	0	A	A	0	0	0	0	A	0	0
Percent of hunters who saw turkeys	0	10	0	0	S	S	0	0	0	0	S	0	0
	0	10	0	0	N	N	0	0	0	0	N	0	0

\*Season bag limit from 1968-72 was two turkeys. Percent success was based on successful hunters rather than total turkeys bagged.



Table 5. Summary of East Zion wild turkey harvest data for fall hunts from 1969-81.

Harvest Data	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Hunters afield	137	87	90	59	C	C	13	31	22	47	19	19	34
Hunter-days	374	203	229	154	L	L	18	57	34	107	36	31	62
Turkeys bagged	35	43	39	10	0	0	6	13	5	6	3	10	12
Percent success*	16	32	27	12	S	S	46	42	25	14	18	50	36
Percent bagging two turkeys	10	16	16	4	E	E	--	--	--	--	--	--	--
Turkeys bagged per hunter-day	0.9	0.21	0.17	0.06	D	D	0.33	0.23	0.16	0.06	0.09	0.32	0.20
Reported crippling loss													
(loss/100 bagged)	19	5	6	12	S	S	0	8	0	40	0	43	56
Turkeys observed	426	469	264	96	E	E	36	137	33	130	50	97	136
Number of hunters					A	A							
who saw turkeys	30	30	23	11	S	S	4	13	5	12	5	7	12
Percent of hunters					O	O							
who saw turkeys	25	40	31	22	N	N	44	50	26	32	29	50	48

\*Season bag limit from 1968-72 was two turkeys. Percent success was based on successful hunters rather than total turkeys bagged.

Table 6. Summary of LaSal Mountain wild turkey harvest data for fall hunts from 1969-81.

Harvest Data	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Hunters afield	17	18	13	31	C	20	9	15	24	26	15	12	20
Hunter-days	51	30	27	70	L	6	33	49	78	93	33	33	48
Turkeys bagged	1	3	5	2	0	2	1	2	1	1	0	1	0
Percent success*	7	11	18	4	S	10	11	13	6	5	0	11	0
Percent bagging two turkeys	0	6	18	4	E	--	--	--	--	--	--	--	--
Turkeys bagged per hunter-day	0.02	0.10	0.18	0.02	D	0.03	0.03	0.04	0.02	0.01	0.00	0.04	0
Reported crippling loss (loss/100 bagged)	0	0	0	0	S	100	0	0	0	0	0	0	0
Turkeys observed	40	15	25	63	E	61	21	45	13	201	11	30	0
Number of hunters who saw turkeys	1	3	3	7	A	6	4	2	2	10	1	4	0
Percent of hunters who saw turkeys	7	20	27	27	N	38	67	15	10	50	8	44	0

\*Season bag limit from 1968-72 was two turkeys. Percent success was based on successful hunters rather than total turkeys bagged.

Table 7. Summary of Beaver Mountain wild turkey harvest data for fall hunts from 1970-81.

Harvest Data	1970*	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Hunters afield	30	13	6	C	C	5	5	--	C	C	C	C
Hunter-days	87	24	12	L	L	13	18	--	L	L	L	L
Turkeys bagged	7	5	0	O	O	0	0	--	O	O	O	O
Percent success*	15	18	0	S	S	0	0	--	S	S	S	S
Percent bagging two turkeys**	8	18	0	E	E	--	--	--	E	E	E	E
Turkeys bagged per hunter-day	0.08	0.20	0	D	D	0	0	--	D	D	D	D
Reported crippling loss (loss/100 bagged)	0	0	0	S	S	0	0	--	S	S	S	S
Turkeys observed	48	64	11	E	E	0	0	--	E	E	E	E
Number of hunters who saw turkeys	8	5	2	A	A	0	0	--	A	A	A	A
Percent of hunters who saw turkeys	31	46	40	S	S	0	0	--	S	S	S	S
				O	O	0	0	--	O	O	O	O
				N	N	0	0	--	N	N	N	N

\*Wild turkeys were transplanted onto the Beaver Mountain during the winter of 1967-68. The first hunting season was held in 1970.

\*\*Season bag limit from 1968-72 was two turkeys. Percent success was based on successful hunters rather than total turkeys bagged.

Table 8. Summary of Pine Valley Mountain wild turkey harvest data for fall hunts from 1970-81.

Harvest Data	1970	1971*	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Hunters afield	6	32	11	C	C	0	0	1	6	1	0	1
Hunter-days	21	87	19	L	L	0	0	2	8	1	0	4
Turkeys bagged	3	11	0	0	0	0	0	0	0	0	0	0
Percent success*	50	23	0	S	S	0	0	0	0	0	0	0
Percent bagging two turkeys**	0	12	0	E	E	--	--	--	--	--	--	--
Turkeys bagged per hunter-day	0.14	0.13	0	D	D	0	0	0	0	0	0	0
Reported crippling loss												
(loss/100 bagged)	33	22	0	S	S	0	0	0	0	0	0	0
Turkeys observed	16	98	0	E	E	0	0	0	4	0	0	5
Number of hunters who saw turkeys	4	9	0	A	A	0	0	0	4	0	0	1
Percent of hunters who saw turkeys	80	35	0	S	S	0	0	0	80	0	0	100

\*Wild turkeys were transplanted onto the Beaver Mountain during the winter of 1967-68. The first hunting season was held in 1970.

\*\*Season bag limit from 1968-72 was two turkeys. Percent success was based on successful hunters rather than total turkeys bagged.

Table 9. Summary of Blue Mountain-Elk Ridge\* wild turkey harvest data for the fall hunt, 1974-81.

Harvest Data	1974	1975	1976	1977	1978	1979	1980	1981
Hunters afield	5	6	1	5	6	1	C	C
Hunter-days	9	15	2	14	11	1	L	L
Turkeys bagged	1	0	0	1	0	0	O	O
Percent success	20	0	0	29	0	0	S	S
Turkeys bagged per hunter-day	0.11	0.00	0.00	0.09	0.00	0.00	E	E
Reported crippling loss (loss/100 bagged)	0	0	0	0	0	0	D	D
Turkeys observed	20	0	0	2	0	0	S	S
Number of hunters who saw turkeys	1	0	0	1	0	0	E	E
Percent of hunters who saw turkeys	20	0	0	25	0	0	A	A
							S	S
							O	O
							N	N

\*Wild turkeys were initially transplanted onto the Blue Mountains in 1957 and on Elk Ridge in 1959. Those releases failed. Additional releases were made beginning in 1970 on Blue Mountain and 1972 on Elk Ridge with successful results, particularly on Blue Mountain.

Table 10. Statewide summary of fall wild turkey harvest statistics, 1963-81.

Year	Permits Sold		Hunters		Hunter-days		Turkeys Bagged		Percent Success**		Turkeys/Hunter Day		Crippling Loss/100 Bagged		Turkeys Observed		% Hunters Observing Turkeys		
			Afield		Afield														
1963	297		248		--		75		30		--		15		--		48		
1964	229		211		362		81		38		0.22		15		1,158		60		
1965	214		207		406		50		24		0.12		8		730		29		
1966*	192		187		471		43		23		0.09		7		756		36		
1967	146		135		405		40		30		0.10		16		748		48		
1968*	368		344		883		183		38		0.21		15		2,321		54		
1969	223		210		549		36		11		0.06		19		466		17		
1970	197		174		418		58		24		0.14		6		564		31		
1971	184		174		444		60		21		0.14		8		451		28		
1972	124		118		303		12		7		0.04		10		173		21		
1973																			
1974	29		26		79		3		12		0.04		33		83		38		
1975	58		46		115		7		15		0.06		0		57		26		
1976	68		56		136		15		27		0.11		7		182		32		
1977	60		53		133		7		15		0.06		0		48		18		
1978*	102		88		223		7		9		0.03		33		335		38		
1979	46		36		71		3		9		0.05		0		61		19		
1980	43		35		69		11		32		0.16		38		127		44		
1981	63		55		114		12		22		0.11		56		141		32		
C L O S E D S E A S O N																			
TOTALS (1963-81)	2,643		2,403		5,181		703		--		0.14		--		8,401		--		
AVERAGES (1963-80)	152		138		298		41		30		0.14		14		516		35		

\*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 IaSal 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.

Table 11. A summary of wild turkey transplants in Utah, 1952-82.

County	Release Site	Year	Source	Turkeys Released		Results	Hunting Seasons	
				Hens	Toms Total			
Grand	LaSal Mountains	1952	Colorado	10	6	16	Population established	1963-73
Kane	East Zion Area	1957-60	Arizona	23	10	33	Population established	1963-73
Garfield	Boulder Mountains	1958	Colorado	6	9	15	Population established	1963-73
San Juan	Blue Mountain	1957	Colorado	12	3	15	Failed	--
		1970-72	Utah	14	6	20	Population established	--
	Elk Ridge	1959	Colorado	6	4	10	Failed	--
		1969-72	Utah	6	3	9	Marginal success	--
Washington	Pine Valley Mountains	1962-63	Utah	7	6	13	Failed	--
		1968	Utah	6	1	7	Population established	1970-73
	Enterprise Reservoir	1972-73	Utah	8	4	12	Uncertain	--
Beaver	Tushar Mountains	1968	Utah	19	5	24	Marginal population	1970-73
Sevier	Old Woman Mountain	1960-62	Utah	15	7	22	Failed	--
Daggett	Dowd Mountain	1962-64	Utah	10	7	17	Failed	--
Garfield	Peterson Pasture	1981-82	Arizona	16	8	24	Unknown	
Wayne	Single Tree	1982	Arizona	11	7	18	Unknown	
Sevier	Pine Valt	1982	Arizona	8	5	13	Unknown	
TOTALS				177	91	268		

# 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 in Utah. As a result, sharp-tail habitat was directly converted to farmland or was seriously impacted by heavy grazing.

Because of habitat loss, sharptails have been extirpated from most of their former range and are now found only in extreme northern Utah, including Box Elder, Cache, Morgan and Weber counties.

In Utah, sharp-tailed grouse were completely protected from hunting from 1925-1973. Beginning in the early 1970's, field reports from various individuals and observations by Division personnel indicated that sharptails were becoming more numerous in several areas. It was felt, at this time, that limited hunting was justified. Limited hunting was legalized in 1974 and continued through 1979. However, due to a decline in observations during the 1980 spring and summer inventory period, the entire state was closed to hunting sharptails, and remained closed through 1981.

The Division has done fairly extensive fieldwork on sharptails since 1975. This work has centered on locating populations and the associated dancing grounds, evaluating habitat use, examining seasonal migration patterns and monitoring population trends.

Current management of sharptails includes counting of known dancing grounds, searches for new dancing grounds, brood counts and collection of harvest information.

Beginning in 1979, all sharptail hunters were required to obtain a free "Sharp-tailed Grouse Hunting Permit." Questionnaires were sent to all permittees following the season and results were obtained. Harvest figures are not available for the years 1974-1978, but field observations indicate that hunting pressure and harvest were fairly constant during that period and comparable to 1979.

There was no legal harvest of sharp-tailed grouse in 1980 and 1981.



Table 1. Summary of sharp-tailed grouse dancing ground counts, 1975-81.

County	Dancing Ground No. Name	1975	1976	1977	1978	1979	1980	1981
Box Elder	1. West Hills #1 (located 1977)			21	--	12	3	12
	2. West Hills #2 (located 1977)			7	--	3	1	0
	3. West Hills #3 (located 1977)			13	--	0	0	0
	4. Hunsaker's Field (located 1977)			13	16	3	0	0
	5. Whites Valley (located 1977)			12	--	0	0	0
	6. North Whites Valley (located 1977)			10	15	--	0	0
	7. Pocatello Valley #1 (located 1978)				7	4	1	9
	8. Pocatello Valley #2 (located 1978)				25	3	6	10
	9. Pocatello Valley #3 (located 1978)				4	0	0	0
	10. Pocatello Valley #4 (located 1978)				6	0	0	0
	11. Ag. Station							
Cache	1. Bankhead Well (relocated 1975)	13	6	8	7	2	2	0
	2. Baxter Ridge (relocated 1975)	12	0	0	--	--	3	5
	3. Crow Mtn. #1 (located 1979)				0	7	4	6
	4. Crow Mtn. #2 (located 1979)					6	0	5
	5. High Creek (located 1981)							7
Morgan	1. Cottonwood #1 (located 1975)	9	9	14	6	3	--	--
	2. Cottonwood #2 (located 1975)	18	9	6	16	25	--	--
	3. Deep Creek #2						4	--
Weber	1. Monastery (located 1969)	27	10	Active	Active	3	0	0
Total grounds counted		5	5	10	9	15	16	17
Total grouse counted		79	34	104	102	71	24	57
Average number of grouse/ground		15.8	6.8	10.4	11.3	4.7	1.5	3.4

# WHITE-TAILED 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 the same year.

The original two releases of white-tailed ptarmigan were made at a point about one-half mile southeast of Gunsight Pass and one mile east of Kings Peak in Painter Basin of the Uinta River drainage. Subsequent studies have shown that the population in Painter Basin has increased to the point that birds may be at carrying capacity. Breeding territory surveys in 1977 indicated reproduction from transplanted birds and the transplanted birds themselves had survived their first year. Presently, birds are known to exist in Henry's Fork, Yellowstone Basin, Gilbert Basin, Atwood Basin, Beaver Basin, Lake Blanchard, Smith's Fork, and Rainbow Basin. Evidence for existence of birds has been found in Rock Creek, Black's Fork, Garfield Basin, and Lake Fork. Presently, ptarmigan are believed to be distributed from Deadhorse Pass on the west to Leidy Peak on the east.

Surveys on the ptarmigan population should continue with emphasis on documenting habitat expansion. Areas of emphasis should include Samuels Lake in the Uinta River to Deadman Lake in the Dry Fork drainage. Two survey techniques should be used. A breeding territory survey should be conducted from mid- to late June. The technique involves walking through suitable habitat, stopping at regular intervals to play a tape-recorded territorial call. Males on territory can be located, captured with a noose pole and banded. The brood survey should be conducted from mid- to late August. The technique consists of returning to areas where birds were located in the June survey and searching intensively in likely brood habitat with hunting dogs. Chicks can be captured, weighed, banded, and primary molt will determine approximate hatching date. Results of the last 5 years of survey data collected by Jeff Grandison are located in Tables 1 and 2.

The concluding excerpt from Jeff Grandison's 1981 ptarmigan report follows:

The Uinta ptarmigan population appears to remain healthy and expanding at this time. All the parameters that have been examined during this study indicate that brood survival is still good, recruitment is continuing, and adult birds are surviving into older age-classes. The dispersal of birds appears at this time to have encompassed nearly all available habitat, as indicated by on the

ground surveys and other reports. While the actual status of the populations in outlying areas is not well-known, it may be assumed that the conditions observed in the more intensely studied areas would apply to those suitable habitats elsewhere. It is fairly certain that most of the central, long occupied areas are well stocked and being subjected to fluctuations typical in an established population. With these considerations in mind, it appears that the population has attained a stage where hunting is a reasonable objective in the management program for this species. While many parameters must be addressed, perhaps the most significant is the isolation of the birds in terms of hunter access. The existing population nearest a passable roadway is approximately ten miles distant. Access is therefore by foot or horseback. The possible exceptions to this are at Leidy Peak, where reports indicate birds may exist at about three miles from vehicle access, and near Chepeta Lake, where habitat exists about two to three miles from an access road. With the distances involved, and the lack of a tradition of hunting ptarmigan, it appears that a limited hunting season would have a very marginal effect on ptarmigan population. If a problem arises with a hunting season, it may be in the form of lack of participation by hunters. It would be extremely hard to predict actual interest by sportsmen, but it would certainly be very low. With this in mind, then, it would appear that biologically, and considering management constraints, a hunting season would be feasible at this time, and may reasonably be addressed by management personnel.

This successful transplant was the result of a cooperative effort of the Utah Division of Wildlife Resources, the Ashley and Wasatch National Forests of the U. S. Forest Service, and the Colorado Division of Wildlife.

Table 1. Summary of white-tailed ptarmigan breeding territories (pairs), 1977-81.

County	Location	(6/20-23)	(6/12-19)	(6/18-24)	1980	(6/12-14)
		1977	1978	1979		1981
Summit	Lake Blanchard					2
Duchesne	Painter Basin	7 <sup>1</sup>	10 <sup>2</sup>			
Duchesne	Gilbert Basin		2			
Duchesne	Atwood Basin					
Summit	Henry's Fork			4		
Summit	Beaver Creek			3		

<sup>1</sup>Three 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.

<sup>2</sup>An 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.

Table 2. Ptarmigan summer inventory, 1977-81.

Area:	DATE				
Statistics	8/15-19/77	8/13-19/78	8/14-24/79	8/ /80	3/18-31/81
<b>Painter Basin</b>					
n	7	7	7		12
mean brood	4.00	4.71	3.29		3.67
young/100 adult hens	400	413	329		314
hens w/o broods	0	1	0		2
adult males	3	5	5		14
<b>Henry's Fork</b>					
n		0	1		4
mean brood			4.00		4.50
young/100 adult hens			400		450
hens w/o broods			0		0
adult males			1		0
<b>Yellowstone</b>					
n		0	0		4
mean brood					4.50
young/100 adult hens					450
hens w/o broods					0
adult males					0
<b>Smith's Fork</b>					
n		0	0		
mean brood			0		
young/100 adult hens			0		
hens w/o broods			0		
adult males			2		
<b>Atwood Basin</b>					
n			.1		
mean brood			4.00		
young/100 adult hens			400		
hens w/o broods			0		
adult males			3		

Table 2. (continued)

Area: Statistics	D A T E				
	8/15-19/77	8/13-19/78	8/14-24/79	8/ /80	3/18-31/81
Gilbert Basin					
n			3		
mean brood			5.00		
young/100 adult hens			500		
hens w/o broods			0		
adult males			3		
TOTAL					
n	7	7	12 <sup>1</sup>		20
mean brood	4.00	4.71	4.50		4.00
young/100 adult hens	400	413	450		364
hens w/o brood	0	1	0		2
adult males	3	5	18		14
Total birds observed	38	46	84		116

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

Table 3. Ptarmigan hatching chronology by year, 1977-81.

Date Year	Sample Size	Mean Hatching Date
1977		
1978	39	7-25-81
1979	21	7-13-81
1980		
1981	27	7-10-81

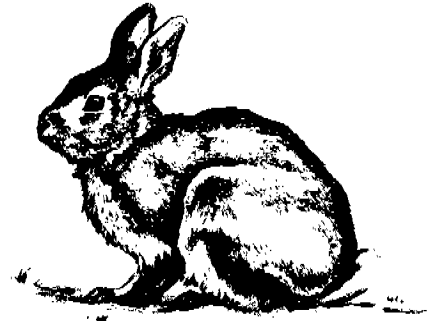
# RABBITS AND HARES

## SUMMARY

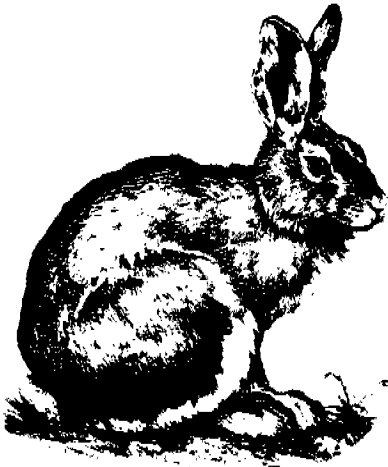
### Cottontail Rabbits

A below average breeding population level for 1981 was indicated by the 1980 harvest statistics.

Summer roadside counts however, indicated an increased population density throughout the state. Harvest statistics indicated a harvest of 149,765 cottontails with 25,906 hunters afield.



### Snowshoe Hares



The 1981 snowshoe hare hunting season was the seventh held since the Legislature provided protected status to this species in 1975.

Harvest statistics for 1981 again indicated decreased hunter participation and hunter success. This decrease may reflect more accurate identification of the snowshoe hare by hunters as a result of education efforts and/or an actual decline in hunter participation. Nevertheless, some hunters still identify whitetail jackrabbits as snowshoe hare, causing some bias in the data.



## COTTONTAIL RABBIT

### Roadside Counts

Results of the annual roadside counts for 1981 are shown in Table 1 of this section. The trend of cottontails observed per mile and young per 100 adults since 1971 is shown in Tables 2 and 3, respectively. Indices for 1981 compared to 1980 and the 10-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total miles driven	2,423	+27	-6
Total cottontails counted	1,234	+109	+36
Cottontails observed per mile	0.51	+65	+46
Young observed per 100 adults	116	+8	+5

A below average breeding population for 1981 was indicated by 1980 harvest statistics. Indicated production, however, was above 1980 and the average.

The cottontail per mile index was up in all regions and was 46 percent above the average.

### Harvest

#### Hunter Questionnaire

Results of the 1981 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 1974 are found in Tables 5-7. Trends of statewide harvest statistics are found in Table 8 and Figure 2. Results of the 1981 season compared to 1980 and the 14-year average follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Cottontail hunters	25,906	+3	-6
Cottontail harvest	149,765	+17	-24
Hunter-days afield	104,183	+20	-9
Cottontails per hunter-day	1.44	-2	-13
Cottontails per hunter	5.78	+14	-17

Total harvest, increased from 1980 as a result of increased hunter-days afield. Total harvest remains well below (-24 percent) average. Success remained significantly below average.

Field Bag Checks

Results of the survey for 1981 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 1981 field bag check data to 1980 and the average.

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Total hunters checked	91	-49	-79
Total hours hunted	212	-41	-82
Cottontails per hunter (complete hunts)	1.52	+130	-21
Cottontails bagged per 100 hours	49	+48	-13
Hours per hunter-day (complete hunts)	3.8	+52	+15
Hours per cottontail bagged	2.5	-34	+19

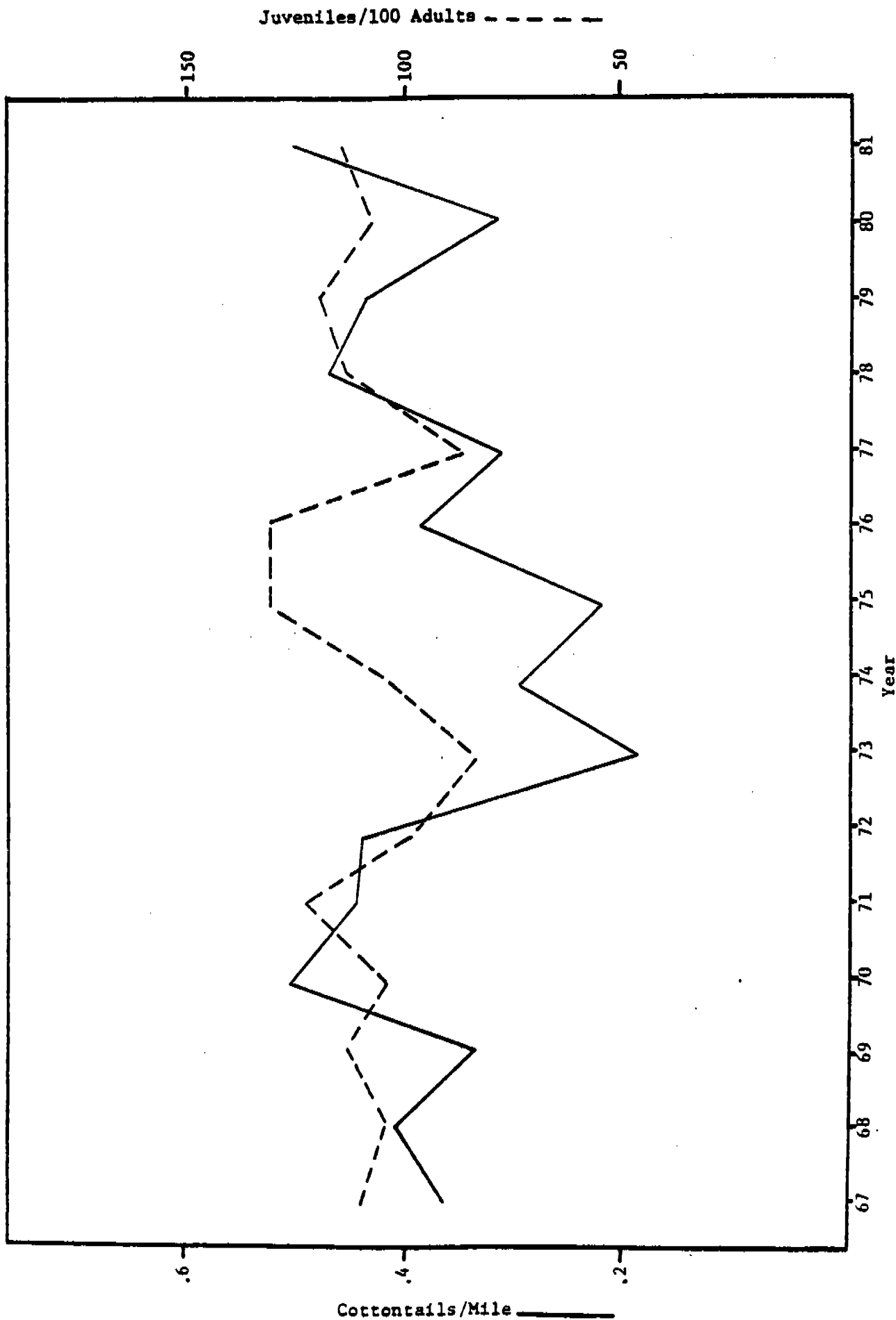


Figure 1. Cottontail Rabbit Population Indexes Trend.

Cottontails/Mile

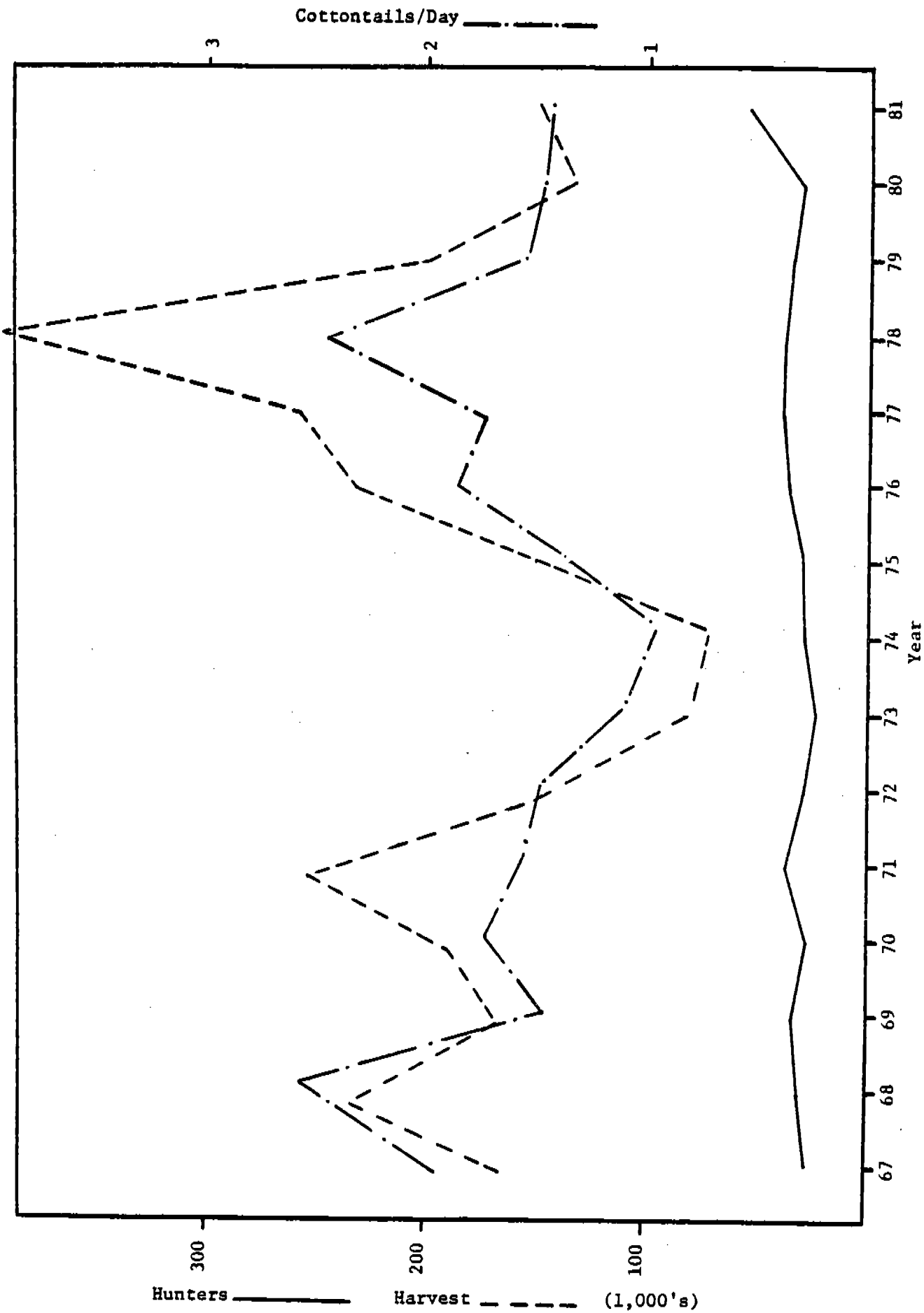


Figure 2. Cottontail Rabbit Harvest Trend

Table 1. Cottontail rabbit summer inventory summary, 1981.

Region and County	Miles Driven	Rabbits Observed			Young Per 100 Adults	Rabbits Per Mile
		Adults	Young	Unclass.		
<u>Northern Region</u>						
Box Elder	180	31	24	2	77	0.37
Cache	--	--	--	--	--	--
Davis	--	--	--	--	--	--
Morgan	--	--	--	--	--	--
Rich	90	7	3	2	43	0.13
Summit	--	--	--	--	--	--
Weber	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>270</b>	<b>38</b>	<b>27</b>	<b>4</b>	<b>71</b>	<b>0.26</b>
<u>Central Region</u>						
Juab	90	49	50	2	102	1.12
Salt Lake	--	--	--	--	--	--
Sanpete	90	39	77	0	197	1.29
Tooele	90	4	8	0	200	0.13
Utah	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>270</b>	<b>92</b>	<b>135</b>	<b>2</b>	<b>147</b>	<b>0.85</b>
<u>Southern Region</u>						
Beaver	90	11	6	0	55	0.19
Garfield	--	--	--	--	--	--
Iron	--	--	--	--	--	--
Kane	90	30	32	1	106	0.69
Millard	240	50	85	0	170	0.56
Piute	60	0	1	5	--	0.10
Sevier	63	0	30	22	--	0.83
Washington	180	17	21	6	123	0.24
Wayne	130*	23	66	0	287	0.49
<b>REGIONAL TOTALS</b>	<b>703</b>	<b>131</b>	<b>241</b>	<b>34</b>	<b>184</b>	<b>0.45</b>
<u>Northeastern Region</u>						
Daggett	160	25	26	0	104	0.32
Duchesne	120	134	57	23	42	1.78
Uintah	120	21	57	0	176	0.48
<b>REGIONAL TOTALS</b>	<b>400</b>	<b>180</b>	<b>120</b>	<b>23</b>	<b>67</b>	<b>0.81</b>
<u>Southeastern Region</u>						
Carbon	90	6	5	0	83	0.12
Emery	220	46	45	0	97	0.41
Grand	50	8	11	10	137	0.32
San Juan	180	37	39	30	105	0.42
<b>REGIONAL TOTALS</b>	<b>580</b>	<b>97</b>	<b>100</b>	<b>10</b>	<b>103</b>	<b>0.36</b>
<b>STATE TOTALS</b>	<b>2,423</b>	<b>533</b>	<b>623</b>	<b>73</b>	<b>1,234</b>	<b>0.51</b>

\*Includes data from Southeastern Region.

Table 2. Summary of cottontail rabbits observed per mile during summer inventory, 1971-81.

Region and County	Year											Average 1971-80
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
<u>Northern Region</u>												
Box Elder	0.43	0.37	0.06	1.01	0.32	0.72	0.97	0.29	0.33	--	0.37	
Cache	0.06	0.07	--	--	--	0.00	--	0.05	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	0.28	--	0.14	0.10	0.02	0.17	0.16	0.10	--	--	--	
Rich	0.22	0.11	0.14	0.04	0.16	0.46	0.26	0.47	0.30	0.11	0.13	
Summit	--	0.13	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>0.31</b>	<b>0.25</b>	<b>0.09</b>	<b>0.36</b>	<b>0.19</b>	<b>0.45</b>	<b>0.59</b>	<b>0.30</b>	<b>0.32</b>	<b>0.11</b>	<b>0.26</b>	<b>0.30</b>
<u>Central Region</u>												
Juab	0.33	0.14	0.13	--	0.07	0.08	0.18	0.19	0.23	0.29	1.12	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	0.77	0.72	0.33	0.23	0.18	0.36	0.37	0.86	1.15	1.06	1.29	
Tooele	0.22	0.14	0.02	0.06	0.04	0.16	0.19	0.21	0.51	0.26	0.13	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
<b>REGIONAL TOTALS</b>	<b>0.46</b>	<b>0.33</b>	<b>0.18</b>	<b>0.14</b>	<b>0.09</b>	<b>0.20</b>	<b>0.25</b>	<b>0.43</b>	<b>0.64</b>	<b>0.54</b>	<b>0.85</b>	<b>0.33</b>
<u>Southern Region</u>												
Beaver	0.18	0.36	0.29	0.33	0.04	0.20	0.11	0.22	0.22	0.06	0.19	
Garfield	0.33	0.29	0.12	0.14	0.28	0.39	0.15	0.13	0.15	--	--	
Iron	0.38	0.58	0.00	0.06	0.09	0.21	0.36	0.66	0.45	0.45	--	
Kane	0.17	0.60	0.32	0.26	0.48	0.49	0.32	0.23	0.34	--	0.69	
Millard	0.15	0.29	0.11	0.10	0.07	0.17	0.14	0.42	0.52	0.18	0.56	
Piute	0.00	0.00	--	0.02	0.07	0.08	0.00	0.01	0.02	--	0.10	
Sevier	0.46	0.41	0.10	0.18	0.11	0.26	0.38	0.90	0.55	0.27	0.83	
Washington	0.46	1.16	0.57	1.30	0.56	0.32	0.21	0.16	0.35	0.10	0.24	
Wayne	0.08	0.07	0.04	0.06	0.03	0.17	0.09	0.48	0.56	0.54	0.49	
<b>REGIONAL TOTALS</b>	<b>0.25</b>	<b>0.48</b>	<b>0.19</b>	<b>0.32</b>	<b>0.20</b>	<b>0.27</b>	<b>0.19</b>	<b>0.35</b>	<b>0.37</b>	<b>0.22</b>	<b>0.45</b>	<b>0.28</b>
<u>Northeastern Region</u>												
Daggett	0.76	0.73	0.50	0.24	0.24	0.68	0.25	2.77	1.58	0.40	0.32	
Duchesne	0.58	0.24	0.14	0.29	0.67	1.00	1.21	1.42	0.24	0.42	1.78	
Uintah	1.39	0.97	0.14	0.19	0.32	1.36	0.68	1.22	0.53	0.27	0.48	
<b>REGIONAL TOTALS</b>	<b>0.89</b>	<b>0.60</b>	<b>0.26</b>	<b>0.24</b>	<b>0.43</b>	<b>0.98</b>	<b>0.67</b>	<b>1.75</b>	<b>0.84</b>	<b>0.36</b>	<b>0.81</b>	<b>0.70</b>
<u>Southeastern Region</u>												
Carbon	0.24	0.20	0.46	0.15	0.18	0.18	0.10	0.12	0.12	0.15	0.12	
Emery	0.04	0.30	0.06	0.08	0.04	0.27	0.26	0.21	0.28	0.16	0.41	
Grand	0.53	0.66	0.07	0.14	0.18	0.22	0.19	0.33	0.21	0.11	0.32	
San Juan	0.97	0.48	--	0.58	0.42	0.67	0.31	0.31	0.20	0.60	0.42	
<b>REGIONAL TOTALS</b>	<b>0.53</b>	<b>0.45</b>	<b>0.19</b>	<b>0.28</b>	<b>0.22</b>	<b>0.35</b>	<b>0.21</b>	<b>0.23</b>	<b>0.21</b>	<b>0.30</b>	<b>0.36</b>	<b>0.30</b>
<b>STATE TOTALS</b>	<b>0.44</b>	<b>0.43</b>	<b>0.18</b>	<b>0.29</b>	<b>0.22</b>	<b>0.38</b>	<b>0.31</b>	<b>0.47</b>	<b>0.44</b>	<b>0.31</b>	<b>0.51</b>	<b>0.35</b>

Table 3. Summary of cottontail rabbits young per 100 adults, 1971-81.

Region and County	Year										Average 1971-80	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980		1981
<u>Northern Region</u>												
Box Elder	129	62	100	173	144	281	103	126	100	--	77	
Cache	0	0	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	25	--	--	0	--	200	100	--	--	--	--	
Rich	80	100	50	0	56	100	54	130	60	67	43	
Summit	--	14	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	100	56	73	145	120	222	96	137	85	67	71	110
<u>Central Region</u>												
Juab	171	117	100	--	67	20	100	44	13	78	102	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	144	148	142	50	38	256	200	217	312	352	197	
Tooele	100	100	0	67	100	133	129	125	100	71	200	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	145	135	121	53	54	160	154	161	167	194	147	134
<u>Southern Region</u>												
Beaver	14	61	92	11	0	--	33	70	63	40	55	
Garfield	118	86	57	56	77	103	71	64	250	--	--	
Iron	162	100	0	100	0	70	93	33	44	23	--	
Kane	50	86	44	200	160	87	65	56	82	--	106	
Millard	32	271	32	82	88	63	67	88	190	96	170	
Piute	--	--	--	0	20	75	--	--	--	--	--	
Sevier	390	450	200	183	44	67	126	147	171	350	--	
Washington	71	11	81	98	212	118	57	400	94	--	123	
Wayne	167	50	200	50	0	250	225	282	214	308	287	
REGIONAL TOTALS	93	64	67	92	120	89	86	96	139	114	184	96
<u>Northeastern Region</u>												
Daggett	81	121	63	87	77	152	48	98	123	58	104	
Duchesne	150	78	160	146	258	177	66	167	200	61	42	
Uintah	191	141	100	114	211	151	134	153	82	160	176	
REGIONAL TOTALS	139	120	87	114	198	159	78	125	118	73	67	121
<u>Southeastern Region</u>												
Carbon	53	145	250	117	227	85	112	118	230	133	83	
Emery	100	125	16	40	0	58	30	111	25	70	97	
Grand	79	297	33	62	47	54	100	77	50	250	137	
San Juan	215	111	--	140	150	179	120	35	30	68	105	
REGIONAL TOTALS	132	180	142	118	124	112	84	71	46	79	103	109
STATE TOTALS	123	99	86	105	132	132	89	112	121	107	116	111

Table 4. Summary of cottontail rabbit hunter success and distribution of harvest and hunting pressure by region and county, 1981.

Region and County	Sample Size*	Hunter-days Afield	Cottontails Bagged	Cottontails/Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	198	11,198	22,267	1.99	10.75	14.87
Cache	25	1,563	1,070	0.68	1.50	0.72
Davis	6	578	43	0.07	0.55	0.03
Morgan	11	835	1,220	1.46	0.80	0.82
Rich	12	642	1,199	1.87	0.62	0.80
Summit	31	2,055	2,484	1.21	1.97	1.66
Weber	10	835	921	1.10	0.80	0.62
REGIONAL TOTALS	293	17,706	29,204	1.65	17.00	19.50
<u>Central Region</u>						
Juab	105	5,888	10,170	1.73	5.65	6.79
Salt Lake	20	878	621	0.71	0.84	.41
Sanpete	33	1,370	1,970	1.44	1.32	1.31
Tooele	196	12,290	15,844	1.29	11.80	10.58
Utah	127	8,478	8,436	0.99	8.14	5.63
Wasatch	16	1,070	878	0.82	1.03	0.59
REGIONAL TOTALS	497	29,974	37,918	1.26	28.77	25.32
<u>Southern Region</u>						
Beaver	11	599	1,070	1.79	0.58	0.72
Garfield	14	1,627	1,713	1.05	1.56	1.14
Iron	37	2,591	2,676	1.03	2.49	1.79
Kane	12	1,220	985	0.81	1.17	.66
Millard	70	5,267	8,243	1.57	5.06	5.50
Piute	6	450	685	1.52	0.43	.46
Sevier	30	2,997	2,912	0.97	2.88	1.94
Washington	24	2,997	3,083	1.03	2.88	2.06
Wayne	19	1,542	4,154	2.69	1.48	2.77
REGIONAL TOTALS	223	19,290	25,521	1.32	18.52	17.04
<u>Northeastern Region</u>						
Daggett	15	706	792	1.12	0.68	0.53
Duchesne	75	6,573	11,861	1.80	6.31	7.92
Uintah	87	7,558	10,684	1.41	7.25	7.15
REGIONAL TOTALS	177	14,837	23,337	1.57	14.24	15.53
<u>Southeastern Region</u>						
Carbon	77	7,322	10,427	1.42	7.03	6.96
Emery	62	5,395	7,001	1.30	5.18	4.63
Grand	37	2,848	4,432	1.56	2.73	2.96
San Juan	51	5,567	10,384	1.87	5.34	6.93
REGIONAL TOTALS	227	21,132	32,244	1.53	20.28	21.53
Unknown counties	3	107	278	2.60	0.10	0.19
Mixed counties	11	1,135	1,263	1.11	1.09	0.84
STATE TOTALS	1,431	104,183	149,765	1.44	100.00	100.00

\*Total hunter trips from questionnaire returns.



Table 5. Summary of cottontail rabbits bagged per hunter-day by region and county, 1975-81.

Region and County	Year						
	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>							
Box Elder	1.25	1.63	1.87	2.56	1.84	1.92	1.99
Cache	0.31	1.30	1.28	1.59	1.22	1.35	0.68
Davis	0.21	2.05	1.83	0.39	2.00	0.90	0.07
Morgan	0.65	0.71	1.76	1.74	1.10	1.09	1.46
Rich	1.45	1.50	2.28	3.77	1.94	1.79	1.87
Summit	0.66	0.96	0.78	2.32	1.20	0.56	1.21
Weber	0.74	0.85	0.95	1.73	0.83	0.58	1.10
REGIONAL TOTALS	0.96	1.40	1.67	2.43	1.60	1.61	1.65
<u>Central Region</u>							
Juab	0.78	1.77	1.54	2.90	2.23	2.15	1.73
Salt Lake	0.94	1.35	1.20	1.55	0.96	0.56	0.71
Sanpete	0.64	1.27	0.82	1.50	1.46	0.99	1.44
Tooele	0.75	1.56	1.75	2.40	1.89	1.69	1.29
Utah	1.11	1.26	1.33	1.86	1.06	1.12	0.99
Wasatch	1.00	0.89	1.25	1.42	1.00	0.80	0.82
REGIONAL TOTALS	0.87	1.41	1.46	2.15	1.57	1.51	1.25
<u>Southern Region</u>							
Beaver	1.44	2.09	1.78	2.25	1.45	0.93	1.79
Garfield	1.00	1.02	0.50	0.80	2.12	1.86	1.05
Iron	0.84	1.19	1.08	1.48	1.74	1.27	1.03
Kane	2.31	1.00	2.55	2.80	2.01	1.39	0.81
Millard	0.70	1.67	1.78	1.84	1.82	1.70	1.57
Piute	1.14	0.60	2.06	2.06	1.27	1.53	1.52
Sevier	1.45	1.11	1.52	1.55	1.40	1.22	0.97
Washington	1.98	1.05	0.95	0.93	1.33	0.95	1.03
Wayne	1.73	2.17	2.88	1.42	1.76	1.48	2.69
REGIONAL TOTALS	1.53	1.45	1.79	1.54	1.64	1.35	1.32
<u>Northeastern Region</u>							
Daggett	0.73	3.18	2.10	3.25	3.30	1.50	1.12
Duchesne	1.86	3.31	2.92	3.67	1.49	1.39	1.80
Uintah	1.81	3.02	2.50	4.33	1.64	1.16	1.41
REGIONAL TOTALS	1.70	1.74	1.24	2.11	1.20	1.30	1.53
<u>Southeastern Region</u>							
Carbon	1.17	1.54	1.19	2.26	1.06	1.05	1.42
Emery	1.56	1.59	1.32	1.69	1.26	1.36	1.30
Grand	3.55	2.78	1.23	2.12	1.27	1.62	1.56
San Juan	1.81	1.42	1.05	2.81	1.42	1.90	1.87
REGIONAL TOTALS	1.70	1.74	1.24	2.11	1.20	1.30	1.53
Unknown counties	0.33	1.00	1.86	0.83	1.46	1.00	2.60
Mixed counties	0.00	1.49	1.56	0.00	1.25	5.00	1.11
STATE TOTALS	1.32	1.86	1.71	2.46	1.57	1.47	1.44

Table 6. Percentage distribution of cottontail rabbit harvest by region and county, 1975-81.

Region and County	Year						
	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>							
Box Elder	8.37	7.22	11.69	11.50	13.95	20.87	14.87
Cache	0.35	1.21	0.97	0.73	1.07	0.83	0.72
Davis	0.17	0.95	0.25	0.09	0.37	0.12	0.03
Morgan	0.58	0.55	2.99	2.74	1.90	0.84	0.82
Rich	1.50	1.14	2.41	4.96	2.89	1.75	0.80
Summit	1.11	0.77	1.08	2.88	1.95	1.16	1.66
Weber	1.17	0.59	0.69	0.67	0.61	0.40	0.62
REGIONAL TOTALS	13.25	12.44	20.07	23.58	22.73	25.96	19.50
<u>Central Region</u>							
Juab	2.84	3.77	4.22	5.16	7.79	9.35	6.79
Salt Lake	1.28	0.72	0.62	1.19	1.01	0.37	0.41
Sanpete	1.57	0.97	1.37	1.06	3.51	2.76	1.31
Tooele	4.82	7.12	10.38	10.17	16.48	21.32	10.58
Utah	7.21	6.12	6.94	6.77	7.40	6.01	5.63
Wasatch	0.87	1.05	0.89	0.80	1.18	0.88	0.59
REGIONAL TOTALS	18.59	19.75	24.42	25.15	37.37	40.69	25.32
<u>Southern Region</u>							
Beaver	0.25	1.68	0.46	0.89	0.47	1.43	0.72
Garfield	0.31	0.53	0.10	0.26	0.63	0.35	1.14
Iron	1.26	1.37	0.47	1.14	1.83	1.01	1.79
Kane	1.61	0.02	1.41	0.76	1.19	0.85	0.66
Millard	1.09	2.90	2.44	1.66	4.37	5.00	5.50
Piute	0.16	0.03	0.37	0.24	0.74	0.61	0.46
Sevier	1.07	0.36	1.02	1.15	2.14	1.84	1.94
Washington	8.51	2.47	0.70	0.93	1.70	1.12	2.06
Wayne	1.11	2.33	2.40	0.61	1.84	1.19	2.77
REGIONAL TOTALS	15.37	11.70	9.37	7.63	14.91	13.39	17.04
<u>Northeastern Region</u>							
Daggett	0.47	3.12	1.42	4.71	4.13	0.84	0.53
Duchesne	9.56	18.80	11.01	9.95	4.97	3.86	7.92
Uintah	14.01	15.38	14.17	16.60	5.82	3.40	7.13
REGIONAL TOTALS	24.05	37.30	26.60	13.26	14.92	8.10	15.58
<u>Southeastern Region</u>							
Carbon	7.60	6.05	5.41	4.84	3.46	4.22	6.96
Emery	9.09	4.74	5.60	3.51	3.69	4.05	4.63
Grand	7.58	4.14	0.54	1.32	0.62	1.68	2.96
San Juan	4.47	1.40	0.75	2.13	1.47	1.75	6.93
REGIONAL TOTALS	28.74	16.33	12.31	11.79	9.23	11.70	21.53
Unknown counties	0.02	0.01	2.77	0.59	0.14	0.03	0.19
Mixed counties	0.00	2.08	4.47	0.00	0.70	0.13	0.84
STATE TOTALS	100	100	100	100	100	100	100

Table 7. Percentage distribution of cottontail rabbit hunting pressure by region and county, 1975-81.

Region and County	Year						
	1975	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>							
Box Elder	8.88	8.27	10.69	11.05	11.92	15.90	10.75
Cache	1.51	1.75	1.29	1.13	1.37	0.90	1.50
Davis	1.08	0.86	0.23	0.58	0.29	0.20	0.55
Morgan	1.18	1.47	2.91	3.87	2.70	1.13	0.80
Rich	1.36	1.42	1.81	3.24	2.35	1.43	0.62
Summit	2.23	1.51	2.37	3.06	2.55	3.01	1.97
Weber	0.08	1.29	1.23	0.95	1.16	1.02	0.80
REGIONAL TOTALS	18.33	16.57	20.53	23.89	22.34	23.58	17.00
<u>Central Region</u>							
Juab	4.80	3.99	4.70	4.37	5.47	6.39	5.65
Salt Lake	1.80	0.99	0.89	1.89	1.66	0.98	0.84
Sanpete	3.26	1.42	2.85	1.73	3.79	4.10	1.32
Tooele	8.52	8.53	10.13	10.44	13.67	18.48	11.80
Utah	8.57	9.07	8.96	8.93	10.99	7.87	8.14
Wasatch	1.16	2.20	1.21	1.39	1.85	1.60	1.03
REGIONAL TOTALS	28.11	26.20	28.74	28.76	37.44	39.43	28.77
<u>Southern Region</u>							
Beaver	0.23	1.51	0.44	0.97	0.50	2.25	0.58
Garfield	0.41	0.97	0.35	0.81	0.47	0.27	1.56
Iron	1.98	2.15	0.75	1.89	1.65	1.17	2.49
Kane	0.92	0.04	0.94	0.66	0.93	0.90	1.17
Millard	2.05	3.23	2.35	2.22	3.77	4.30	5.06
Piute	0.18	0.11	0.31	0.29	0.92	0.59	0.43
Sevier	0.98	0.60	1.16	1.83	2.40	2.21	2.83
Washington	5.67	4.40	1.25	2.44	2.00	1.72	2.88
Wayne	0.85	2.00	1.43	1.05	1.64	1.17	1.43
REGIONAL TOTALS	13.27	15.02	8.98	12.17	14.28	14.58	18.52
<u>Northeastern Region</u>							
Daggett	0.85	1.83	1.16	3.56	1.97	0.82	0.68
Duchesne	6.78	10.60	6.45	6.67	5.24	4.08	6.31
Uintah	10.24	9.50	9.69	9.44	5.59	4.28	7.25
REGIONAL TOTALS	17.86	21.93	17.30	19.66	12.80	9.18	14.24
<u>Southeastern Region</u>							
Carbon	8.57	7.35	7.76	5.26	5.13	5.90	7.03
Emery	7.70	5.55	7.26	5.11	4.59	4.38	5.18
Grand	2.82	2.78	0.75	1.54	0.77	1.52	2.73
San Juan	3.26	1.83	1.23	1.86	1.63	1.35	5.34
REGIONAL TOTALS	22.36	17.54	17.01	13.77	12.11	13.16	20.28
Unknown counties	0.08	0.02	2.54	1.75	0.15	0.04	0.10
Mixed counties	0.00	2.61	4.89	0.00	0.88	0.04	1.09
STATE TOTALS	100	100	100	100	100	100	100

Table 8. Statewide summary of cottontail rabbit harvest statistics, 1967-81.

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
<hr/>					
TOTALS (1967-81)	409,799	2,894,374	1,715,342	1.65	6.89
<hr/>					
AVERAGES (1967-80)	27,421	196,044	115,083	1.66	6.97
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Table 9. Cottontail rabbit field bag check summary, 1981.

Region and County	ALL HUNTS				COMPLETE HUNTS				Rabbits/100 Hr	Rabbits/100 Hr	Hunter
	Total Parties	Total Hunters	Total Hours	Total Rabbits	Total Complete Hunts	Total Hunters	Total Hours	Total Rabbits			
<u>Northern Region</u>											
Box Elder	9	24	93	24	26	9	24	93	24	26	1.00
Cache	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>9</b>	<b>24</b>	<b>93</b>	<b>24</b>	<b>26</b>	<b>9</b>	<b>24</b>	<b>93</b>	<b>24</b>	<b>26</b>	<b>1.00</b>
<u>Central Region</u>											
Juab	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<u>Southern Region</u>											
Beaver	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--
<b>REGIONAL TOTALS</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<u>Northeastern Region</u>											
Daggett	3	5	23	6	26	1	2	20	1	5	0.50
Duchesne	10	16	42	25	59	5	7	26	15	68	2.14
Uintah	4	8	15	8	53	1	3	6	3	50	1.00
<b>REGIONAL TOTALS</b>	<b>17</b>	<b>29</b>	<b>80</b>	<b>39</b>	<b>49</b>	<b>7</b>	<b>12</b>	<b>52</b>	<b>19</b>	<b>36</b>	<b>1.58</b>
<u>Southeastern Region</u>											
Carbon	--	--	--	--	--	--	--	--	--	--	--
Emery	4	9	17.5	20	114	2	5	10.5	18	171	3.60
Grand	2	7	4.5	2	44	--	--	--	--	--	--
San Juan	6	12	17.5	20	114	1	1	4	3	75	3.00
<b>REGIONAL TOTALS</b>	<b>12</b>	<b>28</b>	<b>39.5</b>	<b>42</b>	<b>106</b>	<b>3</b>	<b>6</b>	<b>14.5</b>	<b>21</b>	<b>144</b>	<b>3.50</b>
<b>STATE TOTALS</b>	<b>38</b>	<b>91</b>	<b>212.5</b>	<b>105</b>	<b>49</b>	<b>19</b>	<b>42</b>	<b>159.5</b>	<b>64</b>	<b>40</b>	<b>1.52</b>

Table 10. Cottontail hunter success trend determined by field bag checks, 1976-81.

Region and County	1976		1977		1978		1979		1980		1981	
	Bag/100 Hr Hunter	Bag/ Hunter	Bag/100 Hr Hunter	Bag/ Hunter	Bag/100 Hr Hunter	Bag/ Hunter	Bag/100 Hr Hunter	Bag/ Hunter	Bag/100 Hr Hunter	Bag/ Hunter	Bag/100 Hr Hunter	Bag/ Hunter
<u>Northern Region</u>												
Box Elder	9	0.40	46	1.97	40	1.74	29	1.23	34	1.09	26	1.00
Cache	--	--	17	0.67	--	--	4	0.33	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	58	2.21	33	2.29	52	2.79	19	0.73	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	167	1.67	--	--	--	--	--	--
REGIONAL TOTALS	37	1.59	41	1.92	46	2.14	20	0.93	34	1.09	26	1.00
<u>Central Region</u>												
Juab	10	2.00	--	--	--	--	67	2.00	--	--	--	--
Salt Lake	400	4.00	--	--	--	--	--	--	--	--	--	--
Sanpete	11	1.00	13	0.42	33	0.88	30	0.93	--	--	--	--
Tooele	14	0.57	38	1.65	--	--	134	4.25	--	--	--	--
Utah	7	0.23	--	--	--	--	80	2.00	--	--	--	--
Wasatch	--	--	50	2.00	--	--	--	--	--	--	--	--
REGIONAL TOTALS	14	0.76	30	1.14	33	0.88	79	2.41	--	--	--	--
<u>Southern Region</u>												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	314	3.14	100	1.00	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	57	1.33	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	314	3.14	63	1.25	--	--	--	--	386	3.86*	--	--
<u>Northeastern Region</u>												
Daggett	81	2.59	54	1.70	180	7.62	98	2.29	0	0.00	26	0.50
Duchesne	77	4.03	66	2.68	89	3.42	--	--	53	1.67	59	2.14
Uintah	157	6.24	138	4.83	189	4.13	--	--	--	--	53	1.00
REGIONAL TOTALS	98	4.60	68	2.49	162	6.10	98	2.29	29	0.55	49	1.58
<u>Southeastern Region</u>												
Carbon	40	2.19	62	3.00	289	4.50	--	--	36	1.00	--	--
Emery	28	2.19	8	0.30	26	1.40	--	--	25	0.25	114	3.60
Grand	47	1.39	11	0.29	22	0.60	50	0.50	--	--	44	--
San Juan	63	2.00	72	0.93	160	--	0	0.00	0	0.00	114	3.00
REGIONAL TOTALS	38	1.86	45	1.44	56	1.04	33	0.33	26	0.38	106	3.50
STATE TOTALS	60	2.85	49	1.82	103	3.88	65	1.85	33	0.66	49	1.52

\*Cottontails per hunter based on all hunts.

## SNOWSHOE HARE

### Harvest

During 1981, the seventh annual snowshoe hare hunting season was held state-wide. Results of the 1981 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. The 1981 season compared to the season in 1980 and the average of the first six hunts follow:

	<u>1981</u>	<u>Percent change from</u>	
		<u>1980</u>	<u>Average</u>
Snowshoe hare hunters	3,554	-12	-51
Snowshoe hares harvested	7,750	+2	-56
Hunter-days afield	12,782	+15	-39
Snowshoes per hunter-day	0.61	-10	-24
Snowshoes per hunter	2.18	+16	-8

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 1981 questionnaire indicate a 12 percent decrease in snowshoe hare hunters and comparable harvest as in 1980.

It is unknown what proportion of the reported snowshoe harvest was 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.

Hopefully, the decrease in hunters afield and harvest reflects more accurate identification rather than a significant decline in hunter participation and harvest.

Table 11. Summary of snowshoe hare hunter success and distribution of harvest and hunting pressure by region and county, 1981.

Region and County	Sample Size*	Hunter-days Afield	Snowshoes Bagged	Snowshoe/Hunter-day	% of Pressure	% of Harvest
<u>Northern Region</u>						
Box Elder	19	1,049	449	0.43	8.21	5.80
Cache	14	1,114	514	0.46	8.71	6.63
Davis	5	171	43	0.25	1.34	0.55
Morgan	5	171	43	0.25	1.34	0.55
Rich	4	257	557	2.17	2.01	7.18
Summit	24	1,477	1,349	0.91	11.56	17.40
Weber	4	278	278	1.00	2.18	3.59
<b>REGIONAL TOTALS</b>	<b>75</b>	<b>4,517</b>	<b>3,233</b>	<b>0.72</b>	<b>35.34</b>	<b>41.70</b>
<u>Central Region</u>						
Juab	3	128	107	0.83	1.01	1.38
Salt Lake	5	150	150	1.00	1.17	1.93
Sanpete	8	407	343	0.84	3.18	4.42
Tooele	12	257	21**	0.08	2.01	0.28
Utah	23	1,477	385	0.26	11.56	4.97
Wasatch	14	621	599	0.97	4.86	7.74
<b>REGIONAL TOTALS</b>	<b>65</b>	<b>3,040</b>	<b>1,605</b>	<b>0.53</b>	<b>23.79</b>	<b>20.72</b>
<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	2	86	64	0.75	0.67	0.83
Kane	0	0	0	0.00	0.00	0.00
Millard	1	21	0	0.00	0.17	0.00
Piute	0	0	0	0.00	0.00	0.00
Sevier	7	364	107	0.29	2.85	1.38
Washington	0	0	0	0.00	0.00	0.00
Wayne	3	86	171	2.00	0.67	2.21
<b>REGIONAL TOTALS</b>	<b>13</b>	<b>557</b>	<b>342</b>	<b>0.62</b>	<b>4.36</b>	<b>4.42</b>
<u>Northeastern Region</u>						
Daggett	2	64	0	0.00	0.50	0.00
Duchesne	14	1,627	1,092	0.67	12.73	14.09
Uintah	9	1,327	449	0.34	10.39	5.80
<b>REGIONAL TOTALS</b>	<b>25</b>	<b>3,018</b>	<b>1,541</b>	<b>0.51</b>	<b>23.62</b>	<b>19.89</b>
<u>Southeastern Region</u>						
Carbon	6	814	278	0.34	6.37	3.59
Emery	3	150	107	0.71	1.17	1.38
Grand	2	43	43	1.00	0.34	0.55
San Juan	0	0	0	0.00	0.00	0.00
<b>REGIONAL TOTALS</b>	<b>11</b>	<b>1,006</b>	<b>428</b>	<b>0.43</b>	<b>7.87</b>	<b>5.52</b>
Unknown counties	1	64	150	2.33	0.50	1.93
Mixed counties	4	578	450	0.78	4.52	5.80
<b>STATE TOTALS</b>	<b>194</b>	<b>12,782</b>	<b>7,750</b>	<b>0.61</b>	<b>100.00</b>	<b>100.00</b>

\*Total hunter trips from questionnaire returns.

\*\*Probable misidentification as snowshoes are not known to exist in those counties.



Table 12. Summary of snowshoe hares bagged per hunter-day by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	0.43	0.78	0.45	0.55	0.82	0.43
Cache	0.82	0.70	0.65	0.50	0.32	0.46
Davis	0.40	1.00	0.23	1.50	0.00	0.25
Morgan	0.72	0.87	0.84	0.58	0.41	0.25
Rich	0.86	0.62	3.02	1.40	1.79	2.17
Summit	1.16	1.06	1.65	0.93	0.86	0.91
Weber	0.88	0.67	0.76	0.52	0.58	1.00
REGIONAL TOTALS	0.87	0.83	1.07	0.74	0.83	0.72
<u>Central Region</u>						
Juab	0.50	0.00	1.25	2.09	0.25	0.83
Salt Lake	1.25	1.69	6.27	0.20	0.67	1.00
Sanpete	0.29	0.95	1.40	1.11	0.87	0.84
Tooele	0.40	0.33	1.80	0.38	0.40	0.08
Utah	0.71	0.67	0.50	0.71	0.48	0.26
Wasatch	0.62	0.83	0.67	0.97	0.69	0.97
REGIONAL TOTALS	0.63	0.82	1.47	0.93	0.61	0.53
<u>Southern Region</u>						
Beaver	0.75	1.00	2.67	1.00	0.00	0.00
Garfield	0.33	0.00	0.13	0.00	0.00	0.00
Iron	0.00	0.00	26.00	0.00	0.00	0.75
Kane	0.00	0.00	0.00	5.00	0.00	0.00
Millard	0.00	0.50	3.20	0.43	1.00	0.00
Piute	0.00	1.00	0.00	1.25	0.00	0.00
Sevier	0.63	0.34	0.83	0.96	0.41	0.29
Washington	0.00	2.00	1.00	4.00	0.00	0.00
Wayne	1.27	2.44	0.68	2.05	1.17	2.00
REGIONAL TOTALS	0.84	0.86	0.92	1.27	0.45	0.62
<u>Northeastern Region</u>						
Daggett	0.00	2.00	0.72	0.46	0.25	0.00
Duchesne	0.51	0.74	1.26	0.53	0.14	0.67
Uintah	0.69	0.59	0.96	1.00	0.63	0.34
REGIONAL TOTALS	0.56	0.71	0.97	0.60	0.33	0.51
<u>Southeastern Region</u>						
Carbon	0.94	0.60	1.00	0.70	1.22	0.34
Emery	0.61	0.44	1.62	0.59	0.70	0.71
Grand	1.00	0.00	5.00	0.00	0.00	1.00
San Juan	1.90	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	1.00	0.53	1.54	0.63	0.83	0.43
Unknown counties	1.00	1.17	0.67	0.00	0.00	2.33
Mixed counties	0.40	0.76	1.00	2.00	0.20	0.78
STATE TOTALS	0.76	0.80	1.15	0.81	0.68	0.61

Table 13. Percentage distribution of snowshoe hare harvested by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	2.25	5.14	2.83	7.58	11.86	5.80
Cache	10.03	5.99	4.81	5.68	3.80	6.63
Davis	0.35	0.86	0.54	1.50	0.00	0.55
Morgan	7.44	9.84	10.47	7.88	4.03	0.55
Rich	4.33	4.42	9.47	9.77	20.81	7.18
Summit	20.59	15.55	19.02	18.15	15.66	17.40
Weber	2.60	3.99	1.68	2.69	1.57	3.59
REGIONAL TOTALS	47.58	45.79	48.82	53.24	57.72	41.70
<u>Central Region</u>						
Juab	1.21	0.00	0.38	2.29	0.44	1.38
Salt Lake	1.73	3.85	14.36	0.20	2.24	1.93
Sanpete	1.04	5.99	0.54	8.13	7.38	4.42
Tooele	0.35	0.57	2.06	0.90	2.69	0.28
Utah	10.03	4.14	3.21	2.99	4.70	4.97
Wasatch	6.92	7.56	4.28	9.07	9.40	7.74
REGIONAL TOTALS	21.23	22.11	24.83	23.63	26.85	20.72
<u>Southern Region</u>						
Beaver	1.04	0.14	0.61	0.10	0.00	0.00
Garfield	0.17	0.00	0.31	0.00	0.00	0.00
Iron	0.00	0.00	1.99	0.00	0.00	0.83
Kane	0.00	0.00	0.00	0.50	0.00	0.00
Millard	0.00	0.14	1.22	0.30	0.22	0.00
Piute	0.00	0.14	0.00	1.00	0.00	0.00
Sevier	0.37	1.43	4.97	4.99	2.46	1.38
Washington	0.00	0.29	0.08	0.80	0.00	0.00
Wayne	3.29	3.14	1.91	3.89	1.57	2.21
REGIONAL TOTALS	5.36	5.28	11.08	11.57	4.25	4.42
<u>Northeastern Region</u>						
Daggett	0.00	0.86	2.22	1.30	0.67	0.00
Duchesne	5.36	5.71	3.36	2.39	0.67	14.09
Uintah	6.06	3.71	1.83	1.69	2.24	5.80
REGIONAL TOTALS	11.42	10.27	7.41	5.38	3.58	19.89
<u>Southeastern Region</u>						
Carbon	5.54	3.42	2.75	2.59	2.46	3.59
Emery	1.90	1.00	2.98	2.59	4.25	1.38
Grand	0.35	0.00	1.91	0.00	0.00	0.55
San Juan	3.29	0.00	0.00	0.00	0.00	0.00
REGIONAL TOTALS	11.07	4.42	7.64	5.18	6.71	5.52
Unknown counties	0.35	3.99	0.15	0.00	0.00	1.93
Mixed counties	1.04	8.13	0.08	1.00	0.90	5.80
STATE TOTALS	100	100	100	100	100	100

Table 14. Percentage distribution of snowshoe hare hunting pressure by region and county, 1976-81.

Region and County	Year					
	1976	1977	1978	1979	1980	1981
<u>Northern Region</u>						
Box Elder	3.99	5.26	7.26	11.20	9.92	8.21
Cache	9.45	6.85	8.49	9.19	8.09	8.71
Davis	0.67	0.68	2.71	0.81	0.76	1.34
Morgan	7.99	9.02	14.35	10.96	6.72	1.34
Rich	3.86	5.71	3.59	5.64	7.94	2.01
Summit	13.72	11.76	13.21	15.79	12.37	11.56
Weber	2.26	4.79	2.54	4.19	1.83	2.18
REGIONAL TOTALS	41.94	44.06	52.14	57.78	47.63	35.34
<u>Central Region</u>						
Juab	1.86	1.03	0.35	0.89	1.22	1.01
Salt Lake	1.07	1.83	2.62	0.81	2.29	1.17
Sanpete	2.80	5.02	0.44	5.96	5.30	3.18
Tooele	0.67	1.37	1.31	1.93	4.58	2.01
Utah	10.92	4.91	7.35	3.38	6.72	11.56
Wasatch	8.66	7.31	7.26	7.57	9.31	4.86
REGIONAL TOTALS	25.97	21.46	19.34	20.55	29.92	23.79
<u>Southern Region</u>						
Beaver	1.07	0.11	0.26	0.08	1.22	0.00
Garfield	0.40	0.00	2.80	0.08	0.00	0.00
Iron	0.27	0.00	0.09	0.00	0.00	0.67
Kane	0.00	0.00	0.00	0.08	0.00	0.00
Millard	0.13	0.23	0.44	0.56	0.15	0.17
Piute	0.00	0.11	0.00	0.54	0.00	0.00
Sevier	1.07	3.31	5.82	4.19	4.12	2.85
Washington	0.00	0.11	0.09	0.16	0.00	0.00
Wayne	2.00	1.03	3.24	1.53	0.92	0.67
REGIONAL TOTALS	4.93	4.91	13.74	7.33	6.41	4.36
<u>Northeastern Region</u>						
Daggett	0.67	0.34	3.50	2.26	1.83	0.50
Duchesne	8.12	6.16	3.06	3.63	3.21	12.73
Uintah	6.79	5.02	2.19	1.37	2.44	10.39
REGIONAL TOTALS	15.58	11.53	8.75	7.25	7.48	23.62
<u>Southeastern Region</u>						
Carbon	4.53	4.57	3.15	2.98	1.37	6.37
Emery	2.40	1.83	2.10	3.55	4.12	1.17
Grand	0.27	0.34	0.44	0.00	0.00	0.34
San Juan	1.33	0.00	0.00	0.08	0.00	0.00
REGIONAL TOTALS	18.52	6.74	5.69	6.61	5.50	7.87
Unknown counties	0.27	2.74	0.26	0.08	0.00	0.50
Mixed counties	2.00	8.56	0.09	0.40	3.05	4.52
STATE TOTALS	100	100	100	100	100	100

Table 15. Statewide summary of snowshoe hare harvest statistics, 1975-81.

Year	Total Hunters	Total Harvest	Hunters-days Afield	Hares Per Hunter-day	Hares Per Hunter
1975	5,961	12,072	19,770	0.61	2.03
1976	8,502	15,500	20,367	0.76	1.82
1977	9,752	21,232	26,535	0.80	2.18
1978	8,205	34,535	30,155	1.15	4.21
1979	6,787	14,641	18,115	0.81	2.16
1980	4,048	7,603	11,140	0.68	1.88
1981	3,554	7,750	12,782	0.61	2.18
TOTALS (1975-81)	46,809	113,333	138,864	0.77	2.35
AVERAGES (1975-80)	7,209	17,597	21,014	0.80	2.38

A P P E N D I X

Table 1. Comparison of 1981 monthly average temperatures to the normal for each weather division and statewide.

Weather Division	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>No. 1 WESTERN</b>												
Normal	25.9	31.8	38.0	47.2	56.4	64.4	74.0	72.0	62.4	50.6	37.2	28.6
1981	29.3	34.9	41.0	51.0	56.1	68.9	76.2	74.9	65.8	48.1	41.6	34.1
Departure (degrees)	+3.4	+3.1	+3.0	+3.8	-0.3	+4.5	+2.2	+2.9	+3.4	-2.5	+4.4	+5.5
<b>No. 2 DIXIE</b>												
Normal	39.0	44.1	49.2	57.6	66.5	75.2	82.6	80.6	73.7	62.5	48.4	40.2
1981	44.3	46.4	48.5	60.3	64.7	79.5	83.8	81.7	74.0	57.6	52.5	43.1
Departure (degrees)	+5.3	+2.3	-0.7	+2.7	-1.8	+4.3	+1.2	+1.1	+0.3	-4.9	+4.1	+2.9
<b>No. 3 NORPH CENTRAL</b>												
Normal	26.7	31.9	38.5	48.3	57.5	65.0	74.6	72.7	63.5	51.7	38.5	29.7
1981	29.6	34.3	41.6	51.7	55.3	67.4	75.2	74.9	65.9	48.2	41.8	34.1
Departure (degrees)	2.9	2.4	+3.1	3.4	2.2	2.4	+0.6	+2.2	+2.4	-3.5	+3.3	+4.4
<b>No. 4 SOUTH CENTRAL</b>												
Normal	26.9	31.3	36.9	45.6	54.4	62.3	70.0	68.1	60.5	50.0	37.6	29.3
1981	32.4	34.4	38.2	49.5	53.0	66.5	72.0	69.1	62.3	46.4	40.7	33.4
Departure (degrees)	+5.5	+3.1	+1.3	+3.9	-1.4	+4.2	+2.0	+1.0	+1.8	-3.6	+3.1	+4.1
<b>No. 5 NORTHERN MOUNTAINS</b>												
Normal	20.9	24.3	30.2	40.8	49.9	56.8	65.1	63.2	55.0	45.0	32.3	24.2
1981	28.6	28.8	34.1	45.1	48.4	60.0	66.2	65.6	58.7	42.6	36.7	28.6
Departure (degrees)	+7.7	+4.5	+3.9	+4.3	-1.5	+3.2	+1.1	+2.4	+3.7	-2.4	+4.4	+4.4
<b>No. 6 UINTAH BASIN</b>												
Normal	16.8	23.9	35.0	46.7	56.4	63.8	71.5	69.2	60.4	48.7	34.1	22.1
1981	29.5	32.3	39.7	51.8	55.6	68.1	72.6	70.3	64.1	46.6	37.3	28.5
Departure (degrees)	+12.7	+8.4	+4.7	+5.1	-0.8	+4.3	+1.1	+1.1	+3.7	-2.1	+3.2	+6.4
<b>No. 7 SOUTHEAST</b>												
Normal	27.3	33.6	40.6	50.6	60.1	68.7	76.1	73.7	65.6	53.7	39.3	29.8
1981	35.8	36.8	42.0	55.6	59.3	73.8	77.5	74.5	67.2	51.5	42.9	32.9
Departure (degrees)	+8.5	+3.2	+1.4	+5.0	-0.8	+5.1	+1.4	+0.8	+1.6	-2.2	+3.6	+3.1
<b>STATE AVERAGES</b>												
Normal	26.2	31.6	38.3	48.1	57.3	65.2	73.4	71.4	63.0	51.7	38.2	29.1
1981	32.8	35.4	40.7	52.1	56.1	69.1	74.8	73.0	65.4	48.7	41.9	33.5
Departure (degree)	+6.6	+3.8	+2.4	+4.0	-1.2	+3.9	+1.4	+1.6	+2.4	-3.0	+3.7	+4.4

Table 2. Comparison of 1981 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
<b>No. 1 WESTERN</b>												
Normal	0.60	0.59	0.75	0.87	0.84	0.82	0.61	0.76	0.50	0.76	0.69	0.70
1981	0.40	0.15	1.40	0.99	2.13	0.22	0.42	0.35	0.79	2.27	0.70	0.74
Departure (inches)	-0.20	-0.44	+0.65	+0.12	+1.29	-0.60	-0.19	-0.41	+0.29	+1.51	+0.01	+0.04
<b>No. 2 DIXIE</b>												
Normal	1.15	1.21	1.30	0.91	0.53	0.38	0.89	0.95	0.67	0.88	0.91	1.17
1981	0.56	0.82	3.74	1.42	1.03	0.12	1.02	0.91	0.67	0.83	0.91	0.12
Departure (inches)	-0.59	-0.39	+2.44	+0.51	+0.50	-0.26	+0.13	-0.04	0.00	-0.05	0.00	-1.05
<b>No. 3 NORTH CENTRAL</b>												
Normal	1.47	1.32	1.62	1.96	1.67	1.50	0.59	0.94	0.85	1.36	1.49	1.56
1981	1.13	0.74	2.33	0.88	4.20	0.80	0.36	0.40	0.87	4.57	1.00	2.32
Departure (inches)	-0.34	-0.58	+0.71	-1.08	+2.53	-0.70	-0.23	-0.54	+0.02	+3.21	-0.49	+0.76
<b>No. 4 SOUTH CENTRAL</b>												
Normal	1.03	0.98	1.18	1.13	0.88	0.76	0.96	1.39	0.88	1.03	0.93	1.08
1981	0.33	0.41	2.35	1.04	2.18	0.37	0.98	1.67	1.65	2.34	0.81	0.64
Departure (inches)	-0.70	-0.57	+1.17	-0.09	+1.30	-0.39	+0.02	+0.28	+0.77	+1.31	-0.12	-0.44
<b>No. 5 NORTHERN MOUNTAINS</b>												
Normal	2.19	1.89	2.05	1.86	1.52	1.52	0.86	1.34	1.05	1.57	1.82	2.24
1981	1.13	0.95	2.75	1.37	3.73	0.74	0.56	0.86	1.38	4.26	1.20	3.31
Departure (inches)	-1.06	-0.94	+0.70	-0.49	+2.21	-0.78	-0.30	-0.48	+0.33	+2.69	-0.62	+1.07
<b>No. 6 UINTAH BASIN</b>												
Normal	0.51	0.43	0.50	0.68	0.68	0.90	0.62	0.87	0.72	0.94	0.51	0.69
1981	0.10	0.24	0.78	0.57	1.33	0.16	0.50	0.60	1.12	3.37	0.32	0.33
Departure (inches)	-0.41	-0.19	+0.28	-0.11	+0.65	-0.74	-0.12	-0.27	+0.40	+2.43	-0.19	-0.36
<b>No. 7 SOUTHEAST</b>												
Normal	0.61	0.56	0.60	0.68	0.59	0.56	0.74	1.23	0.77	1.07	0.61	0.73
1981	0.18	0.24	1.52	0.69	0.86	0.38	1.40	1.11	1.31	1.98	0.58	0.15
Departure (inches)	-0.43	-0.32	+0.92	+0.01	+0.27	-0.18	+0.66	-0.12	+0.54	+0.91	-0.03	-0.58
<b>STATE AVERAGES</b>												
Normal	1.08	1.00	1.14	1.16	0.96	0.92	0.75	1.07	0.78	1.09	0.99	1.17
1981	0.55	0.51	2.12	0.99	2.21	0.40	0.75	0.84	1.11	2.80	0.79	1.09
Departure (inches)	-0.53	+0.49	+0.98	-0.17	+1.25	-0.52	0.00	-0.23	+0.33	+1.71	-0.20	-0.08

Table 3. Number and percent of total upland game hunters afield who reported hunting each game species during 1976-81.

Species	Number of Hunters						Percent of Total					
	1976	1977	1978	1979	1980	1981	1976	1977	1978	1979	1980	1981
Pheasant	74,029	67,195	83,800	87,462	84,868	83,408	81.1	75.0	79.6	83.4	84.7	86.7
Chukar	14,171	12,691	16,291	15,210	15,100	12,907	15.5	14.2	15.5	14.5	15.1	13.4
Mourning dove	31,293	26,905	35,985	34,903	32,627	30,060	34.3	30.0	34.2	33.3	32.6	31.2
Sage grouse	15,283	14,078	16,231	16,927	15,219	10,083	16.8	15.7	15.4	16.1	15.2	10.5
Forest grouse	21,186	19,188	25,318	21,993	19,511	14,329	23.2	21.4	24.0	21.0	19.5	14.9
Quail	5,215	4,446	5,924	5,632	4,156	4,946	5.7	5.0	5.6	5.4	4.1	5.1
Hungarian partridge	3,517	3,557	4,743	3,435	3,359	3,545	38.6	4.0	4.5	3.3	3.4	3.7
Wild turkey**	130*	152*	189*	126*	70*	115*	0.1	0.2	0.2	0.1	0.1	0.1
Sharp-tailed grouse**	--	--	--	156	--	--	--	--	--	0.1	--	--
Band-tailed pigeon**	--	--	--	62	62	67	--	--	--	0.1	0.1	0.1
Cottontail rabbit	28,239	35,831	35,590	33,385	25,156	25,906	31.0	40.0	33.8	31.8	25.1	26.9
Snowshoe hare	8,502	9,752	8,205	6,787	4,048	3,554	9.3	10.9	7.8	6.5	4.0	3.7
<b>TOTAL HUNTERS***</b>	<b>91,226</b>	<b>89,593</b>	<b>105,288</b>	<b>104,834</b>	<b>100,164</b>	<b>96,196</b>						

\*Includes both spring and fall hunts.

\*\*Although wild turkey, band-tailed pigeon 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 that the columns do not total. This is due to the fact that many upland game hunters hunted more than one species.



Table 4. Percent of hunter trips resulting in failure to bag at least one bird, 1961-81.

Year	Pheasant			Dove			Chukar			Sage Grouse			Forest Grouse			Quail			Huns		
	O Bag	Hunt. Trips	%	O Bag	Hunt. Trips	%	O Bag	Hunt. Trips	%	O Bag	Hunt. Trips	%	O Bag	Hunt. Trips	%	O Bag	Hunt. Trips	%	O Bag	Hunt. Trips	%
1961	714	3,204	22	51	583	9	318	539	59	--	--	--	--	--	--	109	383	28	72	123	59
1962	500	2,685	19	39	456	9	147	362	41	--	--	--	--	--	--	62	201	31	36	108	33
1963	795	3,317	24	53	691	8	248	550	45	220	468	47	188	281	67	71	305	23	59	177	33
1964	911	3,115	29	60	681	9	266	568	47	45	154	29	144	229	63	94	316	30	62	150	41
1965	1,165	4,009	29	--	--	--	486	851	57	82	168	49	225	311	72	128	371	34	93	233	40
1966	1,242	4,297	29	136	1,067	13	423	881	48	54	131	41	133	331	40	106	315	34	63	219	29
1967	1,353	4,833	28	153	1,319	12	477	915	52	138	266	52	194	475	41	161	424	38	116	315	29
1968	1,422	5,223	27	236	1,312	18	495	1,095	45	185	449	41	177	665	27	171	457	37	132	347	38
1969	1,897	5,335	36	214	1,568	14	647	1,250	52	241	648	37	273	646	42	182	465	39	148	292	51
1970	1,546	4,686	33	193	1,274	15	466	962	48	257	603	43	209	666	31	126	314	40	101	210	48
1971	1,783	5,049	35	210	1,333	16	464	934	50	234	625	37	223	673	33	162	385	42	87	210	41
1972	1,743	4,617	38	270	1,421	19	457	827	55	259	593	44	271	794	34	154	339	45	120	224	54
1973	1,659	4,699	35	209	1,596	13	414	824	50	226	533	41	329	1,019	32	128	311	41	97	196	49
1974	2,347	5,323	44	323	1,951	17	511	955	54	292	668	44	388	1,259	31	157	333	47	108	227	48
1975	2,472	5,604	44	329	2,554	13	607	1,105	55	374	901	42	535	1,354	40	177	406	44	121	220	55
1976	1,739	4,294	40	273	1,709	16	408	781	52	259	783	33	371	1,131	33	105	266	39	87	184	47
1977	1,874	5,175	36	295	1,967	15	511	943	54	397	972	41	528	1,388	38	125	299	42	106	247	43
1978	1,507	4,858	31	279	1,986	14	343	882	39	301	853	35	419	1,419	30	103	306	34	85	246	35
1979	2,222	7,024	32	343	2,671	13	528	1,150	46	400	1,215	33	585	1,691	35	130	403	32	119	243	49
1980	1,684	5,867	29	258	2,145	12	458	1,008	45	392	944	42	501	1,283	39	87	254	34	75	206	36
1981	1,305	4,637	28	239	1,558	15	302	669	45	184	493	37	297	741	40	97	241	40	57	172	33

AVERAGES  
(1961-80)

32 13 50 41 41 37 44

Table 5. Regional and statewide summary of effort expended on upland game summer inventory, 1971-81.

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	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	--					
<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					
<u>Chukar</u>																	
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					

Table 5 (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>Forest Grouse</u>														
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		
<u>Sage Grouse</u>														
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		
<u>Hungarian Partridge</u>														
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		



Table 6. Season framework for upland game during 1981.

Species	Season Dates	Daily Bag Limit	Possession Limit	Area Open
Pheasant	Nov. 7-15	2 cocks	4 cocks	Statewide except Box Elder, Cache, Davis, Duchesne, Uintah, and Weber counties.
	Nov. 7-20	2 cocks	4 cocks	Box Elder, Cache, Davis and Weber counties.
	Nov. 7-22	2 cocks	4 cocks	Duchesne and Uintah counties.
	Nov. 7-Dec. 6	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, 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, Sevier, Washington and Wayne counties.
Chukar	Sept. 19, 1981-Jan. 31, 1982	5	10	Statewide except as noted below.
	Sept. 19-Nov. 30	5	10	Cache, Davis, Morgan, Rich, Sanpete, Summit, and Wasatch counties, and those portions of the following counties lying east of Interstate Highway 15: Box Elder, Juab, Salt Lake, Utah and Weber counties.
Daggett, Duchesne and Uintah counties were closed to chukar hunting during 1981.				
Sage grouse	Sept. 19-25	3	6	Beaver, Garfield, Iron, Kane, Millard, Piute, Sevier, and Wayne counties.
	Sept. 19-25	2	4	Box Elder (part), Daggett, Duchesne, Grand (part), Uintah, and Wasatch (part).

Table 6 (continued)

Species	Season Dates	Daily Bag Limit	Possession Limit	Area Open
	Sept. 19-25	1	2	Box Elder (part), Cache, Morgan, Rich, Summit, San Juan (part), Wasatch (part) and Weber counties.
	Sept. 21-25	1	2	Tooele County (part).
The following counties were closed to sage grouse hunting during 1980:				
				Carbon, Davis, Emery, Grand (part), Juab, Salt Lake, Sanpete, Tooele (part), Utah, Wasatch (part), and Washington.
Forest grouse	Sept. 19- Nov. 30	4 (aggregate)	8 (aggregate)	Statewide.
Quail	Nov. 7-15	5	10	Statewide except Duchesne, Morgan, Summit, Uintah and Washington counties.
	Nov. 7-22	5	10	Duchesne and Uintah counties.
	Nov. 7-Dec. 31	8	16	Washington County.
Morgan and Summit counties were closed to quail hunting in 1980.				
Hungarian partridge	Sept. 19, 1981- Jan. 31, 1982	5	10	Tooele County. Parts of Box Elder, Juab, Salt Lake, Utah and Weber counties.
	Sept. 19-Nov. 30	5	10	Cache, Davis, Morgan, Rich and Summit counties. Parts of Box Elder, Juab, Salt Lake, Utah and Weber counties.

Table 6 (continued)

Species	Season Dates	Daily Bag Limit	Possession Limit	Area Open
Wild turkey				
Spring hunt	May 2-17	Season limit 1 male turkey		Garfield (part), Grand, Iron, Kane and Washington counties.
Fall hunt	Sept. 19- Oct. 11	Season limit 1 turkey of either sex		Grand, and San Juan (part), counties.
	Sept. 19-30	Season limit 1 turkey of either sex		Iron, Kane, Wayne, Washington and Garfield (part) counties.
Snowshoe hare	Sept. 19, 1981 Jan. 31, 1982	5	10	Statewide.
Cottontail rabbit	Sept. 20, 1980 Jan. 31, 1981	10	20	Statewide except Box Elder (part), Cache, Carbon, Daggett, Davis, Duchesne, Morgan, Rich, Summit, Uintah and Weber counties.
	Sept. 19, 1981- Jan. 31, 1982	5	10	Box Elder (part), Cache, Carbon, Daggett, Davis, Duchesne, Morgan, Rich, Summit, Uintah and Weber counties.

## SAVE-A-WING PROGRAM

During 1981 hunters were requested to participate in an effort to collect wings from upland game birds to be used for an age-classification study.

A total of 40 hunters agreed to cooperate in the study by collecting one wing of each bird they harvested, and returning those wings to the upland game section of the Division of Wildlife Resources.

### Results for 1981

#### Mis-identification

Of 283 wings, one hungarian partridge wing was called a chukar, 2 groups of California quail wings were called Gambel's quail, and one blue grouse wing was called ruffed grouse. A total of 11 wings (4%) were mis-identified. Lest mis-identification be construed as not a problem based on this data, it must be remembered that the cooperators were probably the more knowledgeable and avid upland game bird hunters. Their estimates should therefore be considered a minimum error for harvest questionnaire information. Errors will tend to over-estimate chukar and ruffed grouse and under-estimate hungarian partridge and blue grouse.

#### Costs

Envelopes and postage for this sample cost \$405.22. An additional 150 man-hours were figured in setting up the program, ordering the printing, making the mailings, and distributing the envelopes, and analyzing the wings for a labor cost of \$1.50 per returned wing. This cost is probably comparable to cost per wing collected at checking stations. Wing barrels undoubtedly remain the cheapest collection method. The cost per collected wing for mourning dove and chukar was considerably less than for other species (Table 1).

Table 1. Average return postage costs per wing for envelopes containing varying numbers of wings.

Species	Postage per wing with package of:						Total (n)
	1 wing	2 wings	3 wings	4 wings	5 wings	6 wings	
Pheasant	.42	.28	.24	.26		.23	.28(65)
M. Dove		.12		.12			.12(8)
Chukar		.18	.18	.15	.14		.15(50)
S. Grouse	.58	.35		.29			.38(17)
B. Grouse	.35	.30	.25	.26	.18		.27(27)
R. Grouse	.36	.18				.15	.26(21)

This was true because chukar and mourning dove wings weigh less per wing than the other species so the return postage is less and because more birds of



these species are shot per trip so more are included per envelope, thus reducing the cost per wing. In most cases, wings sent in packages of 2 or more were half as expensive as single wings. Provided the program is continued next year, hunters will be asked to hold their wings and to return no less than two per envelope.

### Species Composition

The most wings were collected for pheasant and chukar (Table 2). Based on a statewide sample of 69 and 77 respectively, a sufficient sample size was collected for these two species.

Table 2. Total wings mailed in by species, county, and region in the 1981 Save-a-Wing Program.

Region & County	Pheasant	Calif. Quail	Mourn. Dove	Chukar	Sage Grouse	Blue Grouse	Ruffed Grouse	Hungarian Partridge
Emery						1		
SERO TOTAL						1		
Iron			11					
SRO TOTAL			11					
Uintah		8				1		
Duchesne					4			
Daggett						2		
NERO TOTAL		8			4	3		
Tooele	0			4	1			
Juab	3	1	7	13		2		
Salt Lake	2			3			1	
Utah	3		4	9		1	1	
Wasatch						2		
CRO TOTAL	8	1	11	29	1	5	2	
Box Elder	17		2	48	11	1		14
Cache	12		3		2	12	4	
Davis	11					5	4	
Rich					2		1	
Weber						2	3	1
Summit					2	5	3	
Morgan						2	1	
NRO TOTAL	61		5	48	17	27	16	15
TOTAL	69	9	27	77	22	36	18	15

However, the majority of the wings collected were from counties with adequate samples already collected at checking stations or wing barrels.

In addition, the cost-effectiveness of this wing envelope program is reduced by the decreased quantity of data collected. For example, because of our general pheasant season opens late (the first Saturday in November) most young of the year are molting primary number 10 and some have completed the molt so that back-dating does not give us the first hatching peak. Therefore, pheasant wings only tell us age ratios. Classification of yearlings in upland

game species cannot be done because the season starts too late. Most upland game birds have completed molt primary 9 by the third Saturday in September. As a result, the size of the yearling cohort cannot be accurately determined and thus the survival rates and percentage of yearlings breeding cannot be identified. Thus, the wings we collect are not providing maximum information biologically possible because season opening dates are too late.

Age and sex ratio's

However, age and sex ratio's for most species can be determined from adequate wing sample sizes. But, due to differential sex and age vulnerability to the gun and hunter access, these ratios do not represent these true population parameters. They do provide indices for comparison between areas and years (Table 3).

Improvement in sample sizes for sex and age ratios by county are only marginally improved by the Save-a-Wing Program. However, regional totals and cumulative totals by species may provide significant additional information and this programs success cannot be analyzed using the first year. Efficiency should improve.

Table 3. Age and sex ratios by species, county, region and total in 1981.

Species:	County	IMM. F.	IMM. M.	AD. F.	AD. M.	MIMM FIMM	AD. M. AD. F.	IMM. 100 AD	IMM. 100 AD F
B. Grouse									
	Weber		1		1				
	Davis	1	1	2	2	1.00	1.00	50	50
	Cache	4	2	4	1	0.50	0.25	120	150
	Summitt	1	1	2	1				
	Morgan				2				
	Box Elder			1					
	NRO TOTAL	6	4	9	7	0.67	0.78	63	111
	Uintah			1					
	Daggett	1			1				
	Juab	2							
	Wasatch	1	1						
	Utah		1						
	CRO TOTAL	3	2			0.67			
	TOTAL	10	6	10	9	0.60	0.90	84	160
R. Grouse									
	Weber	1			2				
	Davis	2		1	1				200
	Cache			3	1				
	Summit		1	1	1				
	Morgan			1					
	Rich			1					
	NRO TOTAL	3	1	7	5	0.33	0.71	33	57
	Utah			1					
	Salt Lake		1						
	CRO TOTAL		1	1				100	100
	TOTAL	3	2	8	5	0.67	0.63	38	63

(Continued)

Table 3. (Continued)

Species:	County	IMM. F.	IMM. M.	AD. F.	AD. M.	MIMM FIMM	AD. M. AD. F.	IMM. 100 AD	IMM. 100 AD F
Pheasant									
	Weber		19		3			633	
	Davis		9						
	Cache		12						
	Box Elder		11		6			183	
	NRO TOTAL		51		9			567	
	Juab		3						
	Utah		2		1			200	
	Salt Lake		2						
	CRO TOTAL		7		1			700	
	TOTAL		58		10			580	
Sage Grouse									
	Cache	2							
	Summit		1	1					
	Rich			2					
	Box Elder	6	4	1		0.66		1000	1000
	NRO TOTAL	8	5	4	0	0.63		325	325
	Duchesne	2	2			1.00			
	Tooele	1							
	CRO TOTAL	1							
	TOTAL	11	7	4	0	0.64		450	450
H. Partridge									
	Weber	1							
	Box Elder	9	3	1	1	0.33	1.00	450	900
	NRO TOTAL	10	3	1	1	0.30	1.00	650	1300
	TOTAL	10	3	1	1	0.30	1.00	650	1300
M. Dove									
	Cache	2		1					
	Box Elder	2							
	NRO TOTAL	4		1				400	
	Iron		9		2			450	
	Juab		3		4			75	
	Utah		1		3			33	
	CRO TOTAL		13		9			144	
	TOTAL		17		10			170	
Chukar									
	Box Elder	20	10	8	12	0.50	1.50	150	375
	Juab	2		3	8		2.67	180	67
	Utah	7	1		1	0.14		800	
	Salt Lake	1	1		1	1.00		200	
	Tooele	1	3			3.00			
	CRO TOTAL	11	5	3	10	0.45	3.33	123	533
	TOTAL	31	15	11	22	0.48	0.50	139	418
C. Quail									
	Uintah		5		3			167	

### Hatching Chronology

Hatching dates were worked up for ruffed grouse, blue grouse, sage grouse, and pheasant using statewide samples. Mean hatching date for 6 immature ruffed grouse was June 5 (Table 4).

Table 4. Ruffed grouse hatching dates calculated from wings collected via mail envelopes during 1981. (After Tabor 1963)

Kill Date	Lst. Pri. Molt	Length MM	County	Age Weeks	Hatch Date
9/27	8	121	Salt Lake	16	6/7
9/26	8	119	Davis	16	6/6
9/26	8	131	Davis	17	5/30
10/2	8	134	Davis	17	6/5
10/10	8	Full Grown	Cache	17	6/13
9/19	8	122	Summit	16	5/30

Mean Hatching date for 16 immature blue grouse was June 21 (Table 5). Mean hatching date for 22 sage grouse was June 9 (Figure 2). Although a substantial portion of the hatching occurred in later June. The major hatching occurred prior to June 16 with a secondary peak the last of June and first of July and a third peak the third week in August. (Figure 3).

Table 5. Blue grouse hatching dates calculated from wings collected via mail envelopes during 1981 (after Zwichel 1966).

Kill Date	Lst. Pri. Molt	Length MM	County	Age Weeks	Hatch Date
9/24	8	152	Weber	16	6/4
11/11	8	175	Davis	16	7/29
11/11	8	163	Davis	16	7/29
10/10	8	Full Grown	Cache	16	6/20
--	8	113	Cache	14	--
--	8	155	Cache	16	--
--	8	151	Cache	15	--
9/19	8	142	Cache	16	5/30
9/19	8	35	Cache	11	7/4
9/19	8	45	Cache	11	7/4
10/25	8	Full Grown	Cache	16	7/5
9/19	8	102	Summit	13	6/20
9/19	8	100	Summit	13	6/20
9/27	8	132	Wasatch	15	6/14
9/27	8	148	Wasatch	16	6/7
9/22	8	66	Juab	12	6/30
9/23	8	120	Juab	14	6/17
9/19	8	135	Utah	15	6/6
9/20	8	155	Daggett	16	5/31

### Hunter Success

Only 9 of the 40 cooperators returned hunter log cards. Hunters will be reminded periodically to return those cards next year. Success rates were comparable for most species except chukar with 1980 harvest rates (Table 6). Success rates were generally higher but not statistically higher.

Table 6. Hunter success indices by species from upland game hunter logs in 1981.

Species	SAMPLE SIZE		Birds Per Hunter	Birds Per Hunter-Day
	Hunters	Birds		
Sage grouse	2	4	2.0	1.3
Pheasant	5	6	1.2	1.2
Chukar	2	13	13.0	2.6
M. Dove	2	17	9.0	3.4
B. Grouse	4	8	2.0	1.0
C. Quail	1	1	1.0	1.0

The following percentages of total reported harvest occurred opening weekend; sage grouse = 67%; pheasant = 61%, blue grouse = 39%, chukar 26%. Sixty-one percent of the chukar harvest occurred in September and 69% of the blue grouse harvest occurred in September. December accounted for 19% of the chukar harvest and January 9%.

Definite peaks in chukar hunting activity were observed in September and December. Sixty-seven percent of the chukar harvest occurred on weekends. Sixty-eight percent of the pheasant harvest occurred on weekends.