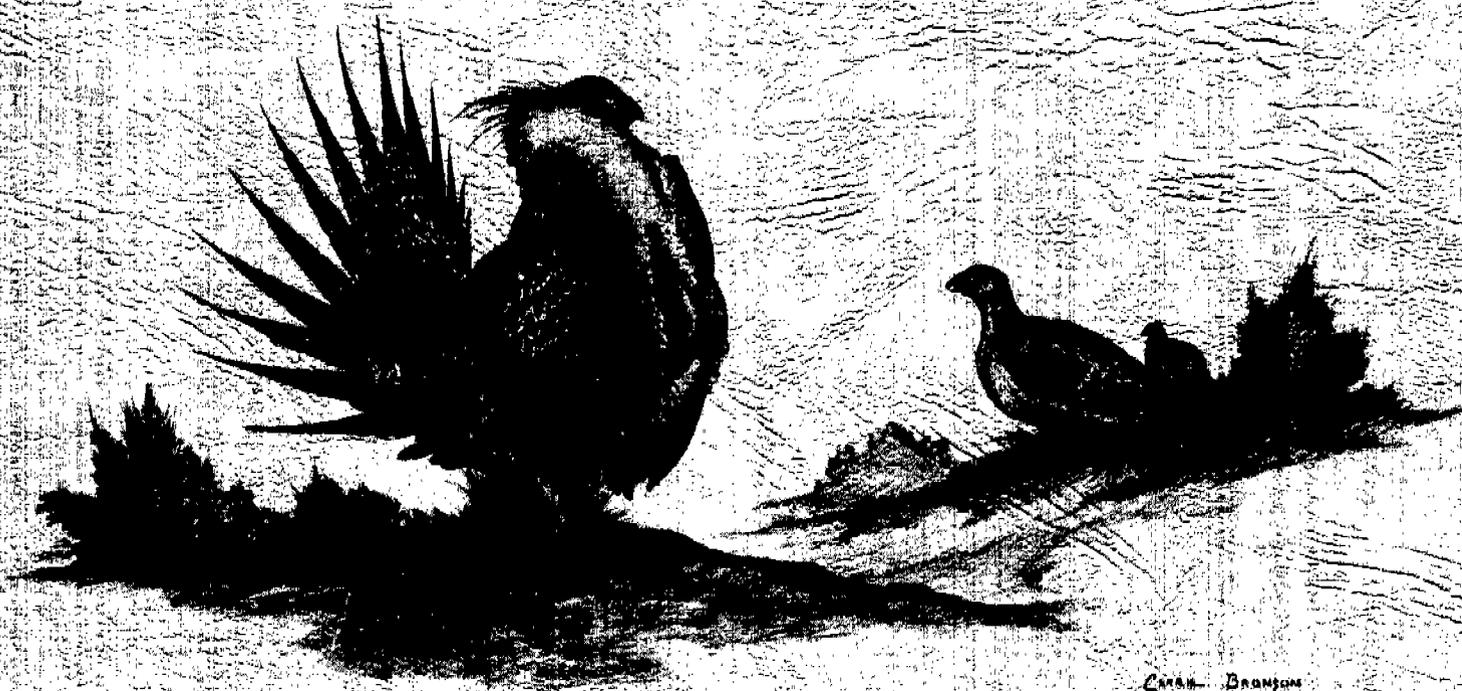


UTAH UPLAND GAME Annual Report 1971



CAROL BRANTON

PUBLICATION NUMBER 72-11
Federal Aid Project W-65-R-D-20

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE RESOURCES
John E. Phelps, Director

UTAH
UPLAND GAME
Annual Report
1972

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PUBLICATION NO. 72-11
Completion Report for Federal Aid Project W-65-R-D-20

Utah State Department of Natural Resources
DIVISION OF WILDLIFE RESOURCES

John E. Phelps
Director

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JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT
(Inventory)

State of U T A H

Project No. W-65-R-D-20

Project Title: State-wide Wildlife
Management Inventory

Job No. A-4

Job Title: State-wide Upland Game
Inventory and Management

Period Covered: January 1, 1971 to June 30, 1972

Abstract: This report includes upland game inventory and harvest data relating to the 1971-72 hunting seasons. Results of annual inventory and harvest surveys and long-term trends of indexes derived by each method are included. Data obtained in 1971 are compared to 1970 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, 1970 through February 10, 1971, as snow cover conditions allowed. Indexes derived include hen-cock ratios and the total number of pheasants observed per 100 hours. Annual summer roadside counts (three or more per route) were conducted from July 22 - August 3 on permanently established routes. Indexes 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 nation-wide survey administered by the Bureau of Sport Fisheries and Wildlife. Call-counts are conducted over 15 permanent, 20-mile routes. One count was made on each route between May 20-30. Doves were banded during the preseason banding period (June 1-August 20) primarily using mist nets at waterholes.

Random brood counts were conducted on chukar and Hungarian partridge, forest grouse (ruffed and blue), sage grouse, wild turkey and quail from July 10-August 5. Indexes derived for each species include mean brood size, young per 100 adults and birds observed per 100 hours effort.

Sage grouse strutting ground counts were conducted from March 15-May 1. Total cocks counted, average cocks per ground and percent change from 1970 for comparable grounds were determined on a county basis.

One Gambel's quail call-count route was run in Washington County in late April and early May. 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. Indexes derived include rabbits per mile and young per 100 adults.

Two separate harvest questionnaires were mailed to an approximate 11 percent sample of eligible licensees. One, concerning the harvest of game birds excluding wild turkeys, was mailed in February, 1972 and the other concerning cottontails was mailed following the close of the season in March, 1972. Questions were asked concerning the number harvested and the number of days hunted in each county by species. Additional questions were asked of cottontail hunters concerning harvest by month and whether or not they hunted upland game birds in 1971. A separate questionnaire was also sent to all wild turkey permittees following the close of both the spring and fall seasons. Game bird and cottontail rabbit questionnaires were processed by the University of Utah Computer Center and turkey questionnaires by Game Management Section personnel. Total harvest, hunters and hunter-days afield were estimated using standard projection factors based on total eligible licensees and total questionnaire returns. Hunter success per day and per hunter was determined as well as the distribution of harvest and hunting pressure by county.

Field bag checks of upland game hunters were made at random or at checking stations during each hunting season. Indexes derived include bag per hunter (per day), bag per 100 hours, average hours per hunter-day and average hours per bird bagged.

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

Approved by: *William V. Hancock*
Chief, Game Management

Date *August 10, 1972*

for *Wald R. Smith*
Federal Aid Coordinator

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 first edition of this annual Upland Game Report. It is a consolidation of, and annual completion report for, information compiled during all inventory and harvest surveys conducted under Federal Aid Project, W-65-R, Job A-4. Information contained herein was compiled by conservation officers, biologists and game managers of the Division of Wildlife Resources. Harvest information previously published in the annual upland game harvest book is included.

This report serves as a handbook of inventory and harvest trend 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 form of upland game hunted in Utah. Data is presented primarily in tabular form with limited narrative material. The first page of each section provides a summary of population status and trend as indicated by inventory and harvest data.

During 1971, a total of 100,183 Utah sportsmen spent 660,789 days afield in pursuit of various upland game species (Appendix, Table 2). The harvest of upland game totaled 868,989. The framework for the 1971 upland game hunting seasons is shown in Appendix, Table 3. Harvest statistics by species were as follows:



Species	Hunters Afield	Total Harvest	Hunter Days	Bag/ Hunter-day	Bag/Hunter for Season
Pheasant	87,878	259,189	294,618	0.88	2.95
Mourning dove	26,064	226,645	81,271	2.79	8.70
Chukar partridge	17,917	61,151	55,378	1.10	3.41
Sage grouse	12,893	20,013	21,509	0.93	1.55
Forest grouse	13,363	31,901	29,100	1.10	2.39
Quail	8,039	21,082	21,595	0.98	2.62
Hungarian partridge	4,276	9,407	11,011	0.85	2.20
Wild turkey					
spring	215	26	576	0.04	0.11
fall	174	60	444	0.14	0.21
Cottontail	30,824	239,511	145,287	1.65	7.78

Total hunters afield for all species of upland game birds = 92,539

Hunters afield for cottontails who did not hunt game birds = 7,644

Total upland game hunters afield = 100,183

The harvest of game birds was based on a 43.2 percent return of 15,149 questionnaires and cottontail harvest data on a 34.4 percent return of 14,896 questionnaires.

The weather during the breeding season (April and May) was generally slightly cooler and wetter than normal. During June and July, temperatures were slightly above normal and precipitation slightly below normal. Above normal rainfall occurred in August. The fall hunting seasons were plagued by inclement weather. Rainfall occurred State-wide for three days prior to the opening of the mourning dove season and intermittently during the first week of the season. For the third, consecutive year October temperatures averaged well below normal (Appendix, Table 1). The earliest measureable snowfall of record fell in many localities beginning on October 16th. Over half of the weather stations in the state either tied or exceeded previous record snowfall accumulations for the month. In addition, many stations recorded the greatest October snowfall ever in a 24-hour period (Climatological Data for Utah, October, 1971). These conditions undoubtedly had an adverse effect on the latter part of the forest grouse season, especially during the deer hunt, and on the pheasant and quail seasons.

RING-NECKED PHEASANT

SUMMARY

Indexes derived from inventory methods all indicated increased pheasant abundance in 1971 over 1970 on a State-wide basis. The greatest increase was in the Northern region. Only the southeastern region showed a decline from 1970. However, the 1971 State-wide population level was still slightly below the 1962-70 average.

The increased pheasant abundance was not reflected in the harvest due to an unseasonal, mid-October snow storm, which concentrated pheasants to heavy cover and substantially altered their usual distribution for the opening of the hunting season. Inclement weather during the first three days of the season also proved detrimental. The total harvest increased slightly from 1970 due to increased hunters and hunter-days. Hunter success, both per day and per hunter, was below 1970.

The number of pheasants bagged per hunter-day was the lowest on record; however, this is not indicative of an all-time low population. The weather conditions cited above were the primary cause of reduced success. Additionally, since 1967 longer hunting seasons have been held over much of the State. More hunter-days have been spent afield after a major portion of the annual surplus has been harvested. This has had a depressing effect on the success per day index but has generally increased success per hunter on a season basis.



Winter Sex-ratio Counts

Results of this survey for 1971 and long-term trends are shown in Tables 1 and 2 of this section respectively. Comparisons to 1970 and the average on a State-wide basis are as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total pheasants counted (roadside)	14,552	+38	-14
Hens per cock	4.4	+ 2	+10
Pheasants observed per 100 hours	2,044	+51	+16

These data indicate a substantial increase in breeding density from 1970. The hen-cock ratio showed little change from 1970, but relatively fewer cocks in comparison to the average. This is probably a reflection of the longer hunting seasons of recent years. Assuming a pre-season ratio of 1.1 hens per cock or 90 cocks per 100 hens, these data indicate that 74 percent of the 1970 fall rooster population was harvested during the hunting season.

Roadside Counts

A summary of this survey for 1971 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. Survey results for 1971 compared to 1970 and the average on a State-wide basis as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total pheasants observed	4,372	+32	+ 6
Total miles driven	3,115	+11	+13
Pheasants per mile	1.40	+19	- 9
Young per mile	1.06	+23	-11
Young per hen	4.09	+11	- 6
Percent of hens with young	75	+ 9	- 3

Temperature and precipitation were slightly below normal during the nesting season (April - May). Production improved over 1970 as indicated by increased young per hen and percent of hens with young indexes, but was slightly below average. This, combined with an indicated increase in breeding population level, resulted in an increase in pheasant density; however, the State-wide population was still slightly below average.

Harvest

Hunter Questionnaire

Results of the hunter questionnaire survey for 1971 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 State-wide harvest statistics in Table 13. Following is a comparison of the 1971 harvest statistics to 1970 and the average:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Pheasant hunters	87,878	+12	+ 4
Pheasants harvested	259,189	+ 3	+ 3
Hunter-days afield	294,618	+20	+48
Pheasants per hunter	2.95	- 8	- 1
Pheasants per hunter-day	0.88	-14	-31

Hunting pressure increased over 1970 in terms of both total hunters and hunter-days afield. Hunter success decreased from both 1970 and the average. This was attributable to adverse weather conditions both preceding and during the season. Unusually heavy snowfall in mid-October drove pheasants to heavy cover, substantially altering their distribution for the season opening on the second Saturday of November. The opening weekend of the season saw extensive rainfall over much of the State.

Long-term trends (1948-70) of total pheasant hunters, harvest and hunter success are shown in Figure 1. These indicate a slight downward trend in total hunters and hunter success per day with an upward trend in birds per season, hunter days and total harvest. The downward trend in pheasants bagged per hunter day is considered to best indicate the trend in the population. It reflects a decrease in habitat quality and quantity due to cleaning farm, urbanization and other similar factors.

Field Bag Checks

A summary of field-bag-check data for 1971 is shown in Table 14. The hunter success trend determined via bag check since 1966 is found in Table 15. A comparison of 1971 data on a State-wide basis to 1970 and the average follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total hunters checked	4,664	+17	+33
Total hours hunted	15,453	+13	+25
Pheasants per hunter (complete hunts)	1.05	+ 8	- 1
Pheasants bagged per 100 hours	21	+ 5	- 9
Average hours per hunter-day (complete hunts)	5.00	+ 6	+ 6
Hours hunted per pheasant bagged	4.8	- 5	+ 9

Results of this survey indicate that hunter success in 1971 was slightly better than 1970 and about the same as the average for the previous five years. Pheasants bagged per hunter-day as indicated by this survey was 19 percent higher than that shown by the harvest questionnaire, the widest disparity to date between these indexes. It is suspected that because of the adverse weather conditions, many hunters went afield for the opening but either failed to hunt or hunted for an unusually short period of time. They left the field earlier than usual and consequently were not checked by conservation officers. When questionnaires were received by this segment of hunters, they still reported a hunter-day's effort and consequently depressed the State-wide hunter success index in relation to the field-bag-check index.

The average hunter spent 5 hours per day hunting pheasants, an increase in effort over both 1970 and the average. The amount of time required to bag one pheasant decreased from 1970, but was higher than the average.

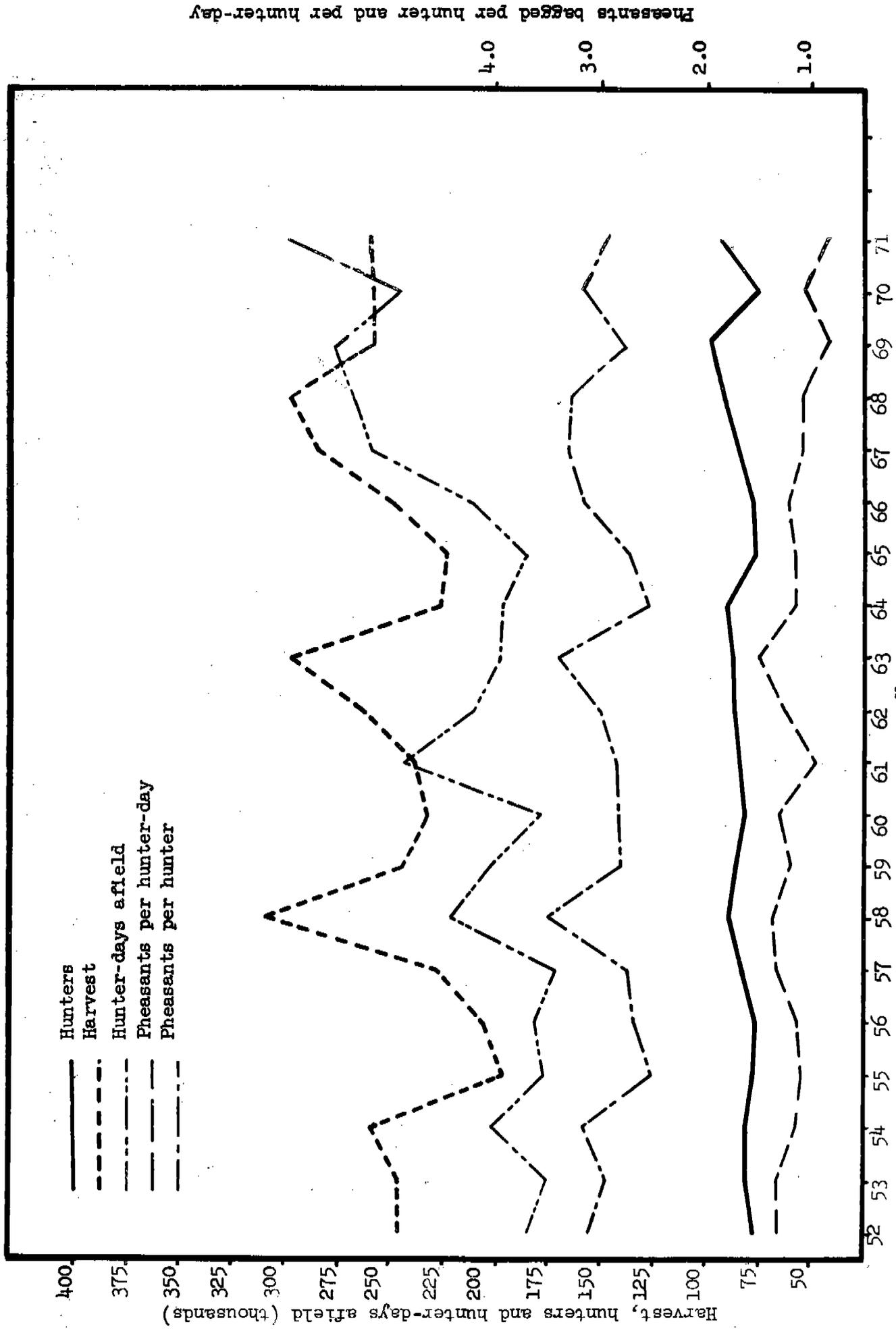


Figure 1. State-wide trend of pheasant harvest statistics.

Table I. Summary of Pheasant Winter Sex-Ratio Counts, 1970-71.

Region & County	Roadside Observations				Flushing Observations				Effort Expended				Pheas.Obs./ 100 Hrs. of 100 Road. Counts			
	Hens/ Cocks/		Hens/ Cocks/		Hens/ Cocks/		Hens/ Cocks/		Vehicle Miles		Hours Effort					
	Cocks	Hens	Total	Cock	Hens	Total	Cock	Hens	100	Hens	100	Vehicle		Walk.	Total	Road.
Northern Region																
Box Elder	170	679	849	3.99	25	---	---	---	---	---	---	520	32	32	32	2653
Cache	156	566	722	3.63	28	---	---	---	---	---	---	451	38	3	41	1900
Davis	78	739	817	9.47	11	---	---	---	---	---	---	243	21	---	21	3890
Morgan	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rich	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Summit	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Weber	12	145	157	12.08	8	3	64	67	21.33	5	---	100	5	---	5	3140
Regional Totals	416	2129	2545	5.12	20	3	64	67	21.33	5	---	1314	96	3	99	2651
Central Region																
Juab	75	267	342	3.56	28	0	0	0	---	---	---	81	7	0	7	4886
Salt Lake	211	1540	1751	7.30	14	0	0	0	---	---	---	680	55.5	1	56.5	3155
Sanpete	326	1137	1463	3.49	29	2	12	14	6.00	17	---	985	92	9	101	1590
Tooele	415	2026	2441	4.88	20	8	24	32	3.00	33	---	846	57.5	1	58.5	4245
Utah	423	1925	2348	4.55	22	9	69	78	7.67	13	---	1271	133.25	4.5	137.75	1762
Wasatch	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Regional Totals	1450	6895	8345	4.76	21	19	105	124	5.53	18	---	3863	345	15.5	360	2419
Southern Region																
Beaver	5	44	49	8.80	11	---	---	---	---	---	---	54	8	0	8	612
Garfield	1	21	22	21.00	5	1	0	1	---	---	---	50	2.5	3	5.5	880
Iron	---	---	---	---	---	28	112	140	4.00	25	---	493	7	12	19	---
Kane	---	---	---	---	---	---	---	---	---	---	---	158	4.25	---	4.25	---
Millard	154	607	761	3.94	25	14	72	86	5.14	19	---	439	56	2	58	1359
Piute	3	11	14	3.67	27	4	13	17	3.25	31	---	47	3	3	6	467
Sevier	169	773	942	4.57	22	---	---	---	---	---	---	442	37	0	37	2546
Washington	13	58	71	4.46	22	16	76	92	4.75	21	---	172	12	8	20	592
Wayne	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Regional Totals	345	1514	1859	4.39	23	63	273	336	4.33	23	---	1855	130	28	158	1430
Northeastern Region																
Daggett	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Duchesne	149	317	466	2.13	47	---	---	---	---	---	---	597	45	1	46	1036
Uintah	104	434	538	4.17	24	---	---	---	---	---	---	457	26	0	26	2069
Regional Totals	253	751	1004	2.96	34	---	---	---	---	---	---	1054	71	1	72	1414
Southeastern Region																
Carbon	101	204	305	2.02	50	44	123	167	2.80	36	---	551	33	4.5	37.5	924
Emery	109	385	494	3.53	28	27	49	76	1.81	55	---	429	36.5	12	48.5	1353
Grand	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
San Juan	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Regional Totals	210	589	799	2.80	36	71	172	243	2.42	41	---	980	69.5	16.5	86	1150
STATE TOTALS	2674	11878	14552	2.44	23	156	614	770	3.94	25	---	9066	712	64	776	2044

Table 2. Trend of Pheasant Roadside Winter Sex-Ratio Counts 1964-1971.

Region & County	1964-65		1965-66		1966-67		1967-68		1968-69		1969-70		1970-71	
	Hens/ Cock	Birds/ 100 hr.	Hens/ Cock	Birds/ 100 hr.	Hens/ Cock	Birds/ 100 hr.								
Northern Region														
Box Elder	4.3	3.1	4.3	5.8	4.4	2612	4.8	1900	4.0	2653				
Cache	5.8	4.4	4.5	4.0	4.5	7685	3.2	372	3.6	1900				
Davis	6.4	6.7	9.2	10.0	4.6	2141	7.7	1733	9.5	3890				
Morgan	---	---	---	1.5	1.3	433	---	---	---	---				
Rich	---	---	---	---	---	---	---	---	---	---				
Summit	---	---	0.9	0.9	0.3	262	---	---	---	---				
Weber	4.1	3.4	2.6	10.9	6.3	2959	6.7	1244	12.1	3140				
Regional Totals	4.6	3.7	4.3	5.2	4.6	3454	5.1	1163	5.1	2651				
Central Region														
Juab	4.4	5.3	6.5	3.2	4.1	6017	5.1	1585	3.6	4886				
Salt Lake	3.0	5.9	5.3	4.5	5.4	5076	6.0	2362	7.3	3155				
Sanpete	2.5	2.1	3.4	3.0	3.3	1001	3.1	1377	3.5	1590				
Tooele	5.3	9.9	10.2	5.3	6.1	8120	5.0	2311	4.9	4245				
Utah	3.9	4.7	4.3	4.1	5.4	2660	4.6	1567	4.6	1762				
Wasatch	---	---	---	---	---	---	---	---	---	---				
Regional Totals	3.7	5.3	5.1	4.3	5.2	3339	4.7	1899	4.8	2419				
Southern Region														
Beaver	5.2	1.7	2.1	5.2	5.8	1225	2.3	486	8.8	612				
Garfield	1.4	1.9	3.2	2.6	1.8	206	3.3	390	21.0	880				
Iron	2.4	2.1	2.9	3.5	2.5	1150	---	---	---	---				
Kane	---	0.2	---	0.5	---	---	---	---	---	---				
Millard	5.7	3.2	6.1	6.5	4.7	587	5.4	767	3.9	1351				
Piute	5.0	3.8	9.3	1.5	4.0	556	3.1	650	3.7	467				
Sevier	4.6	2.4	3.3	3.9	5.0	3268	6.0	1527	4.6	2546				
Washington	1.7	3.4	2.6	5.3	4.4	415	4.0	294	4.5	592				
Wayne	---	---	---	---	---	---	---	---	---	---				
Regional Totals	4.0	2.5	4.0	4.7	4.5	836	4.9	820	4.4	1430				
Northeastern Region														
Daggett	---	---	---	---	---	---	---	---	---	---				
Duchesne	1.5	1.9	1.6	2.4	1.8	770	2.2	428	2.1	1036				
Uintah	2.6	2.5	2.2	2.7	3.0	2834	3.0	3087	4.2	2069				
Regional Totals	1.9	2.1	1.8	2.5	2.5	1492	2.7	915	3.0	1414				
Southeastern Region														
Carbon	2.5	1.1	2.1	6.3	3.9	817	1.3	694	2.0	924				
Emery	2.3	2.0	2.0	3.0	3.3	3593	3.5	1623	3.5	1353				
Grand	---	---	---	---	---	---	---	---	---	---				
San Juan	---	---	---	---	---	---	---	---	---	---				
Regional Totals	2.3	1.8	2.0	3.3	3.4	2760	3.1	1333	2.8	1150				
STATE TOTALS	3.5	3.6	3.8	4.3	4.4	2167	4.3	1353	4.4	2044				

Table 3. Pheasant Summer Inventory Summary, 1971

Region & County	No. Routes	Distinct Mixed Yng. Adults w/o				Total Yng. Cocks	Total Hens	Total Yng. Cocks	Total Hens	Total Pheas.	Total Yng. Cocks	Total Hens	Pheas. / Mile	Yng. / Mean Mile Brood Ad.	% Hens w/Yng.			
		Total Broods	Yng. Hens	Ad. Hens	Young Hens													
Northern Region																		
Box Elder	2	122	24	119	6	42	12	10	40	161	12	213	1.75	1.32	4.96	4.02	75	
Cache	2	205	29	242	14	90	24	7	50	332	24	406	1.98	1.62	8.34	6.64	86	
Davis	1	92	29	189	4	18	8	5	38	207	8	253	2.25	2.25	6.52	5.45	87	
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	1	88	20	96	7	23	6	8	35	119	6	160	1.82	1.35	4.80	3.40	77	
Regional Totals	6	507	102	646	31	173	50	30	163	819	50	1032	2.04	1.62	6.33	5.02	82	
Central Region																		
Juab	1	40	1	7	0	0	3	2	3	7	3	13	0.32	0.18	7.00	2.33	67	
Salt Lake	2	230	49	282	0	20	24	25	74	302	24	400	1.74	1.31	5.76	4.08	66	
Sanpete	2	168	49	242	10	51	18	3	62	293	18	373	2.22	1.74	4.94	4.73	95	
Tooele	1	80	16	109	0	4	3	3	19	113	3	135	1.69	1.41	6.81	5.95	84	
Utah	4	360	85	501	42	103	45	57	184	604	45	833	2.31	1.68	5.89	3.28	69	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	10	878	200	1141	52	178	93	90	342	1319	93	1754	2.00	1.50	5.70	3.86	74	
Southern Region																		
Beaver	1	75	4	23	5	13	5	2	11	36	5	52	0.69	0.48	5.75	3.27	82	
Garfield	2	32	0	0	0	0	1	0	0	0	1	1	0.03	0	--	--	--	
Iron	2	150	6	43	7	50	2	8	21	93	2	116	0.77	0.62	7.17	4.43	62	
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	2	240	34	151	4	66	13	9	47	217	13	277	1.15	0.90	4.44	4.62	81	
Piute	1	20	1	5	0	0	1	0	1	5	1	7	0.35	0.25	5.00	5.00	100	
Sevier	2	127	58	304	22	104	23	14	94	408	23	525	4.13	3.21	5.24	4.34	85	
Washington	2	152	20	105	11	40	14	11	42	145	14	201	1.32	0.95	5.25	3.45	74	
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	12	796	123	631	49	273	59	44	216	904	59	1179	1.48	1.14	5.13	4.19	80	
Northeastern Region																		
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	3	364	10	65	5	12	17	7	22	77	17	116	0.32	0.21	6.50	3.50	68	
Uintah	2	224	18	109	4	14	20	18	40	123	20	183	0.82	0.55	6.05	3.08	55	
Regional Totals	5	588	28	174	9	26	37	25	62	200	37	299	0.51	0.34	6.21	3.23	60	
Southeastern Region																		
Carbon	2	165	1	5	0	0	3	0	1	5	3	9	0.05	0.03	5.00	5.00	100	
Emery	3	181	8	48	2	6	21	14	24	54	21	99	0.55	0.30	6.00	2.25	42	
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	5	346	9	53	2	6	24	14	25	59	24	108	0.31	0.17	5.89	2.36	44	
STATE TOTALS	38	3115	462	2645	143	656	263	203	808	3301	263	4372	1.40	1.06	5.73	4.09	75	

Table 4. Trend of pheasants observed per mile during summer roadside counts, 1962-71.

Region & County	Year									
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region										
Box Elder	3.06	1.29	2.00	1.56	1.85	0.91	0.82	0.68	0.57	1.75
Cache	1.90	1.15	0.71	1.62	2.30	1.50	2.20	1.46	1.90	1.98
Davis	3.12	1.06	1.26	0.70	2.12	1.39	0.83	4.04	0.70	2.75
Morgan	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	0.32	--	--	--	--
Weber	2.31	2.11	2.15	1.81	2.48	1.67	2.00	3.18	0.71	1.82
Regional Totals	2.47	1.31	1.38	1.39	2.13	1.24	1.27	1.89	1.20	2.04
Central Region										
Juab	4.06	1.61	1.56	1.32	1.28	1.30	1.07	0.46	1.20	0.32
Salt Lake	2.37	1.94	1.80	1.80	1.98	1.40	3.04	2.60	0.88	1.74
Sanpete	2.47	1.60	0.88	1.63	2.03	1.00	2.61	2.33	3.34	2.22
Tooele	1.90	1.82	1.78	2.03	5.96	1.40	3.70	2.82	3.18	1.69
Utah	3.80	4.87	3.97	2.67	2.37	2.40	2.74	2.49	1.84	2.31
Wasatch	--	--	--	--	--	--	--	--	--	--
Regional Totals	2.75	3.05	2.11	2.21	2.38	1.77	2.74	2.38	1.97	2.00
Southern Region										
Beaver	1.15	1.00	1.20	0.41	--	0.83	0.88	0.46	0.96	0.69
Garfield	--	0.84	0.75	1.10	0.75	0.41	0.79	1.05	0.36	0.03
Iron	3.38	0.88	0.19	0.43	0.86	0.69	--	0.73	0.87	0.77
Kane	--	--	--	0.75	--	--	--	--	--	--
Millard	1.48	2.05	1.70	1.84	1.48	1.19	1.61	1.68	1.01	1.15
Piute	--	0.16	0.31	0.89	1.02	0.39	--	0.64	0.53	0.35
Sevier	3.33	1.83	0.70	0.88	1.90	1.67	1.71	1.66	1.99	4.13
Washington	--	2.77	--	1.39	1.89	1.49	0.99	0.67	0.29	1.32
Wayne	--	--	--	--	--	--	--	--	--	--
Regional Totals	2.60	1.61	0.86	1.11	1.54	1.08	1.37	1.12	0.92	1.48
Northeastern Region										
Daggett	--	--	--	--	--	--	--	--	--	--
Duchesne	0.51	0.42	0.48	0.42	0.37	0.31	0.30	0.36	0.45	0.32
Uintah	0.26	2.16	1.36	3.10	1.40	0.47	1.14	1.27	0.66	0.82
Regional Totals	0.49	1.22	0.72	1.21	0.66	0.36	0.46	0.70	0.51	0.51
Southeastern Region										
Carbon	2.03	0.87	0	0	0.23	0	2.34	0.09	0.20	0.05
Emery	--	1.92	1.00	1.19	1.12	1.21	0.32	0.69	0.83	0.55
Grand	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--
Regional Totals	2.03	1.26	0.69	0.80	0.82	0.84	0.93	0.39	0.57	0.31
STATE TOTALS	2.24	1.86	1.35	1.40	1.57	1.15	1.58	1.40	1.18	1.40

Table 5. Trend of young observed per mile during summer roadside pheasant counts, 1962-71.

Region & County	Year									
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region										
Box Elder	2.44	0.93	1.55	1.18	1.34	0.71	0.51	0.40	0.35	1.32
Cache	1.63	0.88	0.59	1.25	1.94	1.25	1.84	1.05	1.39	1.62
Davis	2.17	0.86	0.97	0.53	1.59	0.95	0.65	3.11	0.54	2.25
Morgan	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	0.19	--	--	--	--
Weber	1.91	1.61	1.50	1.52	1.55	1.33	1.60	2.35	0.58	1.35
Regional Totals	1.67	0.98	1.07	1.08	1.60	0.99	0.97	1.37	0.86	1.62
Central Region										
Juab	3.19	1.25	1.17	1.02	0.90	1.10	0.90	0.27	0.95	0.18
Salt Lake	1.93	1.27	1.30	1.26	1.44	1.00	2.14	1.91	0.61	1.31
Sanpete	2.08	1.25	0.60	1.12	1.74	0.80	2.10	1.90	2.54	1.74
Tooele	1.67	1.53	1.43	1.72	5.06	1.20	3.15	2.49	2.74	1.41
Utah	3.06	3.87	3.13	2.18	1.96	1.80	2.11	1.88	1.30	1.68
Wasatch	--	--	--	--	--	--	--	--	--	--
Regional Totals	2.27	2.38	1.59	1.73	1.91	1.40	2.10	1.84	1.46	1.50
Southern Region										
Beaver	1.08	0.40	0.76	0.21	--	0.55	0.80	0.26	0.64	0.48
Garfield	--	0.57	0.47	0.86	0.57	0.30	0.63	0.74	0.19	0
Iron	2.75	0.67	0.09	0.33	0.65	0.48	--	0.53	0.55	0.62
Kane	--	--	--	0.00	--	--	--	--	--	--
Millard	1.29	1.64	1.30	1.51	1.19	0.86	1.39	1.32	0.84	0.90
Piute	--	0.13	0.24	0.68	0.81	0.28	--	0.53	0.31	0.25
Sevier	2.87	1.39	0.40	0.57	1.50	1.38	1.49	1.26	1.58	3.21
Washington	--	2.07	--	0.86	1.27	1.03	0.71	0.46	0.17	0.95
Wayne	--	--	--	--	--	--	--	--	--	--
Regional Totals	2.13	1.21	0.61	0.85	1.19	0.81	1.15	0.85	0.69	1.14
Northeastern Region										
Daggett	--	--	--	--	--	--	--	--	--	--
Duchesne	0.35	0.30	0.36	0.32	0.27	0.19	0.20	0.25	0.27	0.21
Uintah	0.16	1.70	0.98	2.50	1.10	0.33	0.86	0.86	0.40	0.55
Regional Totals	0.32	0.94	0.53	0.96	0.50	0.23	0.32	0.47	0.31	0.34
Southeastern Region										
Carbon	1.69	0.70	0	0	0.20	0	1.82	0.03	0.17	0.03
Emery	--	1.52	0.70	0.94	0.77	0.89	0.18	0.58	0.56	0.30
Grand	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--
Regional Totals	1.69	1.01	0.48	0.60	0.58	0.61	0.67	0.31	0.39	0.17
STATE TOTALS	1.82	1.43	1.01	1.09	1.20	0.88	1.23	1.06	0.86	1.06

Table 6. Trend of young per adult hen ratios found during summer roadside pheasant counts, 1962-71.

Region & County	Year									
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region										
Box Elder	5.26	3.49	4.86	3.38	3.15	4.02	2.07	2.00	2.19	4.02
Cache	8.54	4.30	5.91	4.20	6.59	6.29	5.65	3.38	3.65	6.64
Davis	4.55	3.33	4.50	3.86	3.71	2.75	4.82	4.00	4.00	5.45
Morgan	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	1.75	--	--	--	--
Weber	5.52	3.33	3.17	7.38	2.23	4.47	4.74	3.70	4.22	3.40
Regional Totals	5.85	3.70	4.55	4.10	2.97	4.58	3.89	3.27	3.32	5.02
Central Region										
Juab	5.48	4.58	4.20	3.41	3.27	6.30	5.40	3.25	4.22	2.33
Salt Lake	4.95	3.33	3.48	2.86	3.36	3.40	3.02	3.63	2.96	4.08
Sanpete	7.44	4.93	3.26	3.04	7.40	5.60	4.71	5.48	4.02	4.73
Tooele	8.33	7.25	4.53	7.15	6.54	8.40	7.08	7.89	6.78	5.95
Utah	4.98	4.75	5.03	5.66	4.51	3.80	3.94	3.85	3.69	3.28
Wasatch	--	--	--	--	--	--	--	--	--	--
Regional Totals	5.30	4.65	4.38	4.54	5.06	4.20	3.92	4.30	3.94	3.86
Southern Region										
Beaver	16.20	1.35	2.40	1.60	--	2.05	10.67	1.86	5.33	3.27
Garfield	--	2.87	3.60	4.10	4.80	3.83	4.00	3.50	2.00	--
Iron	4.73	5.48	3.80	5.30	6.40	2.93	--	3.21	2.53	4.43
Kane	--	--	--	0	--	--	--	--	--	--
Millard	9.07	5.14	5.20	5.00	5.70	4.91	6.10	4.58	5.89	4.62
Piute	--	3.67	3.00	3.57	4.90	2.50	--	5.33	1.75	5.00
Sevier	6.90	4.16	2.00	4.50	4.80	5.89	6.72	3.74	4.30	4.34
Washington	--	3.89	--	2.32	3.00	3.33	3.42	2.88	1.50	3.45
Wayne	--	--	--	--	--	--	--	--	--	--
Regional Totals	6.37	4.09	3.67	4.19	4.68	3.98	5.75	3.84	3.92	4.19
Northeastern Region										
Daggett	--	--	--	--	--	--	--	--	--	--
Duchesne	4.36	6.00	4.60	5.60	4.70	3.21	5.92	5.00	2.51	3.50
Uintah	1.57	5.72	3.90	6.40	5.70	4.27	4.24	3.37	2.62	3.08
Regional Totals	3.62	5.77	4.20	6.00	5.20	3.60	4.93	3.77	2.56	3.23
Southeastern Region										
Carbon	5.00	6.08	0	0	8.00	0	4.52	1.40	5.00	5.00
Emery	5.68	3.76	3.53	4.30	5.30	5.17	2.46	6.78	3.55	2.25
Grand	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--
Regional Totals	5.62	4.51	3.53	4.30	5.50	5.17	3.91	5.61	3.74	2.36
STATE TOTALS	5.35	4.31	4.22	4.62	4.40	4.20	4.25	3.94	3.68	4.09

Table 7. Trend of the percent of hens observed with broods during summer roadside pheasant counts, 1963-71.

Region & County	Year										
	1963	1964	1965	1966	1967	1968	1969	1970	1971		
Northern Region											
Box Elder	85	90	75	86	88	57	58	59	75		
Cache	83	81	74	82	86	65	62	66	86		
Davis	62	80	65	76	62	91	56	82	87		
Morgan	--	--	--	--	--	--	--	--	--		
Rich	--	--	--	--	--	--	--	--	--		
Summit	--	--	--	--	--	38	--	--	--		
Weber	91	74	100	61	100	87	80	100	77		
Regional Totals	82	81	75	78	86	66	66	68	82		
Central Region											
Juab	83	100	75	100	100	100	75	100	67		
Salt Lake	74	76	80	53	71	69	76	62	66		
Sanpete	83	81	67	100	81	97	91	78	95		
Tooele	100	94	100	89	100	88	100	100	84		
Utah	82	78	79	78	66	72	74	60	69		
Wasatch	--	--	--	--	--	--	--	--	--		
Regional Totals	82	79	79	77	71	76	79	71	74		
Southern Region											
Beaver	42	50	60	--	75	100	72	100	82		
Garfield	81	100	85	100	100	100	83	50	--		
Iron	80	75	90	71	76	--	75	59	62		
Kane	--	--	0	--	--	--	--	--	--		
Millard	82	79	88	96	74	100	77	94	81		
Piute	67	100	57	85	50	--	100	50	100		
Sevier	56	40	35	98	100	100	96	88	85		
Washington	74	--	39	65	67	92	42	67	74		
Wayne	--	--	--	--	--	--	--	--	--		
Regional Totals	--	75	73	84	78	98	79	77	80		
Northeastern Region											
Daggett	--	--	--	--	--	--	--	--	--		
Duchesne	100	92	95	95	53	92	81	44	68		
Uintah	92	70	100	84	91	65	59	42	55		
Regional Totals	88	80	98	90	67	76	65	43	60		
Southeastern Region											
Carbon	75	0	0	100	0	74	20	75	100		
Emery	72	74	55	92	86	77	94	70	42		
Grand	--	--	--	--	--	--	--	--	--		
San Juan	--	--	--	--	--	--	--	--	--		
Regional Totals	70	74	55	96	86	75	78	71	44		
STATE TOTALS	78	72	82	85	76	78	74	69	75		

Table 8. Trend of average brood size for pheasants, 1962-1971.

Region & County	Year										
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	
Northern Region											
Box Elder	5.58	4.11	5.42	4.70	3.75	4.93	3.80	3.53	3.68	4.96	
Cache	6.04	4.93	7.55	5.50	6.17	5.86	6.88	5.63	7.12	8.34	
Davis	4.00	4.10	4.44	5.67	4.78	5.17	5.14	6.67	5.14	6.52	
Morgan	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	4.67	--	--	--	--	
Weber	5.52	4.79	4.44	6.00	3.73	3.00	5.69	5.33	3.43	4.80	
Regional Totals	5.31	4.56	5.49	5.29	4.54	5.13	5.25	5.56	5.28	6.33	
Central Region											
Juab	5.32	5.50	4.20	4.50	3.78	6.30	5.40	4.33	4.22	7.00	
Salt Lake	5.64	4.08	4.22	3.43	5.25	4.67	5.28	5.35	4.95	5.76	
Sanpete	5.88	5.88	2.64	4.57	6.39	5.18	4.68	5.13	5.52	4.94	
Tooele	8.33	7.25	4.81	7.15	--	8.38	8.10	7.89	6.78	6.81	
Utah	5.95	5.79	6.44	6.20	5.76	5.94	5.07	5.08	5.13	5.89	
Wasatch	--	--	--	--	--	--	--	--	--	--	
Regional Totals	5.93	5.63	5.26	5.26	5.69	5.83	5.28	5.37	5.41	5.70	
Southern Region											
Beaver	6.00	3.50	3.17	2.67	--	4.75	10.67	--	--	5.75	
Garfield	--	3.67	3.60	4.82	4.78	4.25	4.00	4.25	3.00	--	
Iron	5.50	4.61	5.00	5.89	6.40	5.62	--	11.00	4.50	7.17	
Kane	--	5.20	--	--	--	--	--	--	--	--	
Millard	6.38	6.14	5.40	5.70	5.09	6.88	--	5.74	6.24	4.44	
Piute	--	--	3.00	6.25	5.67	5.00	--	5.00	3.50	5.00	
Sevier	5.95	5.84	5.00	5.48	5.88	5.35	--	4.22	5.00	5.24	
Washington	--	5.06	--	5.91	4.90	5.72	4.31	8.00	--	5.25	
Wayne	--	--	--	--	--	--	--	--	--	--	
Regional Totals	5.84	5.27	4.89	5.48	5.45	5.78	5.37	5.42	5.30	5.13	
Northeastern Region											
Daggett	--	--	--	--	--	--	--	--	--	--	
Duchesne	6.00	6.00	4.79	5.94	4.95	6.10	6.45	6.45	4.82	6.50	
Uintah	2.20	6.22	5.62	6.79	6.73	4.70	6.54	6.65	6.14	6.05	
Regional Totals	4.88	6.03	5.18	6.51	5.90	5.40	6.50	6.59	5.33	6.21	
Southeastern Region											
Carbon	5.00	8.11	--	5.40	6.25	--	7.50	1.00	4.00	5.00	
Emery	5.69	5.22	4.79	5.15	6.71	6.67	4.00	8.42	5.64	6.00	
Grand	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	
Regional Totals	5.62	5.42	4.79	5.18	6.68	6.67	6.45	7.85	5.29	5.89	
STATE TOTALS	5.72	5.30	5.20	5.62	5.42	5.70	5.40	5.59	5.36	5.73	

Table 9. Summary of pheasant hunter success and distribution of harvest and hunting pressure by region and county, 1971.

Region and County	Hunters reporting	Days hunted	Birds bagged	Birds per hunter-day	Birds per hunter*	% of pressure	% of harvest
Northern							
Box Elder	606	1581	1862	1.18	4.25	11.47	15.36
Cache	408	1272	1390	1.09	4.20	9.23	11.47
Davis	440	1203	800	0.67	2.85	8.73	6.60
Morgan	16	43	44	1.02	4.24	0.31	0.36
Rich	1	1	1	1.00	1.00	0.01	0.01
Summit	1	1	0	0.00	2.36	0.01	0.00
Weber	491	1547	1109	0.72	3.04	11.23	9.15
Regional Totals	1963	5648	5206	0.92	3.34	40.99	42.95
Central							
Juab	84	196	182	0.93	3.52	1.42	1.50
Salt Lake	552	1328	779	0.59	2.34	9.64	6.43
Sanpete	205	550	628	1.14	4.10	3.99	5.18
Tooele	157	439	305	0.69	2.45	3.19	2.52
Utah	844	2175	1868	0.86	2.74	15.78	15.41
Wasatch	6	29	12	0.41	3.43	0.21	0.10
Regional Totals	1848	4717	3774	0.80	2.58	34.23	31.13
Southern							
Beaver	32	91	91	1.00	2.82	0.66	0.75
Garfield	8	20	19	0.95	2.56	0.15	0.16
Iron	76	205	153	0.75	2.72	1.49	1.26
Kane	1	2	6	3.00	4.00	0.01	0.05
Millard	203	536	530	0.99	3.80	3.89	4.37
Piute	11	15	14	0.93	1.00	0.11	0.12
Sevier	189	516	525	1.02	3.41	3.74	4.33
Washington	67	237	128	0.54	2.29	1.72	1.06
Wayne	6	8	7	0.88	2.70	0.06	0.06
Regional Totals	593	1630	1473	0.90	3.01	11.83	12.15
Northeastern							
Daggett	1	15	7	0.47	4.25	0.11	0.06
Duchesne	156	431	512	1.19	5.43	3.13	4.22
Uintah	143	449	496	1.10	4.07	3.26	4.09
Regional Totals	300	895	1015	1.13	4.51	6.50	8.37
Southeastern							
Carbon	98	273	158	0.58	2.58	1.98	1.30
Emery	127	332	305	0.92	3.39	2.41	2.52
Grand	11	16	12	0.75	3.81	0.12	0.10
San Juan	2	4	3	0.75	0.00	0.03	0.02
Regional Totals	238	625	478	0.76	2.81	4.54	3.94
Unknown counties	107	264	176	0.67	1.91	1.92	1.45
Mixed counties	0	0	0	--	--	--	--
STATE TOTALS	5049	13,779	12,122	0.88	2.95	100.00	100.00

*Based on county of residence

Table 10. Summary of pheasants bagged per hunter-day by region and county, 1962-1971.

Region and county	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern										
Box Elder	1.69	1.98	1.78	1.61	1.72	1.52	1.46	1.10	1.25	1.18
Cache	1.42	1.71	1.46	1.49	1.52	1.35	1.35	0.87	1.29	1.09
Davis	1.15	0.93	0.84	0.80	0.85	0.76	0.70	0.60	0.69	0.67
Morgan	0.75	0.73	0.43	0.80	0.42	0.50	0.86	0.25	0.95	1.02
Rich	--	1.00	2.00	1.45	--	1.00	0.88	0.17	1.00	1.00
Summit	--	--	--	--	1.00	0.00	0.50	0.64	0.50	0.00
Weber	1.08	1.15	1.15	1.02	0.93	0.95	0.81	0.72	0.79	0.72
Regional Totals	1.35	1.55	1.40	1.28	1.29	1.20	1.12	0.82	1.02	0.92
Central										
Juab	1.12	1.54	1.37	0.98	1.08	0.98	1.10	0.96	1.09	0.93
Salt Lake	0.76	1.00	0.85	0.90	0.84	0.89	0.90	0.69	0.76	0.59
Sanpete	1.12	1.50	1.15	1.07	1.13	1.17	1.32	1.01	1.32	1.14
Tooele	0.75	1.29	1.09	0.86	0.58	0.85	1.05	0.80	0.95	0.69
Utah	1.51	1.64	1.00	1.01	1.06	1.11	1.12	0.89	1.11	0.86
Wasatch	--	--	1.00	--	0.00	0.20	1.10	0.60	0.00	0.41
Regional Totals	1.19	1.43	0.99	0.96	0.96	1.01	1.07	0.83	1.01	0.80
Southern										
Beaver	1.09	1.07	0.90	0.56	1.33	0.72	1.22	1.14	0.91	1.00
Garfield	0.72	0.40	0.56	0.67	1.30	0.69	0.75	1.00	1.00	0.95
Iron	1.63	1.52	1.18	0.74	1.02	0.94	1.29	0.96	0.69	0.75
Kane	--	--	--	--	--	--	--	--	--	3.00
Millard	1.27	1.82	0.91	1.25	1.10	1.31	1.45	1.27	1.18	0.99
Piute	1.83	2.00	1.64	0.47	1.33	0.91	0.59	1.22	0.79	0.93
Sevier	1.38	1.65	0.86	1.02	1.13	1.11	1.28	1.01	1.28	1.02
Washington	1.13	0.51	1.00	1.08	0.60	0.62	0.72	0.69	0.47	0.54
Wayne	--	--	2.00	0.02	1.83	--	0.00	0.00	1.17	0.88
Regional Totals	1.34	1.59	0.94	1.02	1.07	1.07	1.24	1.07	1.04	0.90
Northeastern										
Daggett	--	--	--	--	--	--	2.33	0.71	0.50	0.47
Duchesne	1.15	1.62	1.16	1.54	1.64	1.12	1.00	1.18	1.22	1.19
Uintah	1.25	1.55	1.16	1.13	1.69	1.14	1.22	1.30	1.13	1.10
Regional Totals	1.21	1.58	1.16	1.30	1.67	1.14	1.13	1.25	1.16	1.13
Southeastern										
Carbon	1.01	1.15	0.92	1.05	1.25	0.78	0.95	0.89	0.70	0.58
Emery	1.12	2.03	1.17	1.16	1.54	1.14	1.19	1.53	1.07	0.92
Grand	0.00	--	--	0.33	0.83	0.50	1.30	0.71	0.50	0.75
San Juan	1.00	1.00	--	2.25	--	--	--	0.08	2.00	0.75
Regional Totals	1.08	1.70	1.09	1.12	1.42	1.01	1.11	1.24	0.94	0.76
Unknown counties	--	1.47	0.80	1.40	0.00	0.93	0.95	--	0.58	0.67
Mixed counties	--	0.91	1.26	0.83	--	0.90	--	--	4.00	--
STATE TOTALS	1.25	1.50	1.15	1.14	1.19	1.10	1.11	0.90	1.02	0.88

Table 12. Distribution of pheasant hunting pressure by county hunted, 1962-1971

Region and county	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern										
Box Elder	10.91	14.91	13.78	13.47	13.13	16.15	15.52	12.31	12.23	11.47
Cache	12.36	9.74	8.78	10.96	12.19	11.91	12.83	9.85	10.64	9.23
Davis	9.72	8.53	6.56	8.97	9.73	8.92	11.88	11.29	10.35	8.73
Morgan	0.31	0.45	0.27	0.19	0.23	0.22	0.22	0.53	0.37	0.31
Rich	--	0.03	0.03	0.09	--	0.01	0.06	0.04	0.01	0.01
Summit	--	--	--	0.02	0.02	0.08	0.03	0.10	0.02	0.01
Weber	6.55	8.98	6.59	8.97	8.94	11.31	10.58	11.87	9.79	11.23
Regional Totals	39.85	42.64	36.01	42.67	44.24	48.59	51.13	45.99	43.41	40.99
Central										
Juab	1.45	1.32	1.71	1.36	1.65	1.05	1.11	1.55	1.54	1.42
Salt Lake	9.76	11.11	11.36	12.60	12.26	9.93	8.76	10.26	10.27	9.64
Sanpete	3.56	3.50	3.45	3.42	3.05	2.79	3.06	3.24	3.63	3.99
Tooele	1.14	1.82	2.01	2.30	2.51	1.25	1.76	1.97	1.53	3.19
Utah	21.74	21.23	23.25	17.24	17.29	10.28	13.43	14.01	14.62	15.78
Wasatch	--	0.03	0.09	--	0.02	0.04	0.04	0.04	0.01	0.21
Regional Totals	37.65	39.01	41.87	36.92	36.78	25.35	28.16	31.07	31.60	34.23
Southern										
Beaver	0.75	0.53	0.54	0.75	0.54	0.63	0.76	0.64	0.55	0.66
Garfield	0.31	0.10	0.15	0.12	0.16	0.10	0.06	0.11	0.04	0.15
Iron	1.58	1.26	1.35	1.31	1.19	0.72	1.16	1.42	2.03	1.49
Kane	0.04	--	--	--	--	--	--	--	0.00	0.01
Millard	3.74	3.26	4.94	3.79	3.72	2.93	3.16	4.17	4.86	3.89
Piute	0.17	0.16	0.24	0.19	0.14	0.09	0.13	0.20	0.12	0.11
Sevier	4.83	3.50	3.51	3.47	2.72	2.79	2.62	3.90	3.40	3.74
Washington	0.83	0.50	0.75	1.12	0.86	0.90	1.34	1.14	1.15	1.72
Wayne	--	--	0.03	0.07	0.09	--	0.02	0.04	0.05	0.06
Regional Totals	12.25	9.31	11.51	10.82	9.42	8.16	9.24	11.62	12.20	11.83
Northeastern										
Daggett	--	0.03	--	--	--	0.01	0.02	0.05	0.07	0.11
Duchesne	2.37	2.29	2.13	2.25	2.44	2.91	2.54	2.62	2.99	3.13
Uintah	2.15	2.03	2.70	2.44	2.86	2.92	3.58	3.85	4.19	3.26
Regional Totals	4.52	4.35	4.83	4.69	5.30	5.84	6.14	6.52	7.25	6.50
Southeastern										
Carbon	1.58	1.29	1.59	1.69	1.61	1.32	1.34	1.85	1.61	1.98
Emery	3.96	2.32	2.97	2.65	2.51	2.65	2.16	2.73	3.05	2.41
Grand	0.17	0.08	--	0.05	0.09	0.10	0.16	0.13	0.05	0.12
San Juan	0.04	0.03	--	0.05	--	--	--	0.09	0.02	0.03
Regional Totals	5.75	3.72	4.56	4.44	4.21	4.06	3.65	4.80	4.73	4.54
Unknown counties	--	0.71	0.81	0.07	0.02	2.00	1.67	--	0.78	1.92
Mixed counties	--	0.26	0.42	0.40	--	6.00	--	--	0.03	--
STATE TOTALS	100.00									

*Distribution of hunting pressure for 1967 and later is based on hunter-days rather than number of hunters reporting.

Table 13. State-wide summary of pheasant harvest statistics, 1948-1971.

Year	Total hunters	Total harvest	Hunter-days afield	Pheasants per hunter	Pheasants per hunter-day
1948	96,534	280,914	--	2.91	--
1949	88,369	263,340	189,453	2.98	1.39
1950	92,724	249,428	235,309	2.69	1.06
1951	76,576	246,575	171,233	3.22	1.44
1952	78,773	246,559	185,383	3.13	1.33
1953	82,595	245,307	176,480	2.97	1.39
1954	82,370	260,289	201,774	3.16	1.29
1955	78,793	196,195	178,359	2.49	1.10
1956	77,826	206,239	182,512	2.65	1.13
1957	83,025	228,319	170,387	2.75	1.34
1958	88,290	309,015	220,725	3.50	1.40
1959	86,268	243,276	202,730	2.82	1.21
1960	81,976	232,812	177,719	2.84	1.31
1961	83,493	238,439	243,305	2.86	0.98
1962	86,336	262,448	209,921	3.04	1.25
1963	87,647	297,873	198,582	3.40	1.50
1964	88,242	225,775	196,314	2.56	1.15
1965	77,409	211,876	186,215	2.74	1.14
1966	78,721	249,814	209,082	3.17	1.19
1967	85,664	284,000	257,033	3.32	1.10
1968	90,453	297,752	267,788	3.29	1.11
1969	90,573	250,241	277,887	2.76	0.90
1970	78,585	250,503	244,958	3.19	1.02
1971	87,878	259,189	294,618	2.95	0.88
TOTALS (1948-71)	2,029,120	6,036,178	4,877,767	2.97	1.24
AVERAGES (1948-70)	84,402	251,173	199,267	2.98	1.27

Table 15. Pheasant hunter success trend as determined by field bag check, 1966-71

Region and County	1966		1967		1968		1969		1970		1971	
	Birds/100 hr.	Birds/Day										
Northern Region												
Box Elder	34	1.33	24	1.40	22	0.89	9	0.41	24	1.00	10	0.30
Cache	29	1.84	24	1.12	21	1.11	19	0.51	35	1.10	21	0.63
Davis	20	0.56	26	0.71	24	0.97	25	0.58	27	0.98	16	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	23	1.00	40	0.89	--	--	--	--	--	--
Weber	19	1.88	24	1.08	23	0.62	12	0.50	10	0.52	13	0.35
Regional Totals	25	1.45	24	1.16	22	0.94	16	0.50	24	0.99	16	0.52
Central Region												
Juab	--	--	44	1.67	--	--	--	--	50	--	13	2.00
Salt Lake	12	0.20	36	0.76	35	0.86	13	0.53	16	0.28	15	0.32
Sanpete	19	0.40	19	0.56	19	0.45	13	0.69	21	0.61	34	0.71
Tooele	21	--	19	0.50	15	0.50	30	1.90	20	2.18	19	0.72
Utah	52	2.00	25	1.12	27	1.13	17	1.05	26	0.77	27	1.13
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	19	0.42	26	0.80	26	0.85	16	0.98	21	0.61	22	0.77
Southern Region												
Beaver	--	--	40	1.59	--	--	65	2.00	19	.67	39	1.33
Garfield	--	--	--	--	--	--	--	--	20	0.50	23	0.33
Iron	--	--	--	--	60	1.52	46	2.22	19	0.77	26	1.32
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	25	1.22	--	--	20	0.68	68	2.00	12	0.98	18	0.79
Piute	--	--	--	--	--	--	--	--	32	1.32	36	3.00
Sevier	--	--	--	--	71	1.39	38	1.11	25	1.36	26	1.10
Washington	--	--	11	0.30	9	0.42	46	--	7	0.43	21	0.31
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	25	1.22	18	0.56	49	1.09	52	1.61	18	1.07	22	0.89
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	28	2.03	16	1.12	15	1.37	15	1.36	15	0.99	22	1.73
Uintah	49	1.31	36	1.23	25	1.12	21	0.93	19	1.16	24	1.36
Regional Totals	37	1.45	21	1.16	18	1.27	17	1.24	17	1.06	23	1.56
Southeastern Region												
Carbon	37	1.36	12	1.10	12	0.86	15	3.00	5	0.10	15	1.00
Emery	20	1.50	24	1.00	22	0.76	16	1.02	24	0.96	13	0.53
Grand	16	.40	--	--	--	--	--	--	--	--	9	0.33
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	26	1.19	21	1.03	16	0.82	16	1.04	23	0.90	13	0.51
STATE TOTALS	28	1.30	23	1.04	25	1.00	21	1.00	20	0.97	21	1.05

MOURNING DOVE

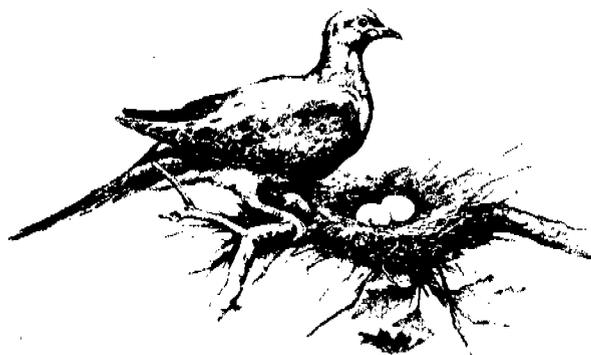
SUMMARY

The Breeding Density Index (BDI) derived from the annual call-count survey indicated a substantially increased breeding population in 1971. Subsequent harvest data did not reflect this increase. Both total harvest and hunter success declined from 1970. Weather conditions may have influenced both the BDI and harvest.

It seems evident that the BDI did not accurately indicate the actual breeding population level. The magnitude of increase indicated is not possible in view of the previous trend of this index as well as the harvest trend. The trend of the dove population state-wide since 1960 still appears to be slightly downward though the decline is not statistically significant for the period 1962-72.

Division personnel banded 1,569 mourning doves during the pre-season banding period. Age composition was 40.3 percent immatures and 59.7 percent adults.

Band recovery information since 1964 indicates that from 5-10 percent of Utah-banded doves have been harvested by sportsmen.



Call-Count Survey

Results of the 1971 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. Indexes shown in each of these tables are unweighted and consequently differ somewhat from those published in the annual Mourning Dove Status Report compiled by the Bureau of Sport Fisheries and Wildlife. Indicated trends are similar. Following is a comparison of the results of the 1971 survey to 1970 and the average for the period 1964-70:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total doves heard per route	22.7	+69	+59
Total calls heard per route	83.6	+54	+23
Total doves seen per route	27.5	+33	+60

All indexes point to a substantially increased breeding population level. This was true in all but the Northern Region. A possibility exists that slightly cooler and wetter weather during April and May could have slowed the northward migration causing a backlog of doves in the southern two-thirds of the State where most of the routes are located. This was not substantiated by reduced indexes in more northerly states, except for Wyoming where a marked reduction in BDI occurred in 1971.

Harvest

Hunter Questionnaire

Information obtained from the hunter questionnaire for 1971 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 State-wide harvest statistics in Table 7. Harvest statistics for 1971 compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Mourning dove hunters	26,064	+ 9	+69
Mourning dove harvest	226,645	- 2	+63
Hunter-days afield	81,271	+10	+112
Mourning doves per hunter	8.70	-10	- 4
Mourning doves per hunter-day	2.79	-11	-23

Hunter success dropped appreciably in 1971. Consequently, even though an increase in hunters and hunter-days occurred, total harvest was slightly lower than in 1970. Total hunters, harvest and hunter-days afield were above average because of a long-term upward trend in hunting pressure, while hunter success, both per day and per hunter, was below average (Figure 1).

The hunting season was preceded by above normal precipitation during August. It rained for three days prior to the opening day over most of the State. These conditions possibly accelerated the rate of migration prior to the season resulting in a reduced dove population level for opening day.

Field Bag Checks

A summary of field-bag-check data for 1971 is shown in Table 8. Hunter success trends determined via this method are shown in Table 9. Results of the 1971 survey compare to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total hunters checked	1,347	+11	- 3
Total hours hunted	3,169	- 5	-22
Doves per hunter (complete hunts)	3.07	+ 3	-17
Doves bagged per 100 hours	82	- 6	-17
Average hours per hunter-day (complete hunts)	3.7	+ 6	+ 3
Hours hunted per dove bagged	1.2	0	+ 9

Mourning dove hunter success per day indicated by this method increased slightly compared to a decrease shown by hunter questionnaire; however, most of the complete hunt information was obtained from Box Elder County and is not representative of the entire State. Success per 100 hours declined from 1970 and is probably more indicative of the actual hunter success trend State-wide.

The average dove hunter spent slightly more time afield per day in comparison to both 1970 and the average and bagged 1.2 doves per hour of effort. This number of doves per hour was similar to 1970, but above average, reflecting the lower dove population.

Banding

Results of the annual preseason mourning dove banding program for 1971 are shown in Table 10. The trend of doves banded since 1961 is shown in Table 11. Band recovery rates and distribution of recoveries by State and country for Utah banded doves are shown in Tables 12 and 13 respectively. Table 14 is a summary of the number of doves banded in other states that have been recovered in Utah.

During 1971, 1,569 mourning doves were banded by Division personnel. Banding was distributed among 12 counties.

Age composition of doves banded was 40.3 percent immatures and 59.7 percent adults or 67 immatures per 100 adults.

The direct recovery rate or the percentage of doves killed during the first hunting season following banding for immatures and adults combined from 1949-62 was 1.1 percent. From 1964-69 this value was 1.6 percent. Total recovery rate, direct recoveries plus all subsequent recoveries, for both periods, was 2.7 percent. Expansion of the direct recovery rate of 1.6 percent for the period 1964-69 using an assumed band reporting rate of 30 percent indicates that only 5.3 percent of the State's mourning doves were harvested by hunters during this period.

The distribution of band recoveries for Utah banded doves shows that 78.6 percent of combined recoveries (including recoveries, returns or foreign retraps) have been made in Utah. Recoveries from Utah and apparent primary dove wintering areas in Arizona, California and Mexico combined account for 97.7 percent of all recoveries received as of March 31, 1972.

Only 31 bands have been recovered in Utah from doves banded in other states. Of this number, 14 were originally banded in Arizona, primarily during the winter months.

In summary, it is evident that Utah hunters primarily harvest doves that are raised in Utah. They do not harvest a significant number of migrating doves. Doves produced in Utah, but harvested elsewhere, are probably not harvested while migrating, but rather on the wintering area indicating rapid movement from summer to winter habitat.

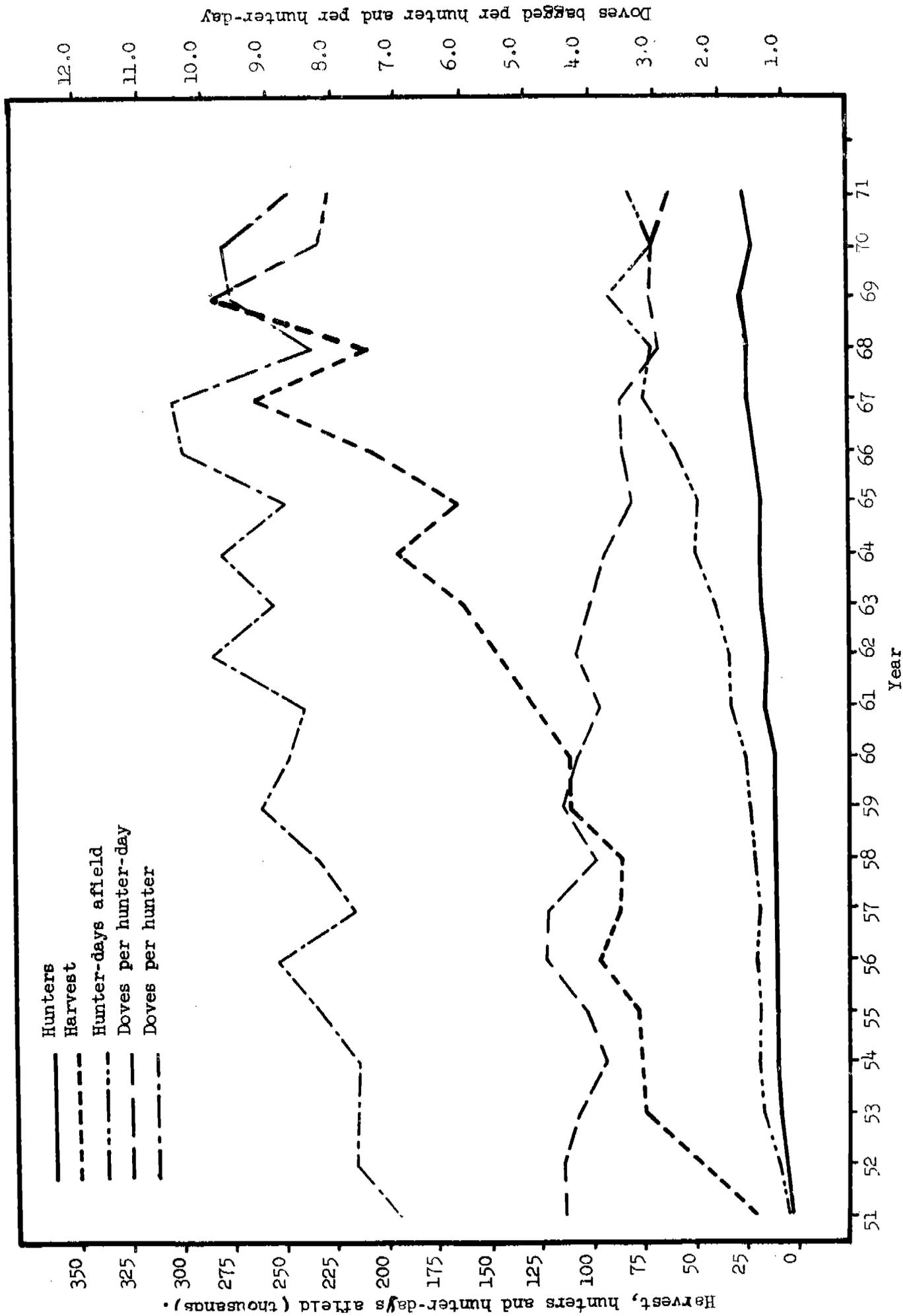


Figure 1. State-wide trends of mourning dove harvest statistics.

Table 1. Summary of the mourning dove call-count survey, 1971

Region and County	Route Number	Total Doves Heard per Route	Total Calls Heard per Route	Total Doves Seen per Route
Northern Region				
Summit	R1020	10	50	16
Box Elder	R1500	4	6	7
Regional Totals		14	56	23
Central Region				
Juab	R2830	32	96	0
Regional Totals		32	96	0
Southern Region				
Sevier-Sanpete	R0370	1	1	6
Wayne-Sevier	R0660	11	37	17
Garfield	R1090	14	48	1
Millard	R3640	17	60	9
Beaver	R3820	12	37	5
Iron	R4000	24	177	20
Washington	R4310	64	283	13
Regional Totals		143	643	71
Northeastern Region				
Duchesne	R0080	16	48	17
Uintah	R0220	66	218	3
Regional Totals		82	266	20
Southeastern Region				
Emery	R0540	10	24	8
San Juan	R1170	60	170	290
San Juan	R1450	Automatic Zero		
Regional Totals		70	194	298
STATE TOTALS		341	1255	412
STATE AVERAGES		22.7	83.6	27.5
PERCENT CHANGE (from previous year)		+69	+54	+33

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, 1964-71.

Region and County	Route Number	Number of Doves Heard per Route							
		1964	1965	1966	1967	1968	1969	1970	1971
Northern Region									
Summit	R1020	11	9	16	10	16	7	11	10
Box Elder	R1500	2	5	6	2	6	3	7	4
Regional Totals		13	14	22	12	22	10	18	14
Central Region									
Juab	R2830	28	17	22	42	23	8	15	32
Regional Totals		28	17	22	42	23	8	15	32
Southern Region									
Sevier-Sanpete	R0370	3	3	0	7	1	0	1	1
Wayne-Sevier	R0660	8	8	5	12	7	2	8	11
Garfield	R1090	22	19	29	27	17	18	6	14
Millard	R3640	--	18	18	40	43	26	7	17
Beaver	R3820	9	17	19	9	23	9	17	12
Iron	R4000	26	33	13	19	13	26	15	24
Washington	R4310	33	36	36	40	21	38	54	64
Regional Totals		101	134	120	154	125	119	108	143
Northeastern Region									
Duchesne	R0080	10	7	23	62	11	10	3	16
Uintah	R0220	6	9	12	17	33	38	15	66
Regional Totals		16	16	35	79	44	48	18	82
Southeastern Region									
Emery	R0540	6	6	3	2	7	11	9	10
San Juan	R1170	5	5	1	6	7	18	33	60
San Juan	R1450	--	2	0	0	0	Automatic	Zero	
Regional Totals		11	13	4	8	14	29	42	70
STATE TOTALS									
		169	194	203	295	228	214	201	341
STATE AVERAGES									
		13.0	12.9	13.5	19.7	15.2	14.3	13.4	22.7
PERCENT CHANGE (from previous year)									
			-1	+5	+46	-23	-6	-6	+69

Table 3. Summary of mourning dove hunter success and distribution of harvest and hunting pressure by region and county, 1971.

Region and County	Hunters reporting	Days hunted	Birds bagged	Birds per hunter-day	Birds per hunter*	% of pressure	% of harvest
Northern							
Box Elder	116	275	1059	3.85	10.75	7.23	9.99
Cache	64	167	438	2.62	6.79	4.39	4.13
Davis	51	169	278	1.64	8.40	4.45	2.62
Morgan	13	27	98	3.63	20.33	0.71	0.92
Rich	11	20	76	3.80	0.00	0.53	0.72
Summit	11	26	72	2.77	11.00	0.68	0.68
Weber	94	307	489	1.59	7.32	8.08	4.61
Regional Totals	360	991	2510	2.53	7.95	26.07	23.68
Central							
Juab	99	169	855	5.06	19.21	4.45	8.07
Salt Lake	158	579	1174	2.03	8.01	15.23	11.08
Sanpete	27	72	281	3.90	8.90	1.89	2.65
Tooele	111	303	902	2.98	9.57	7.97	8.51
Utah	252	682	1851	2.71	9.33	17.94	17.46
Wasatch	23	102	179	1.75	8.89	2.68	1.69
Regional Totals	670	1907	5242	2.75	8.83	50.17	49.45
Southern							
Beaver	18	49	196	4.00	9.55	1.29	1.85
Garfield	5	20	65	3.25	16.25	0.53	0.61
Iron	26	86	293	3.41	12.74	2.26	2.76
Kane	4	15	53	3.53	15.00	0.39	0.50
Millard	52	136	605	4.45	10.57	3.58	5.71
Piute	3	5	18	3.60	6.00	0.13	0.17
Sevier	30	114	378	3.32	12.93	3.00	3.57
Washington	29	94	364	3.87	12.00	2.47	3.43
Wayne	4	6	18	3.00	5.33	0.16	0.17
Regional Totals	171	525	1990	3.79	11.86	13.81	18.77
Northeastern							
Daggett	5	7	41	5.86	2.00	0.18	0.39
Duchesne	7	15	45	3.00	4.67	0.39	0.42
Uintah	33	94	216	2.30	7.13	2.47	2.04
Regional Totals	45	116	302	2.60	6.61	3.05	2.85
Southeastern							
Carbon	26	76	68	0.89	3.52	2.00	0.64
Emery	11	36	86	2.39	10.40	0.95	0.81
Grand	8	28	76	2.71	9.40	0.74	0.72
San Juan	10	33	104	3.15	13.20	0.87	0.98
Regional Totals	55	173	334	1.93	6.53	4.55	3.15
Unknown counties	32	89	222	2.49	6.00	2.34	2.09
Mixed counties	0	0	0	--	--	--	--
STATE TOTALS	1333	3801	10600	2.79	8.70	100.00	100.00

*Based on county of residence

Table 4. Summary of mourning doves bagged per hunter-day by region and county, 1962-71.

Region and county	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern										
Box Elder	6.38	5.14	5.49	4.97	5.37	4.35	3.79	3.88	3.60	3.85
Cache	3.28	3.48	3.29	2.96	3.83	3.27	3.03	2.49	3.27	2.62
Davis	2.53	3.57	2.43	1.75	1.81	1.76	1.56	1.68	1.56	1.64
Morgan	3.73	4.29	3.56	3.94	4.79	4.18	3.69	3.88	3.70	3.63
Rich	6.33	3.20	8.33	9.50	--	3.20	2.18	4.27	3.44	3.80
Summit	3.30	2.71	4.50	3.17	3.57	2.60	1.70	3.15	5.00	2.77
Weber	4.53	3.40	3.64	2.25	2.33	2.45	1.68	2.12	1.98	1.59
Regional Totals	4.48	4.00	3.74	3.32	3.57	3.30	2.59	2.84	2.77	2.53
Central										
Juab	7.07	7.30	6.50	5.86	5.67	6.21	5.05	4.88	5.89	5.06
Salt Lake	3.38	3.47	2.98	2.42	2.75	3.14	2.29	2.26	2.18	2.03
Sanpete	4.76	5.77	3.69	3.00	5.25	3.03	2.82	3.14	3.64	3.90
Tooele	4.65	3.44	5.11	3.70	3.39	3.78	3.23	3.33	3.76	2.98
Utah	3.71	3.84	3.34	3.27	3.27	3.32	2.92	3.10	3.41	2.71
Wasatch	3.00	6.00	2.60	3.90	2.71	4.48	4.11	1.49	2.41	1.75
Regional Totals	4.02	3.93	3.70	3.18	3.39	3.70	3.03	3.07	3.16	2.75
Southern										
Beaver	9.75	6.55	4.67	4.78	3.96	4.55	4.85	5.65	4.28	4.00
Garfield	3.00	2.33	5.75	2.44	1.20	3.61	1.60	3.11	1.33	3.25
Iron	7.09	5.36	4.83	4.83	4.55	3.59	4.97	2.91	3.72	3.41
Kane	7.00	--	7.33	8.04	5.00	5.86	1.64	3.60	3.00	3.53
Millard	5.34	7.37	5.92	4.90	5.35	4.41	4.81	3.84	5.83	4.45
Piute	4.00	3.83	1.87	3.64	2.00	6.78	0.55	2.16	7.67	3.60
Sevier	2.36	2.60	2.93	1.93	2.79	1.99	2.31	3.20	2.95	3.32
Washington	5.25	8.33	4.07	4.17	4.02	4.21	2.71	4.04	4.38	3.87
Wayne	6.00	3.00	--	5.69	10.00	0.47	2.50	--	2.58	3.00
Regional Totals	4.80	5.19	4.52	4.15	4.10	3.75	3.56	3.55	4.15	3.79
Northeastern										
Daggett	9.00	1.33	--	2.75	--	3.69	4.00	1.67	7.30	5.86
Duchesne	3.00	2.00	5.40	2.00	3.73	2.00	1.12	2.67	4.54	3.00
Uintah	4.43	6.00	4.14	4.13	3.59	2.37	2.62	2.21	3.05	2.30
Regional Totals	4.21	3.00	4.47	3.77	3.62	2.42	2.10	2.26	3.70	2.60
Southeastern										
Carbon	2.51	1.29	1.96	2.37	2.87	2.56	3.17	3.56	2.26	0.89
Emery	4.50	2.50	3.44	1.58	2.89	4.68	3.69	2.81	1.28	2.39
Grand	4.50	1.33	4.11	2.82	2.00	4.00	3.67	3.71	5.79	2.71
San Juan	3.00	4.25	5.00	3.88	5.60	4.65	7.00	3.27	2.29	3.15
Regional Totals	3.28	2.31	2.52	2.48	3.08	3.76	3.81	3.24	2.38	1.93
Unknown counties	4.62	2.39	3.46	2.18	1.84	3.28	2.88	--	4.55	2.49
Mixed counties	3.53	5.06	3.98	3.76	--	3.88	1.00	--	0.00	--
STATE TOTALS	4.23	4.02	3.75	3.36	3.51	3.56	2.96	3.07	3.14	2.79

Table 6. Distribution of mourning dove hunting pressure by region and county, 1962-71*

Region and county	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern										
Box Elder	12.50	11.14	6.46	16.31	10.12	9.63	8.96	9.44	8.83	7.23
Cache	6.36	4.92	5.73	8.49	5.34	5.81	5.59	3.56	5.22	4.39
Davis	6.80	3.18	4.55	6.66	5.25	3.43	6.18	5.15	6.66	4.45
Morgan	2.19	2.60	2.64	1.50	1.59	1.96	1.83	2.20	1.50	0.71
Rich	0.88	0.43	0.59	0.17	--	0.28	0.33	0.25	0.44	0.53
Summit	1.10	1.45	0.59	--	1.31	0.83	0.68	0.77	0.44	0.68
Weber	7.89	7.09	5.73	4.33	6.28	6.64	8.85	7.73	5.58	8.08
Regional Totals	37.72	30.81	26.29	37.46	29.89	28.58	32.43	29.10	28.68	26.07
Central										
Juab	4.61	4.92	4.11	3.66	7.12	4.98	4.62	5.60	3.50	4.45
Salt Lake	12.94	14.33	14.10	18.30	16.21	10.38	13.05	13.86	17.38	15.23
Sanpete	3.29	2.75	2.79	1.16	2.34	3.85	2.25	2.18	3.14	1.89
Tooele	3.95	5.50	6.46	5.16	9.09	9.71	9.53	7.87	4.61	7.97
Utah	19.30	12.45	15.12	6.49	20.52	14.11	15.98	14.29	16.10	17.94
Wasatch	1.32	0.58	0.59	0.17	0.28	0.75	0.56	0.84	0.94	2.68
Regional Totals	45.41	40.53	43.17	34.94	44.56	43.77	45.98	44.64	45.67	50.17
Southern										
Beaver	0.22	0.72	0.29	1.16	0.75	1.30	1.63	0.77	0.89	1.29
Garfield	0.44	0.14	0.44	0.50	0.37	0.50	0.15	0.64	0.08	0.53
Iron	0.66	0.87	0.73	0.83	1.87	1.36	2.22	3.52	3.86	2.26
Kane	0.22	--	0.29	0.67	0.09	0.39	0.33	1.25	0.03	0.39
Millard	3.07	3.18	2.35	3.33	3.47	3.43	3.34	5.62	3.36	3.58
Piute	0.66	0.43	0.44	0.50	0.09	0.25	1.12	0.86	0.08	0.13
Sevier	2.19	2.60	1.62	1.33	2.16	2.21	2.63	2.40	3.22	3.00
Washington	0.44	0.29	1.17	1.00	1.12	1.72	2.07	2.49	0.94	2.47
Wayne	0.22	0.14	--	0.33	0.09	0.47	0.12	--	0.33	0.16
Regional Totals	8.12	8.37	7.33	9.65	10.01	11.62	13.61	17.55	12.80	13.81
Northeastern										
Daggett	0.22	0.29	--	0.50	--	0.36	0.09	0.14	0.28	0.18
Duchesne	0.66	0.14	0.44	0.50	0.56	0.86	0.98	0.54	0.36	0.39
Uintah	1.54	0.29	1.17	0.83	1.50	1.80	1.54	2.65	2.03	2.47
Regional Totals	2.42	0.72	1.61	1.83	2.06	3.02	2.62	3.33	2.67	3.05
Southeastern										
Carbon	2.63	0.43	1.17	3.16	1.12	1.69	1.92	2.45	3.97	2.00
Emery	1.10	1.30	0.73	1.00	0.66	1.02	1.07	2.11	2.28	0.95
Grand	0.44	0.14	0.44	0.67	0.09	0.80	0.44	0.32	0.92	0.74
San Juan	0.22	0.29	0.15	0.50	0.28	1.02	0.44	0.50	1.55	0.87
Regional Totals	4.39	2.16	2.49	5.33	2.15	4.54	3.88	5.38	8.72	4.55
Unknown counties	0.88	11.43	11.01	3.16	0.28	2.24	1.48	--	1.47	2.34
Mixed counties	0.88	5.93	8.08	7.65	--	6.23	0.03	--	0.00	--
STATE TOTALS	100.00									

*Distribution of hunting pressure for 1967 and later is based on hunter-days rather than number of hunters reporting.

Table 7. State-wide summary of mourning dove harvest statistics, 1951-1971.

Year	Total hunters	Total harvest	Hunter-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
TOTALS					
1951-1971	333,957	3,005,127	849,279	3.54	9.00
AVERAGES					
(1951-1970)	15,395	138,924	38,400	3.62	9.02

*Estimated

Table 8. Mourning Dove Field Bag Check Summary - 1971

Region and County	ALL HUNTS				COMPLETE HUNTS						
	Total		Total Birds/100 hrs.		Total Complete		Total Birds/100 hrs.				
	Parties	Hunters	Hours	Total Birds	Hunts	Hunters	Hours	Birds			
Northern Region											
Box Elder	131	329	1534	1074	70	118	292	1396	1003	72	3.43
Cache	12	34	86	91	106	3	7	28	49	175	7.00
Davis	0	0	0	0	--	0	0	0	0	--	--
Morgan	9	29	72	94	131	6	20	52	74	142	3.70
Rich	4	14	33	22	67	2	5	16	15	94	3.00
Summit	6	12	24	3	12	3	7	14	3	21	0.43
Weber	34	77	119	39	33	10	27	48	10	21	0.37
Regional Totals	196	495	1868	1323	71	142	358	1554	1154	74	3.22
Central Region											
Juab	5	13	47	39	83	3	8	35	10	29	1.25
Salt Lake	95	393	310	219	71	39	80	144	109	76	1.36
Sanpete	16	56	123	27	22	5	17	50	14	28	0.82
Tooele	17	35	93	57	61	5	9	31	7	23	0.78
Utah	43	91	141	157	111	8	11	22	58	264	5.27
Wasatch	0	0	0	0	--	0	0	0	0	--	--
Regional Totals	176	588	714	499	70	60	125	282	198	70	1.58
Southern Region											
Beaver	9	21	32	28	88	0	0	0	0	--	--
Garfield	0	0	0	0	--	0	0	0	0	--	--
Iron	11	19	43	88	205	6	14	38	75	197	5.36
Kane	0	0	0	0	--	0	0	0	0	--	--
Millard	30	106	271	323	119	5	18	86	114	132	6.33
Piute	8	20	37	34	92	0	0	0	0	--	--
Sevier	2	3	12	16	133	2	3	12	16	133	5.33
Washington	0	0	0	0	--	0	0	0	0	--	--
Wayne	0	0	0	0	--	0	0	0	0	--	--
Regional Totals	60	169	395	489	124	13	35	136	205	151	5.86
Northeastern Region											
Daggett	24	49	110	160	145	11	25	69	105	152	4.20
Duchesne	0	0	0	0	--	0	0	0	0	--	--
Uintah	18	34	67	86	128	11	21	47	69	147	3.29
Regional Totals	42	83	177	246	139	22	46	116	174	150	3.78
Southeastern Region											
Carbon	0	0	0	0	--	0	0	0	0	--	--
Emery	5	12	15	31	207	0	0	0	0	--	--
Grand	0	0	0	0	--	0	0	0	0	--	--
San Juan	0	0	0	0	--	0	0	0	0	--	--
Regional Totals	5	12	15	31	207	0	0	0	0	0	36
STATE TOTALS	479	1347	3169	2588	82	237	564	2088	1731	83	3.07

Table 9. Mourning dove hunter success trend determined by field bag checks, 1966-71.

Region and County	1966		1967		1968		1969		1970		1971	
	Doves/ 100 hrs. Hunter											
Northern Region												
Box Elder	236	3.76	203	6.58	84	3.83	79	3.30	81	3.20	70	3.43
Cache	--	--	50	2.12	158	4.62	91	1.88	164	4.44	106	7.00
Davis	--	--	55	1.00	22	1.40	62	0.80	--	--	--	--
Morgan	--	--	41	0.70	--	--	--	--	--	--	131	3.70
Rich	--	--	45	4.40	186	6.92	118	2.20	--	--	67	3.00
Summit	--	--	--	--	--	--	191	4.66	91	1.44	12	0.43
Weber	--	--	102	0.50	29	0.35	85	1.98	116	3.75	33	0.37
Regional Totals	236	3.76	166	5.77	84	3.75	82	3.08	86	3.20	71	3.22
Central Region												
Juab	--	--	--	--	61	--	130	8.00	95	4.33	83	3.00
Salt Lake	123	2.09	84	2.16	35	0.85	43	0.65	72	1.28	71	1.36
Sanpete	--	--	--	--	52	1.12	--	--	19	0.47	22	0.82
Tooele	--	--	94	5.52	43	2.56	46	1.58	36	0.60	61	0.78
Utah	--	--	121	4.07	64	3.58	75	1.50	85	4.20	111	5.27
Wasatch	--	--	--	--	--	--	70	4.00	--	--	--	--
Regional Totals	123	2.09	101	3.32	46	2.12	63	1.92	66	1.46	70	1.58
Southern Region												
Beaver	--	--	264	7.63	--	--	--	--	--	--	88	--
Garfield	--	--	--	--	--	--	143	--	72	2.23	--	--
Iron	--	--	300	4.25	209	5.00	--	--	486	5.45	205	5.36
Kane	--	--	--	--	--	--	143	3.33	75	--	--	--
Millard	188	4.58	--	--	105	2.58	--	--	--	--	119	6.33
Piute	--	--	--	--	133	3.57	190	2.78	158	6.00	92	--
Sevier	--	--	--	--	--	--	--	--	217	--	133	5.33
Washington	--	--	114	2.54	86	1.29	220	6.24	238	4.33	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	188	4.58	190	4.32	110	2.77	205	4.06	217	4.42	124	5.86
Northeastern Region												
Daggett	--	--	--	--	--	--	38	0.69	--	--	152	4.20
Duchesne	--	--	--	--	--	--	78	1.83	36	3.00	--	--
Uintah	--	--	100	2.00	143	3.67	141	5.77	132	3.39	147	3.29
Regional Totals	--	--	100	2.00	143	3.67	122	3.98	109	3.37	150	3.78
Southeastern Region												
Carbon	311	7.00	126	5.36	--	--	175	3.71	0	0	--	--
Emery	144	3.18	109	2.00	--	--	161	3.54	159	6.44	207	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	148	3.78	111	3.73	--	--	339	10.00	--	--	--	--
Regional Totals	181	4.11	114	3.91	--	--	246	4.00	155	6.44	207	--
STATE TOTALS	204	3.76	146	5.19	76	3.62	87	3.00	87	2.98	82	3.07

Table 10. Summary of pre-season mourning dove banding in Utah during 1971.

County	Immatures	Adults	Unclassified	Total
Daggett	7	28		35
Duchesne	7	64		71
Iron	113	1		114
Juab	64	53		117
Millard	38	13		51
Morgan	22	20	3	45
Piute	166	211		377
San Juan	37	52		89
Sevier	2			2
Tooele	85	370		455
Uintah	49	123		172
Washington	41	2		43
TOTALS	631 (40.2%)	937 (59.6%)	3 (0.2%)	1571

Of the total 1,571 doves, 1569 were banded by Division of Wildlife Resources personnel and 2 by Bureau of Sport Fisheries and Wildlife personnel.

Table 12. Summary of mourning dove band recovery rates for the period 1949-70.

Time Period	Doves Banded	Number of Recoveries		Recovery Rates	
		Direct*	Total**	Direct	Total
1949-62	4001	43	110	.011	.027
1964	1945	37	68	.019	.035
1965	1416	33	57	.023	.040
1966	973	1	7	.001	.007
1967	2233	37	60	.017	.027
1968	640	6	14	.009	.022
1969	2006	36	45	.018	.022
<hr/>					
TOTALS					
1964-69	9213	150	251	.016	.027
<hr/>					
GRAND TOTALS	13214	193	361	.015	.027

*Direct recovery - A banded dove that is killed during the first hunting season following banding.

**Total recovery - Direct recoveries plus all subsequent recoveries for any given cohort of banded doves.

Table 13. Summary of combined recoveries, returns and foreign retraps of mourning doves banded in Utah, 1961-71.

State and Country of Recovery	Recoveries as of		Recoveries		Total Recoveries (Percent)
	August, 1970	(Percent)	During 1970 and 1971*		
UNITED STATES					
Utah	540	(81.3)	15	555	(78.6)
Arizona	38	(5.7)	16	54	(7.6)
Northern	2		--	--	
Southern	36		--	--	
California	21	(3.2)	2	23	(3.2)
Northern	3		--	--	
Central	4		--	--	
Southern	14		--	--	
New Mexico	4	(0.6)	1	5	(0.7)
Northern	2		--	--	
Southern	2		--	--	
Idaho	2	(0.3)	0	2	(0.3)
Texas	2	(0.3)	0	2	(0.3)
Oregon	2	(0.3)	0	2	(0.3)
Colorado	2	(0.3)	0	2	(0.3)
Nevada	1	(0.2)	0	1	(0.1)
Iowa	1	(0.2)	0	1	(0.1)
States Other Than Utah	73	(11.0)	19	92	(13.0)
United States Total	613	(92.3)	34	647	(91.6)
MEXICO					
Jalisco	20	(3.0)	1	21	(3.0)
Michoacan	7	(1.0)	4	11	(1.6)
Sinaloa	9	(1.4)	0	9	(1.3)
Sonora	5	(0.8)	0	5	(0.7)
Unknown State	1	(0.2)	3	4	(0.6)
Durango	2	(0.3)	0	2	(0.3)
Guanajuato	1	(0.2)	0	1	(0.1)
Aguascalientes	1	(0.2)	0	1	(0.1)
Colima	1	(0.2)	0	1	(0.1)
Nayarit	1	(0.2)	0	1	(0.1)
Mexico State	1	(0.2)	0	1	(0.1)
Baja California	1	(0.2)	0	1	(0.1)
Mexico Total	50	(7.5)	8	58	(8.2)
HONDURAS	1	(0.2)	0	1	(0.1)
TOTAL RETURNS	664	(100)	42	706	(100)

*As per reports received as of March 31, 1972

Table 14. Summary of mourning doves banded in other states and recovered in Utah through August, 1970.

<u>State Where Banded</u>	<u>Number of Returns</u>
Arizona	14
Idaho	7
Washington	4
Nevada	3
Texas	2
Oregon	<u>1</u>
Total Recoveries and Returns of Doves Banded In Other States:	31

CHUKAR PARTRIDGE

SUMMARY

All population indexes indicated a reduced chukar population statewide in 1971 compared to 1970. Only the Northeastern Region showed an increase.

Harvest data substantiated the expected decline in some areas but showed improved hunter success in others. Total hunters declined slightly from 1970 but those who hunted spent more days afield. This resulted in an increased total harvest. Bag check information indicated that hunters spent more hours hunting each day. A greater amount of time was also required to bag a chukar.

The long-term trend of chukar harvest statistics is still prominently upward reflecting both increasing interest in chukar hunting and generally increased distribution and abundance of chukars.



Brood Counts

Results of the annual random brood survey 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. Survey results for 1971 compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total chukars observed	1,523	-10	- 4
Young per 100 adults	311	-19	-30
Mean brood size	7.81	- 6	-12
Chukars observed per 100 hours	325	-29	-23
Total hours effort	468	+28	+23

All production indexes indicated a reduction in chukar abundance from 1970; however, the breeding population was relatively high so the actual reduction in numbers should have been minimal.

Harvest

Hunter Questionnaire

Results of the hunter questionnaire survey for 1971 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 State-wide harvest statistics in Table 9. Following is a comparison of 1971 harvest statistics to 1970 and the average:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Chukar hunters	17,917	- 1	+14
Chukars harvested	61,151	+ 9	+46
Hunter-days afield	55,378	+11	+27
Chukars per hunter	3.41	+10	+15
Chukars per hunter-day	1.10	- 2	+28

Total hunters decreased slightly from 1970 but hunter-days increased. The increase in days hunted resulted in an increased total harvest. Hunter success per day was similar to 1970, but on a per hunter basis, it increased. Overall success on a State-wide basis was slightly better than expected.

The long-term trend continues upward due to both increased abundance, resulting from increased distribution, and increased interest in chukar hunting (Figure 1).

Field Bag Checks

A summary of field-bag-check data for 1971 is shown in Table 10. The hunter success trend determined via bag check since 1966 is shown in Table 11. Data for the 1971 season compared to 1970 and the average as follows:

	<u>Percent change from</u>		
	<u>1971</u>	<u>1970</u>	<u>Average</u>
Total hunters checked	900	+52	+12
Total hours hunted	5,178	+135	+49
Chukars per hunter (complete hunts)	1.05	+12	-13
Chukars bagged per 100 hours	19	-17	-32
Average hours per hunter-day (complete hunts)	5.5	+38	+28
Hours hunted per chukar bagged	5.3	+23	+32

This information shows that hunter success improved over 1970. Since most of the data were collected at checking stations in Box Elder, Tooele and Juab counties the State-wide success index largely reflects improved success in those areas. Sample sizes for complete hunts in other areas were too low to accurately reflect hunter success.

It is evident that the average chukar hunter spent more hours per day hunting chukars. It also required more hours to bag a chukar. This is consistent with the expected decline in the State-wide chukar population. Apparently, however, success was good enough to encourage the expenditure of the additional time spent hunting each day.

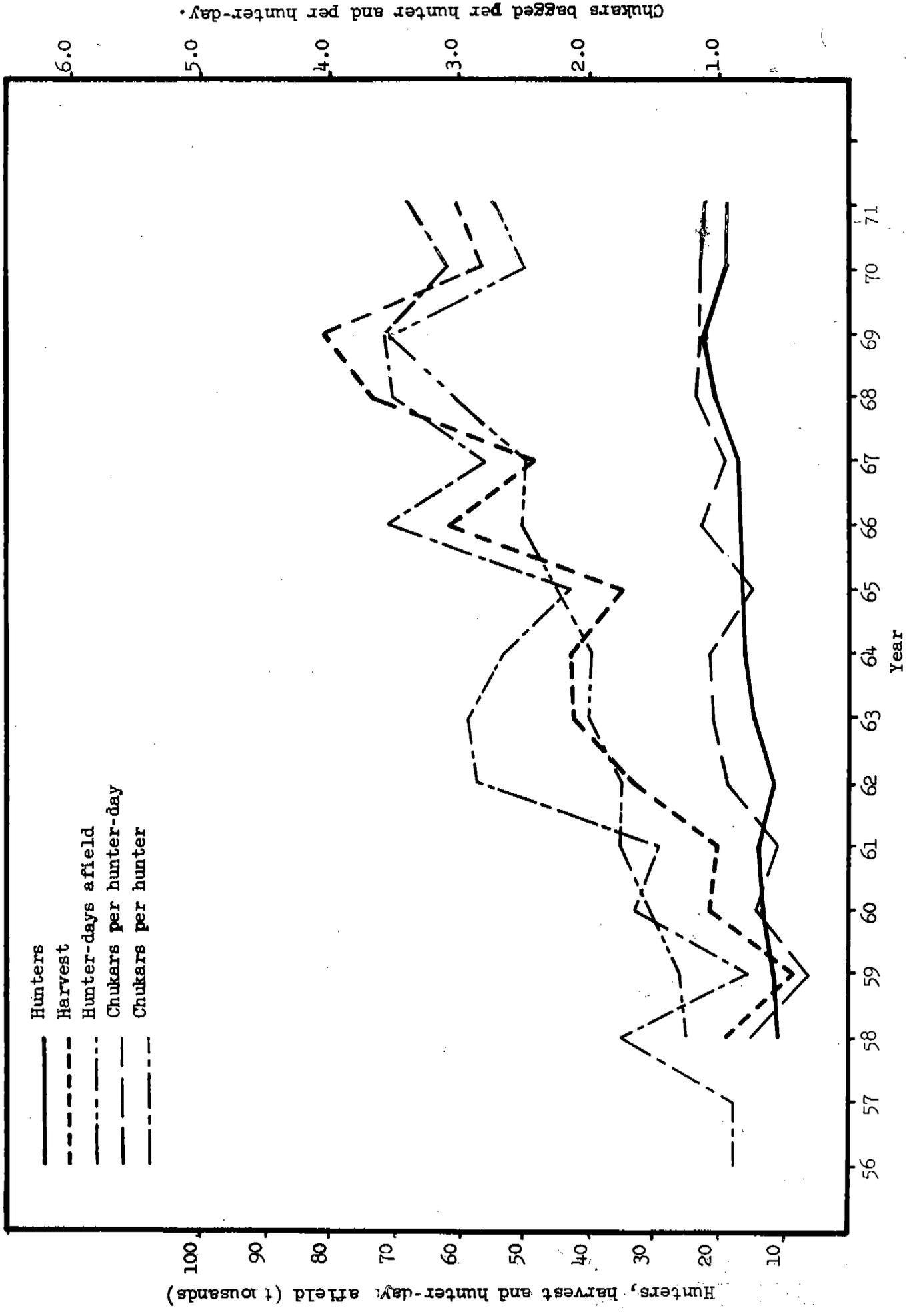


Figure 1. State-wide trends of chukar partridge harvest statistics.

Chukars bagged per hunter and per hunter-day.

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

Table 1. Chukar Summer Inventory Summary, 1971.

Region and County	Distinct Broods		Mean & Adults		Mixed Yng.		Total Yng. Adults	Total Yng. 100 Ad.	Vehicle Miles	Hours Effort		Birds/100 hrs.		
	No. Ad.	Yng.	Brood	Ad.	Yng.	w/o Yng.				Veh.	Horse Walk.		Total	
Northern Region														
Box Elder	6	6	37	6.17	0	0	1	37	529	31	10	21	62	71
Cache	7	7	24	3.43	3	7	2	31	258	0	0	12	12	358
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	2	2	19	9.50	0	0	0	19	950	8	0	0	8	262
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	1	1	20	20.0	0	0	6	20	286	--	--	--	--	--
Regional Totals	16	16	100	6.25	3	7	9	107	382	39	10	33	82	132
Central Region														
Juab	3	4	28	9.33	29	186	3	214	594	9	0	5.5	14.5	1724
Salt Lake	0	0	0	--	3	11	0	11	367	4	9	0	13	108
Sanpete	2	2	14	7.00	10	34	16	48	171	0	6.0	10.0	16.0	475
Tooele	14	18	158	11.29	2	17	27	175	372	32.5	0	5.0	37.5	592
Utah	7	7	57	8.14	5	24	11	81	352	285	0	0	49.5	210
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	26	31	257	9.88	49	272	57	529	386	95.0	15	20.5	130.5	510
Southern Region														
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	3	3	15	5.00	12	40	5	55	275	39	0	22	61	123
Iron	0	0	--	0	0	0	0	0	--	4	0	1	5	0
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	4	4	46	11.50	24	66	16	112	255	29.5	0	0	29.5	529
Piute	2	2	11	5.50	0	0	0	11	550	2	0	0	2.0	650
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	1	1	6	6.00	0	0	8	6	67	0.5	0	2	2.5	600
Regional Totals	10	10	78	7.80	36	106	29	184	245	75	--	25	100	259
Northeastern Region														
Daggett	0	0	0	--	0	0	0	0	--	2	--	1	3	0
Duchesne	1	1	6	6.00	--	--	4	6	120	23	--	4	27	41
Uintah	6	6	42	7.00	3	19	0	61	678	12	8	0	20	350
Regional Totals	7	7	48	6.86	3	19	4	67	479	37	8	5	50	162
Southeastern Region														
Carbon	7	7	51	7.29	4	39	8	90	474	115	0	3	8.5	1282
Emery	0	0	0	--	0	0	0	0	--	10.0	--	20	30.0	0
Grand	6	6	50	8.33	11	30	22	80	205	151	0	5	18.5	643
San Juan	11	13	64	5.82	7	31	39	95	161	30	2	46	48	321
Regional Totals	24	26	165	6.88	22	100	69	265	226	496	31	28	105	364
STATE TOTALS	83	90	648	7.81	113	504	168	1152	311	3346	277	112	468	325

Table 2. Trend of chukar young per 100 adults ratios, 1962-71.

Region and County	Year										
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	
Northern Region											
Box Elder	--	214	535	410	416	360	455	600	247	529	
Cache	--	467	625	700	317	220	--	1011	250	258	
Davis	--	--	--	0	500	0	--	1100	--	--	
Morgan	--	933	600	135	680	88	315	668	178	950	
Rich	--	480	950	--	--	--	--	--	--	--	
Summit	--	--	--	254	--	350	--	--	525	--	
Weber	--	1200	--	--	600	--	--	91	--	286	
Regional Totals	--	350	574	210	429	276	420	510	267	382	
Central Region											
Juab	900	26	300	--	--	475	450	607	421	594	
Salt Lake	608	208	670	--	--	671	409	372	0	367	
Sanpete	765	758	375	--	--	368	400	194	256	171	
Tooele	1267	628	--	--	--	--	1733	1360	922	372	
Utah	860	300	405	--	--	--	240	463	360	352	
Wasatch	--	--	480	--	--	--	--	767	--	--	
Regional Totals	729	201	473	643	638	445	407	496	471	386	
Southern Region											
Beaver	--	--	--	--	--	--	--	--	--	--	
Garfield	183	530	500	160	--	--	--	--	495	275	
Iron	--	--	--	--	--	500	--	--	--	--	
Kane	512	320	--	--	--	--	--	--	--	--	
Millard	1038	390	--	770	514	--	1108	812	700	255	
Piute	600	650	600	--	--	--	--	--	--	550	
Sevier	1425	179	857	1350	833	--	--	--	--	--	
Washington	--	660	--	--	817	315	--	--	--	--	
Wayne	1036	619	364	0	--	--	--	--	--	67	
Regional Totals	643	392	548	462	608	315	1108	812	581	245	
Northeastern Region											
Daggett	182	--	--	--	1056	436	709	1250	150	--	
Duchesne	833	--	--	833	--	0	515	548	--	120	
Uintah	--	--	--	600	1273	1075	482	463	450	678	
Regional Totals	235	--	--	654	1217	485	540	575	279	479	
Southeastern Region											
Carbon	--	--	--	50	--	--	1000	--	383	474	
Emery	264	--	722	300	1100	317	--	--	900	--	
Grand	--	--	--	825	539	367	1000	--	446	205	
San Juan	151	--	400	375	678	57	590	138	234	161	
Regional Totals	169	--	655	389	604	269	635	138	338	226	
STATE TOTALS	434	292	571	338	638	306	523	511	382	311	

Table 3. Trend of chukar mean brood size from 1963-71.

Region and County	Year								
	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region									
Box Elder	--	--	--	--	7.53	10.09	8.00	10.59	6.17
Cache	--	--	--	--	8.00	--	12.00	10.00	3.43
Davis	--	--	--	--	--	--	10.50	--	--
Morgan	--	--	--	--	7.50	--	10.17	8.00	9.50
Rich	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	7.00	--	--	7.33	--
Weber	--	--	--	--	--	--	--	--	20.0
Regional Totals	7.88	9.08	7.50	7.38	7.52	10.09	9.67	9.91	6.25
Central Region									
Juab	--	--	--	--	7.00	9.00	11.62	5.25	9.33
Salt Lake	--	--	--	--	--	11.25	16.50	--	--
Sanpete	--	--	--	--	7.00	6.00	--	6.67	7.00
Tooele	--	--	--	--	--	17.33	14.50	12.14	11.29
Utah	--	--	--	--	--	5.62	9.40	9.00	8.14
Wasatch	--	--	--	--	--	--	11.50	--	--
Regional Totals	7.92	6.00	6.43	8.50	7.00	9.22	11.38	9.00	9.88
Southern Region									
Beaver	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	5.00	--	--	8.20	5.00
Iron	--	--	--	--	--	--	--	--	0
Kane	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	15.43	9.67	--	11.50
Piute	--	--	--	--	--	--	--	--	5.50
Sevier	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	6.00
Regional Totals	8.98	11.50	6.17	8.83	5.00	15.43	9.67	8.20	7.80
Northeastern Region									
Daggett	--	--	--	--	7.71	19.00	15.50	4.00	--
Duchesne	--	--	--	--	--	7.64	11.50	--	6.00
Uintah	--	--	--	--	--	--	9.00	4.50	7.00
Regional Totals	--	--	8.50	10.00	7.71	8.58	12.00	4.33	6.86
Southeastern Region									
Carbon	--	--	--	--	--	10.00	--	7.67	7.29
Emery	--	--	--	--	7.33	--	--	9.00	--
Grand	--	--	--	--	9.35	10.00	--	7.20	8.33
San Juan	--	--	--	--	6.50	--	6.60	6.50	5.82
Regional Totals	9.83	10.48	9.25	9.68	8.48	10.00	6.60	7.36	6.88
STATE TOTALS	8.50	9.08	7.52	9.27	7.91	10.16	10.47	8.34	7.81

Table 4. Trend of chukars observed per 100 hours ratios, 1967-71

Region and County	Year				
	1967	1968	1969	1970	1971
Northern Region					
Box Elder	165	274	1322	386	71
Cache	291	0	911	175	358
Davis	50	--	600	--	--
Morgan	107	--	1670	500	262
Rich	0	0	---	--	--
Summit	19	--	--	--	--
Weber	--	--	928	--	--
Regional Totals	125	288	1196	445	132
Central Region					
Juab	230	367	450	197	1724
Salt Lake	270	830	354	15	108
Sanpete	202	48	91	371	475
Tooele	--	688	730	1022	592
Utah	--	567	938	177	210
Wasatch	--	0	867	0	--
Regional Totals	222	285	408	320	510
Southern Region					
Beaver	--	--	0	--	--
Garfield	300	--	0	761	123
Iron	--	--	--	--	0
Kane	--	--	0	--	--
Millard	--	--	3950	--	529
Piute	0	--	0	0	650
Sevier	--	--	--	--	--
Washington	372	--	0	--	--
Wayne	--	--	--	--	600
Regional Totals	216	--	484	1448	259
Northeastern Region					
Daggett	2143	741	2700	1333	0
Duchesne	4	496	438	0	41
Uintah	115	200	255	110	350
Regional Totals	199	433	396	82	162
Southeastern Region					
Carbon	288	550	--	--	1282
Emery	3550	0	0	--	--
Grand	3329	37	--	693	643
San Juan	419	1144	438	731	321
Regional Totals	1550	284	211	816	364
STATE TOTALS	328	382	516	459	325

Table 5. Summary of chukar hunter success and distribution of harvest and hunting pressure by region and county, 1971.

Region and County	Hunters reporting	Days hunted	Birds bagged	Birds per hunter-day	Birds per hunter*	% of pressure	% of harvest
Northern							
Box Elder	162	439	730	1.66	6.75	16.95	25.52
Cache	70	148	134	0.91	2.33	5.71	4.69
Davis	18	52	51	0.98	2.57	2.01	1.78
Morgan	34	81	136	1.68	12.00	3.13	4.76
Rich	4	6	6	1.00	0.00	0.23	0.21
Summit	11	21	14	0.67	0.33	0.81	0.49
Weber	44	111	96	0.86	4.32	4.29	3.36
Regional Totals	343	858	1167	1.36	4.02	33.13	40.80
Central							
Juab	35	82	102	1.24	4.30	3.17	3.57
Salt Lake	58	128	99	0.77	2.51	4.94	3.46
Sanpete	10	35	29	0.83	0.60	1.35	1.01
Tooele	214	602	870	1.45	5.50	23.24	30.42
Utah	91	336	160	0.48	3.64	12.97	5.59
Wasatch	13	63	33	0.52	4.11	2.43	1.15
Regional Totals	421	1246	1293	1.04	3.26	48.11	45.21
Southern							
Beaver	0	0	0	0.00	0.00	0.00	0.00
Garfield	2	3	0	0.00	4.50	0.12	0.00
Iron	4	6	7	1.17	1.67	0.23	0.24
Kane	1	1	2	2.00	0.00	0.04	0.07
Millard	24	78	127	1.63	6.22	3.01	4.44
Piute	8	20	23	1.15	5.00	0.77	0.80
Sevier	21	116	40	0.34	2.20	4.48	1.40
Washington	3	6	0	0.00	2.00	0.23	0.00
Wayne	2	5	4	0.80	10.00	0.19	0.14
Regional Totals	65	235	203	0.86	3.46	9.07	7.10
Northeastern							
Daggett	1	1	0	0.00	0.00	0.04	0.00
Duchesne	12	32	28	0.88	2.60	1.24	0.98
Uintah	22	47	38	0.81	1.70	1.81	1.33
Regional Totals	35	80	66	0.82	1.88	3.09	2.31
Southeastern							
Carbon	19	42	11	0.26	0.68	1.62	0.38
Emery	7	19	15	0.79	4.33	0.73	0.52
Grand	14	38	24	0.63	1.73	1.47	0.84
San Juan	7	19	2	0.11	0.00	0.73	0.07
Regional Totals	47	118	52	0.44	1.17	4.56	1.82
Unknown counties	23	53	79	1.49	3.20	2.05	2.76
Mixed counties	0	0	0	--	--	--	--
STATE TOTALS	934	2590	2860	1.10	3.41	100.00	100.00

*Based on county of residence

Table 6. Summary of chukars bagged per hunter-day by region and county, 1962-71.

Region and county	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern										
Box Elder	1.40	1.87	1.70	1.37	1.75	1.55	1.28	1.31	1.00	1.66
Cache	0.56	1.79	1.25	0.66	0.89	1.02	1.21	0.82	1.28	0.91
Davis	1.00	1.60	1.67	0.45	0.56	0.48	1.35	0.70	0.93	0.98
Morgan	1.46	0.76	1.10	0.43	0.55	1.09	2.09	1.52	1.75	1.68
Rich	0.85	1.57	1.75	0.00	--	1.00	0.45	0.25	1.78	1.00
Summit	0.28	1.00	--	1.75	0.45	0.19	0.63	1.23	0.47	0.67
Weber	1.41	1.25	0.84	0.61	0.49	0.46	0.64	0.83	0.60	0.86
Regional Totals	1.11	1.70	1.51	1.05	1.36	1.28	1.28	1.16	1.09	1.36
Central										
Juab	1.42	0.20	1.83	0.76	0.70	0.12	1.33	1.75	1.22	1.24
Salt Lake	0.33	0.50	0.95	0.67	0.93	0.99	0.92	0.71	1.15	0.77
Sanpete	0.53	0.74	0.62	0.67	1.05	0.93	0.47	0.48	0.21	0.83
Tooele	1.05	0.78	1.03	0.69	0.69	0.54	1.34	1.46	1.30	1.45
Utah	0.93	0.76	1.13	0.36	0.36	0.31	1.06	0.58	1.05	0.48
Wasatch	0.00	0.00	1.00	0.50	0.21	1.11	1.05	0.76	0.88	0.52
Regional Totals	0.82	0.67	1.09	0.57	0.61	0.57	1.08	1.12	1.17	1.04
Southern										
Beaver	0.00	--	--	0.00	--	0.00	1.00	0.00	0.50	--
Garfield	--	1.67	0.50	--	1.00	0.55	1.25	2.00	2.57	0.00
Iron	--	--	0.25	0.00	--	--	--	--	2.00	1.17
Kane	1.20	--	--	5.00	--	0.00	--	--	0.00	2.00
Millard	2.00	0.94	2.75	1.35	0.90	0.26	3.77	2.53	2.10	1.63
Piute	1.22	0.33	0.75	0.28	1.00	0.83	0.40	1.50	0.42	1.15
Sevier	0.86	0.57	0.36	0.37	0.51	0.99	0.59	0.35	0.88	0.34
Washington	--	0.50	2.00	0.00	--	0.00	0.00	0.60	0.00	0.00
Wayne	2.09	1.31	1.82	0.10	0.78	1.75	0.60	0.00	0.44	0.80
Regional Totals	1.06	0.78	0.80	0.54	0.72	0.69	1.29	1.22	1.29	0.86
Northeastern										
Daggett	--	0.80	--	0.17	0.82	2.50	1.95	0.11	0.00	0.00
Duchesne	0.73	1.44	1.25	0.36	1.62	1.21	0.69	1.53	0.29	0.88
Uintah	1.30	1.36	1.91	1.17	2.33	1.56	1.27	1.12	0.60	0.81
Regional Totals	1.09	1.28	1.72	0.91	2.04	1.44	1.22	1.16	0.46	0.82
Southeastern										
Carbon	0.39	0.96	1.07	0.46	1.75	0.60	1.27	0.62	0.54	0.26
Emery	0.11	1.14	1.67	0.47	1.42	1.32	1.52	1.30	0.46	0.79
Grand	1.20	2.07	1.87	0.38	2.07	0.92	1.15	0.69	1.72	0.63
San Juan	0.00	--	2.00	2.00	1.56	0.50	1.64	0.67	5.00	0.11
Regional Totals	0.57	1.35	1.50	0.46	1.85	0.85	1.29	0.80	0.94	0.44
Unknown counties	0.60	0.05	0.13	0.02	1.02	0.93	0.82	--	2.00	1.49
Mixed counties	1.00	1.09	1.17	1.85	--	0.78	--	--	0.00	--
STATE TOTALS	0.95	1.05	1.08	0.78	1.13	0.97	1.19	1.13	1.12	1.10

TABLE 8. Distribution of chukar hunting pressure by region and county, 1962-71.

Region and County	1962	1963	1964	1965	1966	1967*	1968	1969	1970	1971
Northern										
Box Elder	14.92	19.09	19.01	23.03	27.24	28.64	23.98	20.47	18.48	16.95
Cache	10.50	7.09	4.58	6.58	6.70	6.08	9.20	5.15	10.62	5.71
Davis	1.66	1.27	1.23	3.88	2.50	2.03	3.38	1.55	2.84	2.01
Morgan	2.21	2.36	2.46	1.41	1.36	3.24	3.92	4.46	2.18	3.13
Rich	1.38	0.18	1.06	0.24	--	0.34	0.37	0.58	0.37	0.23
Summit	1.38	0.36	--	0.71	0.79	0.29	1.35	0.89	0.70	0.81
Weber	4.14	3.64	2.46	8.58	3.52	2.55	2.54	5.53	2.59	4.29
Regional Totals	36.19	33.99	30.80	44.43	42.11	44.35	44.74	38.63	37.78	33.13
Central										
Juab	1.38	0.91	1.76	1.76	2.84	1.38	1.42	4.03	2.43	3.17
Salt Lake	2.21	3.09	4.58	11.99	8.40	6.24	8.42	6.82	6.26	4.94
Sanpete	3.04	1.45	1.06	2.82	1.25	1.13	1.01	0.72	0.78	1.35
Tooele	5.52	4.91	6.51	6.82	10.67	9.36	8.25	21.15	18.81	23.24
Utah	15.47	10.91	10.39	11.99	13.85	12.39	14.98	11.14	12.55	12.99
Wasatch	0.28	0.18	0.35	0.82	0.79	2.15	1.25	0.95	0.99	2.43
Regional Totals	27.90	21.45	24.65	36.20	37.80	32.64	35.34	44.81	41.81	48.11
Southern										
Beaver	0.28	--	--	0.12	--	0.04	0.07	0.06	0.08	--
Garfield	--	0.36	0.18	--	0.11	0.81	0.14	0.12	0.29	0.12
Iron	--	--	0.18	0.12	--	0.00	--	--	0.21	0.23
Kane	0.55	--	--	0.12	--	0.12	--	--	0.00	0.04
Millard	0.28	0.55	0.35	1.06	1.70	2.19	1.45	2.91	2.84	3.01
Piute	1.10	0.36	0.35	0.94	0.79	0.49	0.17	0.52	0.49	0.77
Sevier	5.25	3.27	1.76	2.59	2.27	3.48	4.60	4.05	4.12	4.48
Washington	--	0.18	0.18	0.12	--	0.45	0.07	0.14	0.08	0.23
Wayne	2.21	1.45	0.70	1.06	0.68	0.32	0.17	0.29	0.66	0.19
Regional Totals	9.67	6.17	3.70	6.13	5.55	7.90	6.66	8.09	8.77	9.07
Northeastern										
Daggett	--	0.91	--	0.24	0.68	0.08	0.68	0.26	0.12	0.04
Duchesne	1.93	1.64	1.23	1.06	3.18	1.74	1.22	0.98	1.40	1.24
Uintah	4.97	1.82	3.17	2.47	4.31	2.84	3.18	1.93	1.98	1.81
Regional Totals	6.90	4.37	4.40	3.77	8.17	4.66	5.07	3.17	3.50	3.09
Southeastern										
Carbon	4.70	1.45	1.58	2.12	2.72	1.01	1.76	2.22	3.33	1.62
Emery	1.66	0.36	1.58	0.94	0.79	0.77	0.91	1.24	1.07	0.73
Grand	1.38	0.91	1.23	1.29	1.59	1.58	2.03	1.41	1.93	1.47
San Juan	0.28	--	0.35	0.12	0.79	0.65	0.37	0.43	0.08	0.73
Regional Totals	8.02	2.72	4.74	4.47	5.89	4.01	5.07	5.30	6.42	4.56
Unknown counties	0.55	26.00	26.23	3.17	0.45	2.31	3.11	--	1.73	2.05
Mixed counties	10.77	5.27	5.46	1.88	--	4.13	--	--	0.00	--
STATE TOTALS	100.00									

*Distribution of hunting pressure for 1967 and later is based on hunter-days rather than number of hunters reporting.

Table 9. . State-wide summary of chukar partridge harvest statistics, 1956-71

Year	Total hunters	Total harvest	Hunter days afield	Chukars per hunter-day	Chukars per hunter
1956	--	--	--	--	0.91
1957	--	--	--	--	0.92
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
<hr/>					
TOTALS (1958-71)	222,088	607,062	622,105	0.98	2.73
<hr/>					
AVERAGES (1958-70)	15,705	41,993	43,594	0.96	2.67

Table 10. Chukar Field Bag Check Summary, 1971

Region and County	ALL HUNTS				COMPLETE HUNTS				
	Total Parties	Total Hunters	Total Hours	Total Birds/100 hrs.	Total Complete Hunts	Total Hunters	Total Hours	Total Birds/100 hrs.	Birds/Hunter
Northern Region									
Box Elder	120	332	1739	295	17	120	1739	295	17
Cache	12	30	106	31	29	12	106	31	29
Davis	--	--	--	--	--	--	--	--	--
Morgan	6	13	33	12	36	4	30	10	33
Rich	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--
Regional Totals	138	375	1878	338	18	136	1875	336	18
Central Region									
Juab	28	71	442	108	24	23	411	105	26
Salt Lake	3	4	10	3	30	2	8	3	38
Sanpete	5	24	60	6	10	2	26	3	12
Tooele	89	266	2293	329	14	67	1164	208	18
Utah	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--
Regional Totals	125	365	2805	446	16	94	1609	319	20
Southern Region									
Beaver	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--
Millard	7	31	174	58	33	4	100	41	41
Piute	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--
Regional Totals	7	31	174	58	33	4	100	41	41
Northeastern Region									
Daggett	21	55	78	38	49	9	34	9	26
Duchesne	5	12	34	10	29	--	--	--	--
Uintah	12	35	125	75	60	5	50	6	12
Regional Totals	38	102	237	123	52	14	84	15	18
Southeastern Region									
Carbon	7	12	27	3	11	--	--	--	--
Emery	1	5	20	0	0	1	20	0	0
Grand	4	10	37	6	16	4	37	6	16
San Juan	--	--	--	--	--	--	--	--	--
Regional Totals	12	27	84	9	11	5	57	6	11
STATE TOTALS	320	900	5178	974	19	253	3725	717	19

Table 11. Chukar field bag check trend as determined via field bag checks, 1966-71.

Region and County	1966		1967		1968		1969		1970		1971	
	Birds/ 100 hrs. Hunter											
Northern Region												
Box Elder	34	1.27	16	0.79	16	0.90	20	1.08	20	0.86	17	0.89
Cache	21	0.48	22	0.90	24	0.89	14	0.47	--	--	29	1.03
Davis	--	--	9	0.27	20	0.50	--	--	12	0.47	--	--
Morgan	--	--	--	--	--	--	--	--	37	2.86	36	1.00
Rich	--	--	--	--	100	1.00	--	--	--	--	--	--
Summit	--	--	33	0.66	28	1.00	--	--	96	3.00	--	--
Weber	--	--	0	0	--	--	100	0.50	7	0.17	--	--
Regional Totals	30	0.99	16	0.78	17	0.90	18	0.91	21	0.83	18	0.90
Central Region												
Juab	150	2.00	62	1.25	76	3.18	48	3.72	20	1.08	24	1.72
Salt Lake	--	--	0	0	0	0	--	--	63	2.00	30	1.00
Sanpete	400	2.00	--	--	44	1.17	--	--	5	0.25	10	0.33
Tooele	83	2.80	43	1.60	65	2.73	69	1.45	38	2.35	14	1.18
Utah	50	3.70	--	--	10	0.30	28	0.81	10	0.31	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	84	2.80	42	1.42	55	1.98	41	1.49	21	0.96	16	1.28
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	27	0.75	--	--
Millard	--	--	--	--	72	6.23	--	--	54	3.24	33	2.93
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	0	0	25	1.00	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	--	--	0	0	72	6.35	--	--	44	1.78	33	2.93
Northeastern Region												
Daggett	--	--	97	1.67	116	2.40	--	--	39	1.00	49	0.41
Duchesne	31	1.74	33	1.00	47	2.38	4	0.19	7	0.50	29	0.83
Uintah	101	3.08	27	1.55	21	1.53	9	0.55	15	0.55	60	0.55
Regional Totals	54	2.44	33	1.52	47	2.12	8	0.40	15	0.67	52	0.45
Southeastern Region												
Carbon	--	--	--	--	216	2.38	--	--	--	--	11	0.25
Emery	61	3.00	--	--	--	--	--	--	--	--	0	0
Grand	--	--	28	2.50	200	2.00	--	--	73	2.20	16	0.60
San Juan	46	1.70	--	--	47	1.46	49	2.23	--	--	--	--
Regional Totals	57	2.66	28	2.50	93	1.97	49	2.23	73	2.20	11	0.40
STATE TOTALS	52	2.04	19	0.89	26	1.20	20	0.98	23	0.94	19	1.05

SAGE GROUSE

SUMMARY

Strutting ground counts indicated a reduced breeding population level State-wide in comparison to 1970. Increased production reflected in brood counts compensated for the apparent decrease in the breeding population and the net result was an overall increase in sage grouse on a State-wide basis. This increase was reflected in harvest information as both total harvest and hunter success increased. Only the Southern Region showed a decline in both production and harvest indexes.

The long-term trend of sage grouse harvest statistics is prominently upward; however, this is largely a reflection of changes in harvest regulations. Since 1963, seasons have been generally less restrictive enabling better utilization of this resource.

The trend of the sage grouse population since the low of 1965 was upward until 1969 when the population peaked. Sage grouse abundance in 1970 was well below 1969 but still above average. The population level in 1971 was higher than 1970 but still below the peak of 1969.



Strutting Ground Counts

The trend of the sage grouse breeding population as indicated by strutting ground counts is shown in Table 1 of this section. Results of this survey for 1971 compared to 1970 and the 1967-70 average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Number of grounds counted	108	+17	+71
Total grouse counted	2,354	- 7	+47
Average male grouse per ground	21.8	-21	- 8
Percent change from previous year (comparable grounds)	-17	--	--

These counts indicate that the breeding population in 1971 was somewhat lower than in 1970. The increased number of grounds observed primarily reflects increased effort locating and mapping strutting grounds.

Brood Counts

Results of this survey for 1971 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 Table 3-5. Indexes for 1971 compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total sage grouse counted	3,110	+14	+ 6
Young per 100 adults	138	+18	-10
Mean brood size	4.62	+ 8	+ 1
Sage grouse observed per 100 hours	383	+11	+ 5
Total hours effort	812	+ 3	+ 3

Indicated production was better than in 1970, but below average on a young per adult basis. Indicated density was higher than both 1970 and the average since 1967. All of these indexes reflected increased abundance of sage grouse in 1971.

Harvest

Hunter Questionnaire

Results of the 1971 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 State-wide harvest statistics in Table 10. The 1971 hunting season compared to 1970 and the average as follows:

	1971	Percent change from	
		1970	Average
Total sage grouse counted	3,110	+14	+ 6
Young per 100 adults	138	+18	-10
Mean brood size	4.62	+ 8	+ 1
Sage grouse observed per 100 hours	383	+11	+ 5
Total hours effort	812	+ 3	+ 3

Indicated production was better than in 1970, but below average on a young per 100 adults basis. Indicated density was higher than both 1970 and the average since 1967. All of these indexes reflected increased abundance of sage grouse in 1971.

Harvest

Hunter Questionnaire

Results of the 1971 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 State-wide harvest statistics in Table 10. The 1971 hunting season compared to 1970 and the average as follows:

	1971	Percent change from	
		1970	Average
Sage grouse hunters	12,893	+ 7	+66
Sage grouse harvested	20,013	+26	+93
Hunter-days afield	21,509	+16	+90
Sage grouse per hunter	1.55	+17	+ 1
Sage grouse per hunter-day	0.93	+ 8	+ 1

Harvest information reflected the increased sage grouse abundance indicated by brood data. Total harvest increased substantially reflecting both increased hunter success and hunting pressure.

The long-term trend of sage grouse harvest statistics is upward (Figure 1). This primarily reflects better utilization of the resource via more liberal seasons in recent years, but also is a result of an upward trend in sage grouse abundance since 1965.

Field Bag Checks

A summary of field-bag-check data for 1971 is shown in Table 11. Hunter success trends determined via this method since 1966 are shown in Table 12. Results of the 1971 survey compared to 1970 and the average as follows:

	1971	Percent change from	
		1970	Average
Total hunters checked	2,989	-12	+46
Total hours hunted	12,221	-23	+47
Sage grouse per hunter (complete hunts)	0.74	-13	-17
Sage grouse bagged per 100 hours	17	+ 6	-23
Average hours per hunter-day (complete hunts)	4.5	-12	+18
Hours hunted per grouse bagged	6.0	- 3	+22

Results of this survey indicate that hunter success State-wide declined from 1970, just the opposite of the hunter questionnaire. However, the bulk of the field bag check sample was obtained in counties where the harvest questionnaire also showed reduced success from 1970.

The average hunter spent less hours hunting each day and slightly less time to bag each grouse than in 1970.

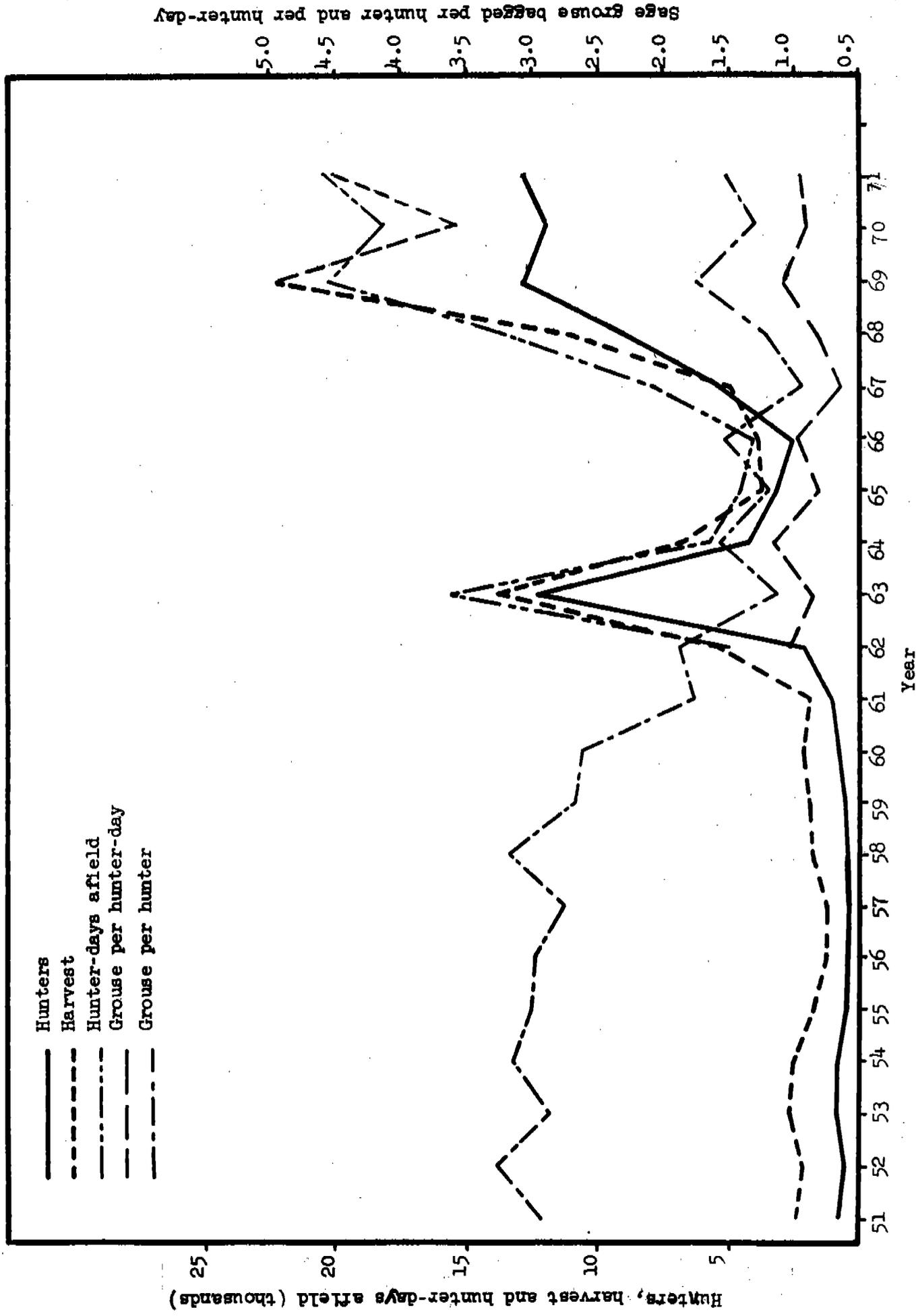


Figure 1. State-wide trend of sage grouse harvest statistics,

Table 1. Summary of sage grouse strutting ground counts by region and county and comparisons to averages, 1959-71.

Region and County	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
<u>Northern Region</u>													
BOX ELDER													
No. strutting grounds counted	6	10	7	3	9	6	6	8	12	15	22	21	21
Total grouse counted	219	292	218	106	155	73	96	118	152	253	667	556	479
County average	36.5	29.2	31.1	35.3	17.2	12.2	16.0	14.8	12.7	16.9	30.3	26.5	22.8
(All strutting grounds)													
% Change from previous year - comparable grounds	--	-2.8	-13.1	-31.4	-37.1	-33.3	+35.7	-11.1	-33.3	+23.1	+94.1	-8.4	-14.0
CACHE													
No. strutting grounds counted								1	1	3	2	2	3
Total grouse counted								24	45	30	45	59	68
County average								24.0	45.0	10.0	22.5	29.5	22.7
(All strutting grounds)													
% Change from previous year - comparable grounds									+87.5	-77.8	+57.0	+31.1	+6.8
MORGAN													
No. strutting grounds counted											2	2	2
Total grouse counted											85	45	35
County average											42.5	22.5	17.5
(All strutting grounds)											--	-47.0	-22.2
% Change from previous year - comparable grounds													
RICH													
No. strutting ground counted	6	3	6	6	6	5	6	5	5	10	6	8	7
Total grouse counted	214	207	405	231	339	172	98	111	134	280	298	324	240
County average	35.7	69.0	67.5	38.5	56.5	34.4	16.3	22.2	26.8	28.0	49.7	40.5	34.3
(All strutting grounds)													
% Change from previous year - comparable grounds	--	+26.1	+18.8	-43.0	+46.7	-38.9	-48.2	+24.7	+7.2	-1.5	+84.1	-20.0	-12.0
SUMMIT													
No. strutting grounds counted			4	3	4	4	4	4	4	4	5	5	5
Total grouse counted			129	21	51	33	33	33	58	71	168	185	223
County average (All strutting grounds)			32.2	7.0	12.8	8.2	8.2	8.2	14.5	17.8	33.6	37.0	44.6
% Change from previous year - comparable grounds			--	-81.9	+75.7	-35.9	0.0	+24.5	+22.8	+60.1	+10.1	+20.5	93

Table 1. Continued

Region and County	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
REGIONAL TOTALS													
No. strutting grounds counted	12	13	13	13	18	15	16	18	22	32	37	37	38
Total grouse counted	433	499	623	466	515	296	227	286	389	634	1263	1147	1045
Regional average (All strutting grounds)	36.1	38.4	47.9	35.8	28.6	19.7	14.2	15.9	17.7	19.8	34.1	31.0	27.5
% Change from previous year - comparable grounds	--	+8.6	+1.8	-39.6	-5.8	-31.2	-29.3	+6.7	+1.1	+7.9	+84.7	-9.0	-15.9
Southern Region													
GARFIELD													
No. strutting grounds counted	--	--	--	--	--	--	--	--	6	6	10	13	14
Total grouse counted									117	96	213	322	351
County average (All strutting grounds)									19.5	16.0	21.3	24.8	25.1
% Change from previous year - comparable grounds									--	-17.9	+59.4	+31.0	-0.3
WAYNE													
No. strutting grounds counted									9	7	8	11	11
Total grouse counted									302	331	497	458	248
County average (All strutting grounds)									33.6	47.3	62.1	41.6	22.5
% Change from previous year - comparable grounds									--	+3.0	+46.6	-14.6	-45.9
BEAVER													
No. strutting grounds counted									2	2	2	2	5
Total grouse counted									0	79	47	47	141
County average (All strutting grounds)									0.0	39.5	23.5	23.5	28.2
% Change from previous year - comparable grounds									--	--	--	-40.5	-49.4
PIUTE													
No. strutting grounds counted	1	0	1	1	1	1	1	1	1	0	1	1	1
Total grouse counted	2	--	--	6	7	7	7	7	2.0	--	6.0	7.0	7.0
County average (All strutting grounds)									--	--	--	+16.7	0
% Change from previous year - comparable grounds									--	--	--	--	0

Region and County 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971

IRON

No. strutting grounds counted									5	3	4	6
Total grouse counted									3	23	64	47
County average (All strutting grounds)									0.6	7.7	16.0	7.8
% Change from previous year - comparable grounds									--	--	-8.7	-50.0

SEVIER

No. strutting grounds counted	1	1	0	1	1	1	1	1	1	0	1	1
Total grouse counted	11	0	--	0	0	0	0	0	11	--	0	0
County average (All strutting grounds)	11.0	0.0	--	0.0	0.0	0.0	0.0	0.0	11.0	--	0.0	0.0
% Change from previous year - comparable grounds	--	100	--	--	--	--	--	--	--	--	--	--

REGIONAL TOTALS

No. strutting grounds counted	17	21	24	33	38
Total grouse counted	432	430	818	928	794
Regional average (All strutting grounds)	25.4	20.5	34.1	28.1	20.9
% Change from previous year - comparable grounds	--	-3.5	+75.4	-4.8	-30.3

Central Region

SANPETE

No. strutting grounds counted												2
Total grouse counted												13
County average (All strutting grounds)												6.5
% Change from previous year - comparable grounds												--

TOOELE

No. strutting grounds counted													4
Total grouse counted													92
County average (All strutting grounds)													23.0
% Change from previous year - comparable grounds													-16.2

WASATCH

No. strutting grounds counted													2
Total grouse counted													70
County average (All strutting grounds)													35.0
% Change from previous year - comparable grounds													-30.0

Table 1. Continued

Region and County	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
REGIONAL TOTALS													
No. strutting ground counted												5	8
Total grouse counted												174	175
Regional average (All strutting grounds)												34.8	21.9
% Change from previous year - comparable grounds												-22.9	-24.1
Northeastern Region													
DAGGETT													
No. strutting grounds counted												1	4
Total grouse counted												26	37
County average (All strutting grounds)												26.0	9.2
% Change from previous year - comparable grounds												--	-38.5
DUCHESNE													
No. strutting grounds counted												2	3
Total grouse counted												27	27
County average (All strutting grounds)												13.5	9.0
% Change from previous year - comparable grounds												--	-25.9
UINTAH													
No. strutting grounds counted												2	0
Total grouse counted												134	98
County average (All strutting grounds)												67.0	49.0
% Change from previous year - comparable grounds												--	-31.6
REGIONAL AVERAGE													
No. strutting grounds counted												2	0
Total grouse counted												134	98
Regional averages (All strutting grounds)												67.0	49.0
% Change from previous year - comparable grounds												--	-31.6

Table 1. Continued

Region and County	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
<u>Southeastern Region</u>													
CARBON													
No. strutting grounds counted	1									7	1	3	
Total grouse counted	1									45	39	58	
County average (All strutting grounds)	1.0									6.4	39.0	19.3	
% Change from previous year - comparable grounds	--									+100	--	0	
EMERY													
No. strutting grounds counted	1									2	3	3	
Total grouse counted	5									17	8	3	
County average (All strutting grounds)	5.0									8.5	2.7	1.0	
% Change from previous year - comparable grounds	--									+60	-82	-62.5	
SAN JUAN													
No. strutting grounds counted	2									3	6	6	
Total grouse counted	8									42	115	152	
County average (All strutting grounds)	4.0									14.0	19.2	25.3	
% Change from previous year - comparable grounds	--									+312	+38.1	+31.8	
REGIONAL TOTALS													
No. strutting grounds counted	4									12	10	12	
Total grouse counted	14									104	121	213	
Regional average (All strutting grounds)	3.5									8.7	12.1	17.8	
% Change from previous year - comparable grounds	--									+193.8	+3.4	+19.8	
STATE TOTALS													
No. strutting grounds counted	12	13	13	13	18	15	16	18	22	59	78	92	108
Total grouse counted	433	499	623	466	515	296	227	286	389	1112	2379	2528	2354
State average grouse per strutting grounds	36.1	38.4	47.9	35.8	28.6	19.7	14.2	15.9	17.7	19.0	30.5	27.5	21.8
% Change from previous year - comparable grounds	--	+8.6	+1.8	-39.6	-5.8	-31.2	-29.3	+6.7	+1.1	+0.9	+81.3	-8.4	-17.0

Table 2. Sage grouse Summer Inventory Summary - 1971.

Region and County	Distinct Broods		Mean		Mixed Yng. & Adults		Adults w/o Yng.	Total Adults Yng.	Total Young/100 Ad.	Vehicle Miles	Hours Effort		Birds/100 hrs.			
	No. Ad.	Yng.	Brood	Ad.	Yng.	Ad.					Yng.	Veh.		Horse	Walk	Total
Northern Region																
Box Elder	8	8	34	4.25	7	29	69	84	63	75	458	32	23	3	58	253
Cache	14	14	63	4.50	3	6	24	41	69	168	222	17	31	--	48	229
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	2	2	11	5.50	--	--	17	19	11	58	60	4	13	--	17	176
Rich	16	16	71	4.44	--	--	36	52	71	137	477	28	--	26	54	228
Summit	40	40	223	5.58	4	26	114	158	249	158	451	35	62	--	97	420
Weber	6	6	26	4.33	--	--	2	8	26	325	75	12	10	--	22	155
Regional Totals	86	86	428	4.98	14	61	262	362	489	135	1743	128	139	29	296	288
Central Region																
Juab	0	0	0	--	0	0	0	0	0	--	64	6	0	4	10	0
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	5	5	30	6.00	4	16	7	16	46	288	433	13	26	19	58	107
Tooele	27	27	113	4.19	4	11	35	66	124	188	265	5	30.5	20	54.5	342
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	17	17	50	2.94	2	5	7	26	55	212	147	7	0	14.5	23.5	377
Regional Totals	49	49	193	3.94	10	32	49	108	225	208	909	31	56.5	56.5	144	230
Southern Region																
Beaver	3	3	15	5.00	0	0	3	6	15	250	25	3	0	2	5	420
Garfield	11	11	41	3.73	13	42	65	89	83	93	341	14.5	6	8	28.5	604
Iron	18	18	78	4.33	8	28	32	58	106	183	712	18	12.5	8	38.5	426
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	41	41	165	4.02	20	42	268	329	207	63	345	26	0	0	26	2061
Regional Totals	73	73	299	4.10	41	112	368	482	411	85	1423	61.5	18.5	18	98	911
Northeastern Region																
Daggett	11	11	44	4.00	13	45	29	53	89	168	105	12	--	5	17	835
Duchesne	12	12	62	5.17	0	0	15	27	62	230	409	43	0	13	56	159
Uintah	62	62	322	5.19	17	81	40	119	403	339	951	60	6	5	71	735
Regional Totals	85	85	428	5.04	30	126	84	199	554	278	1465	115	6	23	144	523
Southeastern Region																
Carbon	3	3	14	4.67	4	2	4	11	16	145	411	29.5	24	6	59.5	45
Emery	0	0	0	--	0	0	0	0	0	--	135	9	--	6	15	0
Grand	0	0	0	--	4	11	0	4	11	275	81	6	--	5	11	133
San Juan	10	10	51	5.10	16	47	114	140	98	70	462	31.5	--	11	42.5	560
Regional Totals	13	13	65	5.00	24	60	118	155	125	81	1089	76	24	28	128	218
STATE TOTALS	306	306	1413	4.62	119	391	881	1306	1804	138	6629	412	244	156	817	383

Table 3. Trend of sage grouse young per 100 adults, 1963-1971.

Region and County	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region									
Box Elder	143	104	200	93	176	162	153	62	75
Cache	233	400	320	300	680	600	71	10	168
Davis	--	--	--	--	--	--	--	--	--
Morgan	71	0	100	50	160	--	533	400	58
Rich	71	144	54	100	85	92	98	133	137
Summit	156	267	243	140	89	133	121	211	158
Weber	--	550	411	--	650	--	208	--	325
Regional Totals	113	120	171	129	159	132	128	94	135
Central Region									
Juab	200	--	--	400	125	600	300	117	--
Salt Lake	118	--	--	--	--	--	--	--	--
Sanpete	200	159	207	427	119	0	191	84	288
Tooele	--	250	286	617	200	416	395	215	188
Utah	400	--	--	--	--	--	--	--	--
Wasatch	50	179	450	200	101	90	89	205	212
Regional Totals	78	171	233	313	104	103	137	170	208
Southern Region									
Beaver	100	121	46	--	173	--	169	--	250
Garfield	--	112	168	141	132	263	238	107	93
Iron	--	100	200	--	400	--	550	214	183
Kane	--	--	--	--	--	--	470	300	--
Millard	--	900	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--
Sevier	--	357	350	322	98	82	107	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	--	188	270	124	140	371	178	347	63
Regional Totals	100	138	169	161	135	257	201	186	85
Northeastern Region									
Daggett	400	343	242	216	145	560	493	344	168
Duchesne	111	224	273	700	140	209	156	77	230
Uintah	287	420	304	612	237	596	450	419	339
Regional Totals	252	286	268	304	176	446	383	305	278
Southeastern Region									
Carbon	350	0	500	533	433	512	250	167	145
Emery	--	--	0	800	--	300	164	100	--
Grand	--	400	800	--	--	--	--	--	275
San Juan	158	38	--	--	61	214	37	28	70
Regional Totals	186	50	350	600	94	369	64	30	81
STATE TOTALS	123	130	196	179	141	178	160	117	138

Table 4. Trend of sage grouse mean brood size, 1963-1971.

Region and County	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region									
Box Elder	4.48	3.97	4.00	3.82	4.04	3.80	5.16	4.13	4.25
Cache	5.00	4.00	4.00	6.50	6.80	6.00	4.60	5.00	4.50
Davis	--	--	--	--	--	--	--	--	--
Morgan	2.86	--	4.00	5.00	4.00	--	5.33	4.00	5.50
Rich	3.60	3.25	5.00	4.37	5.00	4.07	5.42	4.68	4.44
Summit	4.67	5.33	5.66	5.25	4.47	3.94	5.91	5.00	5.58
Weber	--	5.50	4.11	--	6.50	--	3.38	--	4.33
Regional Totals	4.12	4.07	4.54	4.90	4.43	3.94	5.18	4.55	4.98
Central Region									
Juab	4.00	--	--	4.00	--	6.00	2.00	3.50	--
Salt Lake	2.00	--	--	--	--	--	--	--	--
Sanpete	5.00	3.58	6.88	5.88	5.67	--	5.40	4.50	6.00
Tooele	--	2.50	5.00	6.17	2.00	5.75	5.62	4.44	4.19
Utah	4.00	--	--	--	--	--	--	--	--
Wasatch	4.36	5.66	4.50	5.60	5.15	4.29	4.64	4.52	2.94
Regional Totals	4.25	4.10	6.07	5.76	5.13	4.46	5.03	4.45	3.94
Southern Region									
Beaver	4.93	3.83	3.83	--	4.60	--	5.44	--	5.00
Garfield	3.82	5.52	4.44	5.10	3.50	4.10	3.86	3.67	3.73
Iron	--	3.00	--	--	4.00	--	--	3.67	4.33
Kane	--	--	--	--	--	--	5.00	3.00	--
Millard	--	9.00	--	--	--	--	--	--	--
Piute	2.31	--	--	--	--	--	--	--	--
Sevier	4.25	4.17	4.67	4.58	5.20	4.62	4.14	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	4.72	4.00	4.47	5.11	3.68	4.91	3.89	3.55	4.02
Regional Totals	4.24	4.76	4.49	4.96	3.89	4.42	4.07	3.60	4.10
Northeastern Region									
Daggett	7.25	3.43	3.83	5.33	3.00	6.00	4.93	4.37	4.00
Duchesne	4.44	4.75	3.75	7.00	5.20	4.09	5.00	5.00	5.17
Uintah	5.50	4.20	6.58	6.12	5.70	6.13	4.91	4.44	5.19
Regional Totals	5.40	4.15	4.57	5.72	4.90	5.54	4.92	4.46	5.04
Southeastern Region									
Carbon	--	--	5.00	5.33	4.00	5.86	2.50	5.00	4.67
Emery	3.50	--	--	8.00	--	3.00	9.33	1.00	--
Grand	--	4.00	8.00	--	--	--	--	--	--
San Juan	4.75	1.25	--	--	4.00	5.00	4.20	4.29	5.10
Regional Totals	4.33	1.80	7.00	6.00	4.00	5.36	4.92	4.00	5.00
STATE TOTALS	4.30	4.28	4.70	5.19	4.48	4.50	4.82	4.28	4.62

Table 5. Trend of sage grouse observed per 100 hours, 1967-1971.

Region and County	1967	1968	1969	1970	1971
Northern Region					
Box Elder	471	273	563	365	253
Cache	390	100	90	431	229
Davis	--	--	--	--	--
Morgan	34	--	59	333	176
Rich	27	436	678	987	228
Summit	131	522	236	161	420
Weber	375	--	800	--	155
Regional Totals	283	358	468	387	288
Central Region					
Juab	180	467	200	217	0
Salt Lake	--	--	--	--	--
Sanpete	128	80	135	123	107
Tooele	25	426	407	194	342
Utah	--	--	--	0	--
Wasatch	571	735	690	321	377
Regional Totals	318	475	427	208	230
Southern Region					
Beaver	--	--	1186	--	420
Garfield	--	941	646	409	604
Iron	--	--	118	346	426
Kane	--	--	924	80	--
Millard	--	--	--	--	--
Piute	--	0	--	--	--
Sevier	--	283	581	--	--
Washington	--	--	--	--	--
Wayne	--	691	1363	447	2061
Regional Totals	244	601	714	388	911
Northeastern Region					
Daggett	715	388	626	414	835
Duchesne	400	117	122	100	159
Uintah	385	671	487	474	735
Regional Totals	444	313	361	319	523
Southeastern Region					
Carbon	--	63	26	59	45
Emery	--	22	152	33	0
Grand	--	--	--	0	133
San Juan	--	157	2875	653	560
Regional Totals	159	68	179	451	218
STATE TOTALS	296	374	443	346	383

Table 6. Summary of sage grouse hunter success and distribution of harvest and hunting pressure by region and county, 1971.

Region and County	Hunters reporting	Days hunted	Birds bagged	Birds per hunter-day	Birds per hunter**	% of pressure	% of harvest
<u>Northern</u>							
Box Elder	109	170	190	1.12	1.53	16.90	20.30
Cache	36	60	39	0.65	1.07	5.96	4.17
Davis	7	17	7	0.41	1.55	1.69	0.75
Morgan	13	23	11	0.48	2.67	2.29	1.18
Rich	50	69	58	0.84	2.00	6.86	6.20
Summit	46	62	42	0.68	1.25	6.16	4.49
Weber	34	47	23	0.49	1.24	4.67	2.46
Regional Totals	295	448	370	0.83	1.34	44.53	39.53
<u>Central</u>							
*Juab	2	2	3	1.50	3.00	0.20	0.32
*Salt Lake	7	14	14	1.00	1.47	1.39	1.50
Sanpete	9	11	9	0.82	2.00	1.09	0.96
Tooele	24	42	35	0.83	1.33	4.17	3.74
Utah	16	32	28	0.88	1.86	3.18	2.99
Wasatch	14	25	10	0.40	2.25	2.49	1.07
Regional Totals	72	126	99	0.79	1.60	12.52	10.58
<u>Southern</u>							
Beaver	9	19	18	0.95	2.00	1.89	1.92
Garfield	31	50	71	1.42	3.15	4.97	7.59
Iron	10	15	8	0.53	1.18	1.49	0.85
Kane	2	4	2	0.50	2.00	0.40	0.21
Millard	0	0	0	0.00	0.00	0.00	0.00
Piute	9	13	18	1.38	3.50	1.29	1.92
Sevier	13	22	17	0.77	1.15	2.19	1.82
*Washington	2	3	2	0.67	1.56	0.30	0.21
Wayne	59	91	105	1.15	2.00	9.05	11.22
Regional Totals	135	217	241	1.11	1.76	21.57	25.75
<u>Northeastern</u>							
Daggett	5	11	17	1.55	4.67	1.09	1.82
Duchesne	29	46	64	1.39	2.17	4.57	6.84
Uintah	36	67	66	0.99	1.92	6.66	7.05
Regional Totals	70	124	147	1.19	2.14	12.33	15.71
<u>Southeastern</u>							
Carbon	22	35	27	0.77	1.33	3.48	2.88
Emery	2	9	0	0.00	0.00	0.89	0.00
Grand	2	3	4	1.33	1.67	0.30	0.43
San Juan	5	8	10	1.25	1.50	0.80	1.07
Regional Totals	31	55	41	0.75	1.29	5.47	4.38
Unknown counties	22	36	38	1.06	2.50	3.58	4.06
Mixed counties	0	0	0	--	--	--	--
STATE TOTALS	625	1006	936	0.93	1.55	100.00	100.00

*Illegal Areas

**Based on county of residence

Table 7. Summary of sage grouse bagged per hunter-day by region and county, 1963-71.

Region and county	1963	1964	1965	1966	1967	1968	1969	1970 *	1971
Northern									
Box Elder	1.02	Closed Season			0.76	0.42	1.44	1.21	1.12
Cache	1.06	"	"		0.36	0.51	0.65	0.30	0.65
Davis	--	"	"		0.00	0.25	0.92	0.00	0.41
Morgan	0.67	"	"		1.20	0.50	0.57	0.55	0.48
Rich	1.49	"	"		0.76	0.79	0.68	0.55	0.84
Summit	0.92	"	"		0.68	0.51	0.62	0.68	0.68
Weber	0.84	"	"		0.36	0.96	1.63	0.38	0.49
Regional Totals	1.15	Closed Season			0.64	0.59	1.03	0.81	0.83
Central									
Juab	1.00	1.00	Closed Season				Closed Season		
Salt Lake	0.67	Closed Season				Closed Season			
Sanpete	1.25	1.25	Closed Season			0.86	0.81	0.40	0.82
Tooele	0.43	Closed Season				Closed Season			
Utah	0.00	0.43	0.43	1.00	0.18	0.35	0.83	0.44	0.88
Wasatch	1.06	Closed Season				0.91	0.72	0.68	0.40
Regional Totals	0.93	0.88	0.43	1.00	0.18	0.77	0.79	0.56	0.79
Southern									
Beaver	0.67	2.00	1.11	1.13	Closed	1.43	1.59	0.83	0.95
Garfield	1.00	1.77	1.63	0.67	"	1.23	1.76	1.11	1.42
Iron	1.67	--	0.00	0.20	"	0.77	1.08	1.45	0.53
Kane	--	--	1.00	2.00	"	0.75	1.00	1.00	0.50
Millard	3.00	--	1.00	--	"	0.00	--	0.57	--
Piute	1.00	2.17	1.00	0.89	0.67	0.92	1.24	0.75	1.38
Sevier	1.08	1.20	0.65	0.39	0.17	0.95	0.93	1.04	0.77
Washington	2.00	1.75	--	4.00	Closed	0.00	1.00	0.00	Closed Season
Wayne	1.58	1.60	0.83	1.18	0.80	1.52	1.28	1.44	1.15
Regional Totals	1.20	1.71	1.12	1.31	0.48	1.18	1.39	1.19	1.11
Northeastern									
Daggett	2.00	2.50	0.67	0.50	0.40	1.00	1.57	0.20	1.55
Duchesne	1.00	1.20	1.15	1.20	0.60	1.11	1.05	1.30	1.39
Uintah	1.15	1.64	0.87	1.05	1.25	1.48	1.25	0.97	0.99
Regional Totals	1.30	1.70	0.95	0.80	0.95	1.29	1.24	1.02	1.19
Southeastern									
Carbon	2.00	1.00	0.48	1.50	0.55	0.75	0.36	0.52	0.77
Emery	--	--	0.00	--	2.00	0.70	0.71	1.50	0.00
Grand	--	--	--	--	--	--	2.00	0.00	1.33
San Juan	2.00	--	0.00	--	2.00	0.00	1.33	1.08	1.25
Regional Totals	2.00	1.00	0.35	1.50	0.74	0.70	0.52	0.73	0.75
Unknown counties	0.28	0.45	0.03	2.00	0.94	0.43	--	0.76	1.06
Mixed counties	0.33	1.33	--	--	0.00	--	--	0.00	--
Illegal Areas	--	0.74	1.00	1.27	0.34	0.46	2.16	0.71	1.00
STATE TOTALS	0.89	1.18	0.83	0.99	0.65	0.82	1.09	0.86	0.93

*Northern Region counties (except part of Box Elder) and Tooele and Wasatch Counties were limited to a one bird per day bag limit. Southern Region counties had a three bird daily bag limit in 1970. Season length was seven days in all but Wasatch and Tooele Counties where it was two days.

Table 9 Distribution of sage grouse hunting pressure by region and county, 1963-71.

Region and county	1963	1964	1965	1966	1967*	1968	1969	1970	1971
Northern									
Box Elder	11.11	Closed Season			9.66	8.09	9.98	17.20	16.90
Cache	5.56	"	"		7.31	5.34	5.24	4.77	5.96
Davis	--	"	"		0.52	1.83	1.21	0.11	1.69
Morgan	0.64	"	"		1.31	1.22	1.41	2.44	2.29
Rich	12.82	"	"		10.97	7.33	6.96	6.22	6.86
Summit	7.69	"	"		7.31	5.65	5.34	6.88	6.16
Weber	3.85	"	"		3.66	3.97	5.24	2.89	4.67
Regional Totals	41.67	0.00	0.00	0.00	40.73	33.44	35.38	40.51	44.53
Central									
Juab	0.21	6.49	Closed Season				Closed Season		
Salt Lake	0.64		Closed Season				Closed Season		
Sanpete	1.28	1.95	Closed Season			2.14	1.61	2.22	1.09
Tooele	2.35		Closed Season					2.77	4.17
Utah	0.21	3.25	2.98	9.92	2.87	3.97	9.48	3.00	3.18
Wasatch	8.33		Closed Season			10.38	10.58	10.88	2.49
Regional Totals	13.02	11.69	2.98	9.92	2.87	16.49	21.67	19.64	12.52
Southern									
Beaver	0.43	2.60	4.76	1.53	Closed	2.14	1.71	2.55	1.89
Garfield	2.78	14.94	16.07	12.21	Closed	3.36	6.85	3.88	4.97
Iron	0.43	--	0.60	3.05	Closed	1.98	1.21	1.22	1.49
Kane	--	--	0.60	0.76	Closed	0.61	0.40	0.22	0.40
Millard	0.21	--	0.60	--	Closed	0.31	--	0.78	--
Plute	1.92	3.25	7.74	9.16	3.13	1.83	2.12	0.44	1.29
Sevier	1.92	4.55	7.14	9.16	7.83	3.05	2.72	2.66	2.19
Washington	0.21	1.95	--	0.76	--	0.31	0.20	0.00	0.30
Wayne	1.71	7.79	10.71	9.16	5.22	6.72	6.96	8.32	9.05
Regional Totals	9.61	35.08	48.22	45.79	16.18	20.31	22.18	20.09	21.57
Northeastern									
Daggett	0.85	1.95	1.19	2.29	1.31	1.07	2.12	1.11	1.09
Duchesne	1.07	2.60	4.76	10.69	7.83	5.34	3.93	4.44	4.57
Uintah	1.92	5.89	9.52	11.45	11.49	6.72	7.76	6.88	6.66
Regional Totals	3.84	10.44	15.47	24.43	20.63	13.13	13.81	12.43	12.33
Southeastern									
Carbon	0.43	3.90	10.71	3.82	5.22	2.44	3.33	3.44	3.48
Emery	--	--	2.98	--	0.26	1.53	0.71	0.44	0.89
Grand	--	--	--	--	--	--	0.10	0.11	0.30
San Juan	0.21	--	0.60	--	0.52	0.15	0.30	1.33	0.80
Regional Totals	0.64	3.90	14.29	3.82	6.01	4.12	4.44	5.33	5.47
Unknown counties	28.85	20.13	10.71	0.76	4.18	8.24	--	1.89	3.58
Mixed counties	2.35	1.95	--	--	1.83	--	--	0.11	--
Illegal areas	--	16.90	8.35	15.26	7.57	4.27	2.52	0.77	1.89
STATE TOTALS	100.00								

*Distribution of hunting pressure for 1967 and later based on hunter-days rather than number of hunters reporting.

Table 10. Statewide summary of sage grouse harvest statistics, 1951-71.

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	13,793	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	21,509	0.93	1.55
TOTALS					
(1963-71)	74,857	102,833	111,992	0.92	1.37
AVERAGES					
(1963-70)	7,746	10,352	11,310	0.92	1.34

*The number of sage grouse hunters and consequently harvest was limited by permits available from 1951 through 1962.

**Estimated

***Totals and indexes based on indiscreet data.

Table 11. Sage grouse field bag check summary, 1971.

Region and County	ALL HUNTS				COMPLETE HUNTS					
	Total		Total Birds/		Total Complete		Total Total Birds/			
	Parties	Hunters	Hours	Total Birds	Hunts	Hunters	Hours	Birds/		
			100 hrs.				100 hrs.	Hunter		
Northern Region										
Box Elder	237	597	3207	594	19	597	3207	594	19	.99
Cache	60	136	549	39	7	136	549	39	7	.29
Davis	--	--	--	--	--	--	--	--	--	--
Morgan	8	24	48	5	10	24	48	5	10	.21
Rich	183	486	1782	249	14	432	1677	237	14	.55
Summit	19	35	86	22	26	14	44	14	32	1.00
Weber	11	27	110	10	9	26	107	10	9	.38
Regional Totals	518	1305	5782	919	16	1229	5632	899	16	.73
Central Region										
Juab	--	--	CLOSED SEASON	--	--	--	--	--	--	--
Salt Lake	--	--	CLOSED SEASON	--	--	--	--	--	--	--
Sanpete	17	61	125	7	6	19	49	7	14	.37
Tooele	44	101	312	49	16	68	256	46	18	.68
Utah	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	CLOSED SEASON	--	--	--	--	--	--	--
Regional Totals	61	162	437	56	13	87	305	53	17	.61
Southern Region										
Beaver	--	--	--	--	--	--	--	--	--	--
Garfield	25	92	317	67	21	25	121	18	15	.72
Iron	31	98	206	70	34	43	114	44	39	1.02
Kane	2	6	12	0	0	2	6	0	0	0.00
Millard	--	--	--	--	--	--	--	--	--	--
Piute	9	35	87	20	23	13	45	13	29	1.00
Sevier	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--
Wayne	376	914	4469	582	13	890	4427	578	13	.65
Regional Totals	443	1145	5091	739	15	973	4713	653	14	.67
Northeastern Region										
Daggett	21	51	136	52	38	35	101	40	40	1.14
Duchesne	28	102	271	79	29	44	135	38	28	.86
Uintah	61	180	410	166	40	85	226	126	56	1.48
Regional Totals	110	333	871	297	36	164	462	204	44	1.24
Southeastern Region										
Carbon	6	19	29	2	7	2	4	2	50	1.00
Emery	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--
San Juan	10	25	65	19	29	11	12	17	142	1.55
Regional Totals	16	44	94	21	22	13	16	19	119	1.46
STATE TOTALS	1148	2989	12221	2032	17	982	11128	1828	16	.74

Table 12. Sage grouse hunter success trend determined by field bag checks, 1966-71.

Region and County	1966		1967		1968		1969		1970		1971	
	Birds/ 100 hrs. Hunter											
Northern Region												
Box Elder	--	--	29	0.81	16	0.86	23	1.24	24	1.00	19	0.99
Cache	--	--	6	0.38	18	0.52	11	0.63	35	1.10	7	0.29
Davis	--	--	--	--	--	--	--	--	27	0.98	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	10	0.21
Rich	--	--	14	0.52	12	0.46	9	0.62	--	--	14	0.55
Summit	--	--	45	0.93	36	0.91	28	0.75	--	--	26	1.00
Weber	--	--	25	0.25	10	0.42	15	0.63	10	0.52	9	0.38
Regional Totals	--	--	12	0.50	14	0.52	15	0.90	24	0.99	16	0.73
Central Region												
Juab	--	--	--	--	--	--	--	--	50	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	16	0.28	--	--
Sanpete	--	--	--	--	65	1.17	3	0.12	21	0.61	6	0.37
Tooele	--	--	--	--	--	--	--	--	20	2.18	16	0.68
Utah	--	--	--	--	--	--	--	--	26	0.77	--	--
Wasatch	--	--	--	--	41	0.98	28	0.84	--	--	--	--
Regional Totals	--	--	--	--	42	0.98	26	0.79	21	0.61	13	0.61
Southern Region												
Beaver	68	1.31	--	--	44	2.30	34	1.36	19	0.67	--	--
Garfield	18	0.57	--	--	--	--	39	1.51	20	0.50	21	0.72
Iron	28	1.00	--	--	37	1.62	27	0.71	19	0.77	34	1.02
Kane	--	--	--	--	--	--	36	1.05	--	--	--	--
Millard	--	--	--	--	--	--	--	--	12	0.98	--	--
Piute	--	--	--	--	--	--	--	--	32	1.32	23	1.00
Sevier	--	--	--	--	--	--	--	--	25	1.36	--	--
Washington	--	--	--	--	--	--	--	--	7	0.43	--	--
Wayne	36	1.51	--	--	35	1.31	27	2.02	--	--	13	0.65
Regional Totals	24	0.81	--	--	37	1.35	34	1.49	18	1.07	15	0.67
Northeastern Region												
Daggett	82	1.27	28	0.91	46	1.41	23	1.68	--	--	38	1.14
Duchesne	22	0.93	34	1.61	37	1.36	38	1.39	15	0.99	29	0.86
Uintah	48	1.30	43	1.54	39	1.42	33	1.10	19	1.16	40	1.48
Regional Totals	41	1.19	37	1.40	40	1.41	32	1.24	17	1.06	36	1.24
Southeastern Region												
Carbon	100	2.00	25	1.50	62	1.57	5	0.30	5	0.10	7	1.00
Emery	--	--	13	1.20	30	1.22	38	1.10	24	0.96	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	0	0.00	--	--	--	--	18	0.80	--	--	29	1.55
Regional Totals	9	0.40	19	1.41	52	1.49	17	0.72	23	0.90	22	1.46
STATE TOTALS	25	0.84	18	0.72	30	0.98	22	1.02	20	0.97	17	0.74

FOREST GROUSE

SUMMARY

The high harvest and hunter success of 1970 were indicative of a relatively high breeding population during the spring of 1971. Production of both ruffed and blue grouse during 1971 was average or better. This, combined with the high breeding density, resulted in a fall population similar to 1970.

Harvest data reflected the indicated high density as the second highest harvest to date was recorded. This occurred in spite of poor weather conditions during the deer season when much of the harvest of forest grouse normally occurs. Hunter success was slightly lower than in 1970 but may have been more a result of the lengthened season and adverse weather than grouse population density.

The long-term trend of the State-wide forest grouse population is probably static. In recent years, since the initiation of hunting and collection of inventory data, population peaks have been indicated in 1964, 1968, and 1970. The trend of harvest statistics has been upward since 1961 due to gradually liberalized seasons, increased interest in forest grouse hunting plus the relatively high densities since 1968.



Brood Counts

Ruffed Grouse

Results of the annual random brood survey for 1971 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 1971 compared to 1970 and the average as follows:

	1971	Percent change from	
		1970	Average
Total ruffed grouse observed	449	+34	+37
Young per 100 adults	308	-17	0
Mean brood size	5.16	+11	+10
Ruffed grouse observed per 100 hours	54	-24	-13
Total hours effort (Forest grouse)	828	+37	+46

The indicated production of ruffed grouse (young per 100 adults) was below 1970, but about average. Density, as indicated by the number of ruffed grouse observed per 100 hours, was below both 1970 and the average. This information shows a definite decline in the State-wide ruffed grouse population from 1970; however, considering the high population level of 1970 and a presumed resultant high breeding density, it seemed apparent that the population was well above average in 1971.

Blue Grouse

Results of the annual random brood survey 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 1971 compared to 1970 and the average as follows:

	1971	Percent change from	
		1970	Average
Total blue grouse observed	584	+35	+29
Young per 100 adults	292	+15	+ 1
Mean brood size	4.86	+14	+ 4
Blue grouse observed per 100 hours	71	0	- 3
Total hours effort (Forest grouse)	828	+37	+46

Blue grouse production improved over 1970, but was about average. Indicated density of the State-wide population was similar to both 1970 and the average. In view of a presumed high breeding population, the fall population level was expected to be similar to 1970 or possibly higher.

Harvest

Hunter Questionnaire

Results of the 1971 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 State-wide harvest statistics in Table 14. Harvest statistics for 1971 compared to 1970 and the average as follows:

	1971	Percent change from	
		1970	Average
Forest grouse hunters	13,363	+ 5	+26
Forest grouse harvested	31,901	0	+88
Hunter-days afield	29,100	+ 9	+78
Forest grouse per hunter	2.39	- 4	+38
Forest grouse per hunter-day	1.10	- 8	+ 3
Percent ruffed grouse	49.4	+ 1	+ 5
Percent blue grouse	43.1	+ 2	- 4
Percent unidentified species	7.5	-14	- 4

Total forest grouse harvested in 1971 was similar to 1970 and almost double the long-term average. Hunter success declined slightly from 1970, but was still above average, particularly on a per-hunter basis. Hunting pressure both in terms of total hunters and hunter-days was slightly higher than 1970 and well above average. The increased hunter-days was probably a result of the lengthened season in 1971. Hunters were allowed 24 additional days compared to 1970.

The long-term trend of forest grouse harvest statistics is upward primarily due to gradually liberalized hunting seasons and increased interest in forest grouse hunting since the first hunt in 1961 (Figure 1). Forest grouse populations have also been relatively high since 1968. State-wide population levels have proven more than adequate to support the types of seasons and amount of hunting pressure and harvest which have occurred to date.

Field Bag Checks

A summary of field bag check data for 1971 is found in Table 15. Hunter success trends determined via this method since 1966 are shown in Table 16. Results of the 1971 survey compared to 1970 and the average as follows:

	1971	Percent change from	
		1970	Average
Total hunters checked	1,124	+ 6	+55
Total hours hunted	3,966	+17	+50
Sage grouse per hunter (complete hunts)	0.80	+ 5	+10
Sage grouse bagged per 100 hours	22	+38	+ 5
Average hours per hunter-day (complete hunts)	3.7	-21	- 3
Hours hunted per grouse bagged	4.6	-26	-12

These results indicate improved hunter success in 1971 compared to 1970. This is in opposition to the results of the hunter questionnaire which showed a slight decline; however, most field bag check information is compiled on the opening weekend of the season. Hunters queried via the hunter questionnaire reflect effort expended throughout the season. The longer season in 1971 probably resulted in more hunter-days late in the season when success is lower due to removal of part of the harvestable surplus. This had a depressing effect on success per day

as shown by the questionnaire.

The average hunter spent less hours hunting on each day afield and exerted less hours effort for each forest grouse bagged in 1971 compared to both 1970 and the average.

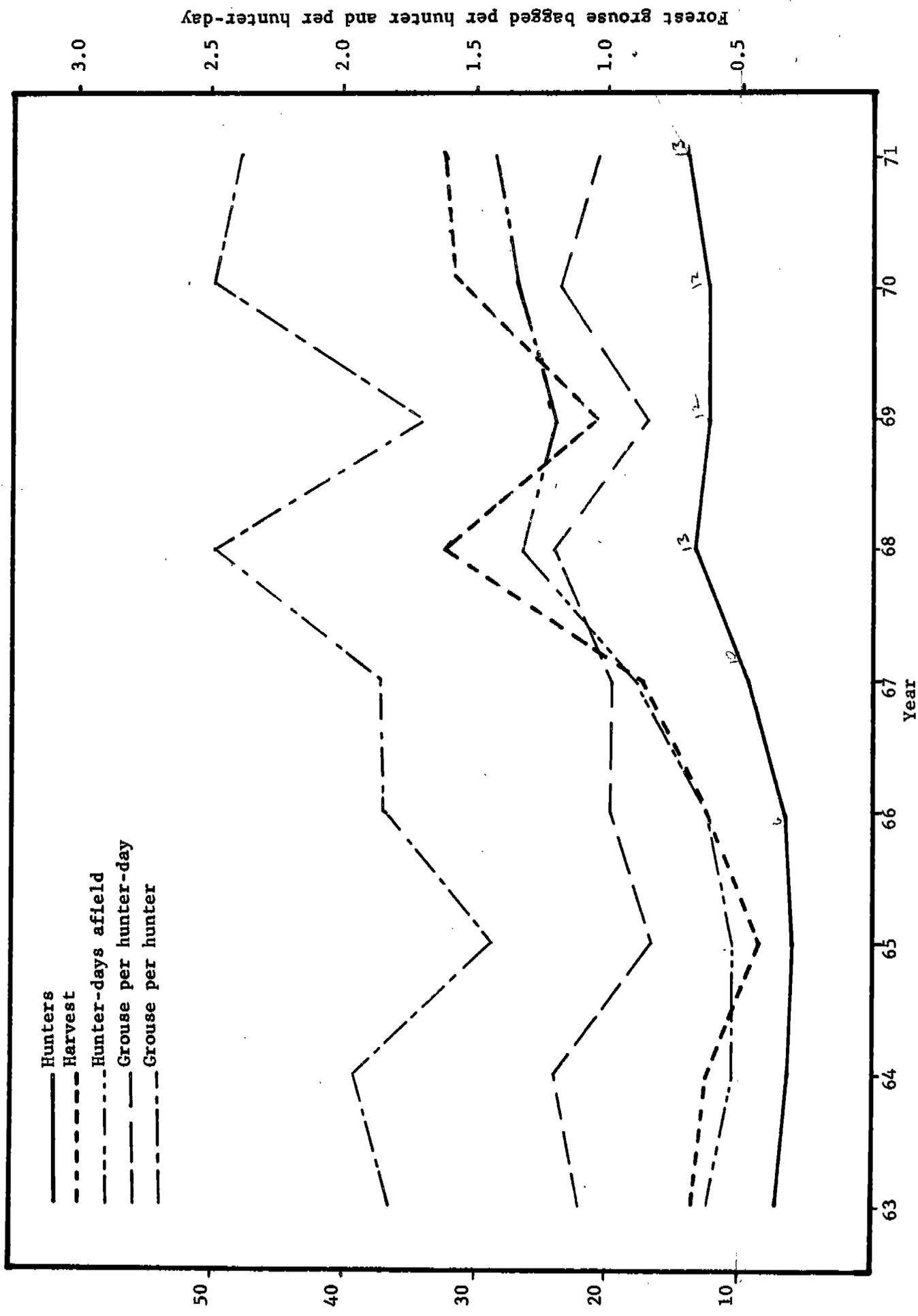


Figure 1. State-wide trends of forest grouse harvest statistics.

Table 1. Ruffed Grouse Summer Inventory Summary, 1971

Region and County	Distinct Broods		Mean Brood	Mixed Yng. & Ad.		Adults w/o Yng.	Total Adults	Total Young	Young/100 Ad.	Grouse/100 hrs.
	No.	Adult Yng.		Adults	Young					
Northern Region										
Box Elder	--	--	--	--	--	--	--	--	--	--
Cache	11	11	5.55	3	8	4	18	69	383	67
Davis	--	--	--	--	--	--	--	--	--	--
Morgan	4	4	6.75	0	0	1	5	27	540	128
Rich	--	--	--	--	--	--	--	--	--	--
Summit	6	6	6.00	0	0	1	7	36	514	108
Weber	2	2	8.00	1	1	2	5	17	340	73
Regional Totals	23	23	6.09	4	9	8	35	149	426	77
Central Region										
Juab	3	3	4.33	0	0	1	4	13	325	142
Salt Lake	1	1	4.00	0	0	3	4	4	100	16
Sanpete	8	8	5.50	8	28	14	30	72	240	167
Tooele	--	--	--	--	--	--	--	--	--	--
Utah	4	4	3.75	0	0	1	5	15	300	40
Wasatch	0	0	--	0	0	0	0	0	--	0
Regional Totals	16	16	4.75	8	28	19	43	104	242	85
Southern Region										
Beaver	2	2	5.00	0	0	3	5	10	200	250
Garfield	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--
Millard	3	3	4.67	0	0	2	5	14	280	317
Piute	2	2	3.00	0	0	0	2	6	300	267
Sevier	6	6	3.83	4	8	4	14	31	221	28
Washington	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--
Regional Totals	13	13	4.08	4	8	9	26	61	235	35
Northeastern Region										
Daggett	--	--	--	--	--	--	--	--	--	0
Duchesne	--	--	--	--	--	--	--	--	--	0
Uintah	3	3	5.00	0	0	1	4	15	375	83
Regional Totals	3	3	5.00	0	0	1	4	15	375	83
Southeastern Region										
Carbon	--	--	--	--	--	--	--	--	--	--
Emery	2	2	5.00	0	0	0	2	10	500	46
Grand	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--
Regional Totals	2	2	5.00	0	0	0	2	10	500	46
STATE TOTALS	57	57	5.16	16	45	37	110	339	308	54

Table 2. Trend of ruffed grouse young per 100 adults ratios, 1963-71.

Region and County	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region									
Box Elder	--	--	--	--	400	0	--	--	--
Cache	362	--	314	630	425	225	321	468	383
Davis	300	--	--	525	600	400	0	--	--
Morgan	--	240	--	200	--	--	200	400	540
Rich	300	--	--	--	300	150	--	--	--
Summit	--	--	0	--	--	500	333	500	514
Weber	--	--	600	257	--	450	143	--	340
Regional Totals	331	240	280	522	427	292	260	471	426
Central Region									
Juab	--	--	--	--	550	275	333	470	325
Salt Lake	--	--	--	--	0	150	133	470	100
Sanpete	--	--	--	--	228	259	171	300	240
Tooele	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	450	433	267	256	300
Wasatch	--	--	--	--	450	--	--	--	--
Regional Totals	226	171	311	375	333	236	214	331	242
Southern Region									
Beaver	--	--	--	--	--	--	97	--	200
Garfield	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	0	--	--	--	--
Millard	--	--	--	500	--	--	225	183	280
Piute	--	--	--	--	--	--	--	--	300
Sevier	560	200	225	362	243	425	400	533	221
Washington	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	200	--	--
Regional Totals	560	200	225	378	189	425	139	300	235
Northeastern Region									
Daggett	--	--	--	--	--	--	--	--	--
Duchesne	457	--	--	--	--	450	800	225	--
Uintah	--	--	--	--	--	0	700	250	375
Regional Totals	457	--	--	--	--	386	766	233	375
Southeastern Region									
Carbon	--	--	--	--	--	40	--	0	--
Emery	300	500	300	--	--	350	400	700	500
Grand	--	--	--	--	--	--	--	--	--
San Juan	--	--	257	--	--	--	--	--	--
Regional Totals	300	500	267	--	--	128	400	489	500
STATE TOTALS	306	212	285	468	335	268	219	372	308

Table 3. Trend of ruffed grouse mean brood size, 1962-71.

Region and County	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region										
Box Elder	--	--	--	--	--	4.00	--	--	--	--
Cache	7.33	3.62	--	4.40	6.59	6.38	2.00	4.09	4.78	5.55
Davis	--	3.00	--	--	5.25	6.00	4.00	--	--	--
Morgan	--	--	4.00	--	4.00	--	--	4.67	4.00	6.75
Rich	5.00	3.00	--	--	--	3.00	3.00	--	--	--
Summit	--	--	--	--	--	--	5.00	6.00	5.00	6.00
Weber	5.33	--	--	6.00	4.50	--	4.50	2.50	--	8.00
Regional Totals	6.00	3.31	4.00	4.66	6.01	5.82	4.00	4.30	4.79	6.09
Central Region										
Juab	--	--	--	--	--	6.60	5.33	4.00	4.67	4.33
Salt Lake	--	--	--	--	--	--	--	4.00	4.67	4.00
Sanpete	--	--	--	--	--	3.89	3.54	4.67	4.64	5.50
Tooele	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	4.60	4.33	3.80	7.00	3.75
Wasatch	--	--	--	--	--	4.50	--	--	--	--
Regional Totals	--	4.00	4.08	5.09	5.00	4.76	4.00	4.17	4.78	4.75
Southern Region										
Beaver	--	--	--	--	--	--	--	6.00	--	5.00
Garfield	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	5.00	--	--	2.25	--	4.67
Piute	--	--	--	--	--	--	--	--	--	3.00
Sevier	--	5.60	2.00	3.00	4.14	4.25	4.25	4.00	--	3.83
Washington	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	2.00	--	--
Regional Totals	--	5.60	2.00	3.00	4.25	4.25	4.25	3.30	--	4.08
Northeastern Region										
Daggett	--	--	--	--	--	--	--	--	--	--
Duchesne	4.00	5.33	--	--	--	--	4.50	8.00	3.00	--
Uintah	--	--	--	--	--	--	--	7.00	2.50	5.00
Regional Totals	4.00	5.33	--	--	--	--	4.50	7.67	2.80	5.00
Southeastern Region										
Carbon	--	--	--	--	--	--	2.00	--	--	--
Emery	5.50	3.00	6.67	6.00	--	--	3.50	3.00	7.00	5.00
Grand	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	4.50	--	--	--	--	--	--
Regional Totals	5.50	3.00	6.67	4.80	--	--	3.00	3.00	7.00	5.00
STATE TOTALS	5.58	4.10	4.24	4.32	5.56	5.33	4.05	4.24	4.66	5.16

Table 4. Trend of ruffed grouse observed per 100 hours, 1967-71.

Region and County	1967	1968	1969	1970	1971
Northern Region					
Box Elder	--	2	--	99	--
Cache	--	54	83	198	67
Davis	--	31	3	--	--
Morgan	--	--	58	88	128
Rich	--	62	--	33	--
Summit	--	40	63	56	108
Weber	--	92	44	--	73
Regional Totals	37	33	50	97	77
Central Region					
Juab	206	500	158	0	142
Salt Lake	--	111	20	28	16
Sanpete	87	316	158	43	167
Tooele	--	--	--	--	--
Utah	21	61	63	63	40
Wasatch	100	--	--	260	0
Regional Totals	58	395	78	57	85
Southern Region					
Beaver	--	--	314	0	250
Garfield	--	--	--	86	--
Iron	--	--	--	15	--
Kane	--	--	--	111	--
Millard	--	--	--	0	317
Piute	--	--	--	0	267
Sevier	--	--	--	--	28
Washington	--	--	--	174	--
Wayne	--	--	--	0	--
Regional Totals	78	--	314	162	35
Northeastern Region					
Daggett	--	--	--	0	0
Duchesne	--	157	58	0	0
Uintah	--	20	88	41	83
Regional Totals	--	119	65	41	83
Southeastern Region					
Carbon	--	61	--	32	0
Emery	--	16	30	12	46
Grand	--	--	--	--	--
San Juan	--	--	--	211	--
Regional Totals	--	17	30	40	46
STATE TOTALS	48	70	59	71	54

Table 5. Blue Grouse Summer Inventory Summary, 1971.

Region and County	Distinct Broods		Mean Brood	Mixed Yng. & Ad.		Adults w/o Yng.	Total Adults	Total Young	Young/100 Ad.	Grouse/100 hrs.
	No.	Ad. Yng.		Adults	Young					
Northern Region										
Box Elder	--	--	--	--	--	--	--	--	--	--
Cache	23	119	5.18	6	38	35	64	157	245	171
Davis	4	25	6.25	1	1	0	5	26	520	194
Morgan	3	16	5.33	0	0	0	3	16	533	76
Rich	--	--	--	--	--	--	--	--	--	--
Summit	1	6	6.00	0	0	0	1	6	600	18
Weber	6	39	6.50	0	0	1	7	39	557	153
Regional Totals	37	205	5.54	7	39	36	80	244	305	135
Central Region										
Juab	0	0	--	0	0	0	0	0	--	0
Salt Lake	2	4	2.00	0	0	4	6	4	67	20
Sanpete	4	17	4.25	0	0	0	4	17	425	34
Tooele	--	--	--	--	--	--	--	--	--	--
Utah	9	38	4.22	0	0	0	9	38	422	94
Wasatch	2	9	4.50	0	0	0	2	9	450	1100
Regional Totals	17	68	4.00	0	0	4	21	68	324	51
Southern Region										
Beaver	--	--	--	--	--	--	--	--	--	--
Garfield	1	6	6.00	0	0	0	1	6	600	45
Iron	1	8	8.00	0	0	2	3	8	267	42
Kane	1	6	6.00	0	0	2	3	6	200	51
Millard	3	14	4.67	0	0	2	5	14	280	317
Piute	--	--	--	--	--	--	--	--	--	--
Sevier	5	15	3.00	0	0	6	11	15	136	16
Washington	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--
Regional Totals	11	49	4.45	0	0	12	23	49	213	29
Northeastern Region										
Daggett	--	--	--	--	--	--	--	--	--	--
Duchesne	1	4	4.00	0	0	0	1	4	400	13
Uintah	2	5	2.50	0	0	1	3	5	167	35
Regional Totals	3	9	3.00	0	0	1	4	9	225	18
Southeastern Region										
Carbon	1	5	5.00	0	0	2	3	5	167	80
Emery	2	6	3.00	0	0	0	2	6	300	31
Grand	--	--	--	--	--	2	2	0	--	13
San Juan	8	42	5.25	2	12	4	14	54	386	178
Regional Totals	11	53	4.82	2	12	8	21	65	310	97
STATE TOTALS	79	384	4.86	9	51	61	149	435	292	71

Table 6. Trend of blue grouse young per 100 adults ratios, 1963-71.

Region and County	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region									
Box Elder	254	700	200	--	133	382	222	389	--
Cache	333	--	200	487	350	318	154	316	245
Davis	250	--	--	442	400	138	250	--	520
Morgan	--	425	--	400	--	--	500	600	533
Rich	--	--	500	--	333	--	--	300	--
Summit	--	--	200	--	450	--	400	433	600
Weber	528	--	600	567	500	500	325	--	557
Regional Totals	317	517	265	478	193	289	248	361	305
Central Region									
Juab	--	--	--	--	300	--	383	--	--
Salt Lake	--	--	--	--	0	--	175	900	67
Sanpete	--	--	--	--	267	467	--	283	425
Tooele	--	--	--	--	800	400	--	--	--
Utah	--	--	--	--	275	267	230	314	422
Wasatch	--	--	--	--	333	360	--	550	450
Regional Totals	347	344	567	612	326	337	231	389	324
Southern Region									
Beaver	--	--	--	--	--	238	--	--	--
Garfield	--	--	--	--	--	140	--	100	600
Iron	--	--	--	700	--	400	8	--	267
Kane	--	--	--	--	233	--	--	150	200
Millard	--	--	--	--	--	--	--	--	280
Piute	--	--	--	--	--	200	--	--	--
Sevier	76	200	40	69	67	--	--	140	136
Washington	--	--	--	0	366	--	38	170	--
Wayne	--	300	--	900	--	--	182	--	--
Regional Totals	76	240	40	150	160	224	75	135	213
Northeastern Region									
Daggett	--	--	--	--	--	150	350	--	--
Duchesne	--	600	317	--	200	257	433	--	400
Uintah	--	--	500	--	666	--	480	400	167
Regional Totals	--	600	343	--	555	186	414	400	225
Southeastern Region									
Carbon	--	--	--	--	--	138	--	0	167
Emery	300	--	575	--	300	250	--	450	300
Grand	--	--	--	--	--	--	--	--	--
San Juan	--	--	0	--	200	400	456	153	386
Regional Totals	300	--	383	--	250	288	456	139	310
STATE TOTALS	258	381	312	354	246	268	235	253	292

Table 7. Trend of blue grouse mean brood size, 1962-71.

Region and County	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region										
Box Elder	6.06	5.09	7.00	6.00	--	3.67	4.43	5.54	3.83	--
Cache	--	4.28	--	2.50	6.22	4.67	4.38	3.35	4.28	5.18
Davis	--	3.33	--	--	4.42	4.00	4.50	7.00	--	6.25
Morgan	--	--	4.25	--	6.00	--	--	5.00	6.00	5.33
Rich	--	--	--	5.00	--	3.33	--	--	3.00	--
Summit	5.00	--	--	4.00	--	4.50	--	8.00	4.33	6.00
Weber	3.00	5.28	--	6.00	5.67	4.00	5.00	4.75	--	6.50
Regional Totals	5.64	4.75	5.17	4.09	5.73	4.10	4.50	4.51	4.21	5.54
Central Region										
Juab	--	--	--	--	--	3.00	--	4.60	--	--
Salt Lake	--	--	--	--	--	--	--	4.40	9.00	2.00
Sanpete	--	--	--	--	--	4.00	4.67	--	2.83	4.25
Tooele	--	--	--	--	--	8.00	4.00	--	--	--
Utah	--	--	--	--	--	5.00	3.40	4.67	5.50	4.22
Wasatch	--	--	--	--	--	10.00	3.60	--	5.50	4.50
Regional Totals	--	3.88	4.43	5.67	6.13	4.78	3.80	4.54	4.67	4.00
Southern Region										
Beaver	--	--	--	--	--	--	3.75	--	--	--
Garfield	--	--	--	--	--	--	2.00	--	3.00	6.00
Iron	--	--	--	7.00	--	--	4.00	--	--	8.00
Kane	--	--	--	--	--	--	--	--	3.00	6.00
Millard	--	--	--	--	--	--	--	--	--	4.67
Piute	--	--	--	--	--	--	2.00	--	--	--
Sevier	--	3.20	3.00	2.00	2.57	2.00	--	1.50	--	3.00
Washington	--	--	--	--	--	6.00	--	4.00	3.40	--
Wayne	7.00	--	3.00	--	9.00	--	--	--	--	--
Regional Totals	--	3.20	3.00	2.00	4.36	3.00	3.22	5.50	3.25	4.45
Northeastern Region										
Daggett	--	--	--	--	--	--	--	3.50	--	--
Duchesne	5.00	--	6.00	4.75	--	2.00	9.00	4.33	--	4.00
Uintah	--	--	--	5.00	--	6.67	--	6.00	5.50	2.50
Regional Totals	5.00	--	6.00	4.80	--	5.50	9.00	4.46	5.50	3.00
Southeastern Region										
Carbon	--	--	--	--	--	--	4.00	--	--	5.00
Emery	7.00	3.00	--	5.75	--	6.00	5.00	--	4.50	3.00
Grand	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	4.00	4.33	5.20	4.00	5.25
Regional Totals	7.00	3.00	--	5.75	--	5.00	4.33	5.20	4.20	4.82
STATE TOTALS	5.64	4.36	4.44	4.74	5.49	4.42	4.24	4.46	4.28	4.86

Table 8. Trend of blue grouse observed per 100 hours, 1967-71.

Region and County	1967	1968	1969	1970	1971
Northern Region					
Box Elder	--	2	412	99	--
Cache	--	54	146	198	171
Davis	--	31	170	--	194
Morgan	--	--	50	88	76
Rich	--	62	--	33	--
Summit	--	40	32	56	18
Weber	--	92	364	--	153
Regional Totals	63	33	127	97	135
Central Region					
Juab	138	500	175	--	0
Salt Lake	2	111	64	28	20
Sanpete	68	316	--	43	34
Tooele	675	--	--	--	--
Utah	32	61	38	63	94
Wasatch	100	--	--	260	1100
Regional Totals	64	395	52	57	51
Southern Region					
Beaver	--	--	--	--	--
Garfield	--	--	--	86	45
Iron	--	--	140	15	42
Kane	--	--	--	111	51
Millard	--	--	--	--	317
Piute	--	--	--	--	--
Sevier	--	--	38	--	16
Washington	--	--	86	174	--
Wayne	--	--	--	--	--
Regional Totals	116	--	56	162	29
Northeastern Region					
Daggett	--	--	193	--	0
Duchesne	10	157	33	--	13
Uintah	255	20	156	41	35
Regional Totals	51	119	150	41	18
Southeastern Region					
Carbon	--	61	9	32	80
Emery	29	16	--	12	31
Grand	--	--	--	--	13
San Juan	75	--	196	211	178
Regional Totals	33	17	98	40	97
STATE TOTALS	67	70	84	71	71

Table 9. Summary of effort expended on forest grouse brood counts, 1971.

Region and County	Vehicle Miles Traveled	Hours Effort Expended			Total
		Vehicle	Horseback	Walking	
Northern Region					
Box Elder	--	--	--	--	--
Cache	569	55	62	12	129
Davis	155	14	0	2	16
Morgan	72	12	13	0	25
Rich	--	--	--	--	--
Summit	325	23	10	7	40
Weber	80	14	10	6	30
Regional Totals	1201	118	95	27	240
Central Region					
Juab	91	9.0	0	3.0	12.0
Salt Lake	222	13.0	29.0	7.0	49.0
Sanpete	286	25.0	27.0	9.0	61.0
Tooele	--	--	--	--	--
Utah	146	34.0	8.0	8.0	50.0
Wasatch	40	1.0	0	0	1.0
Regional Totals	785	82	64	27	173
Southern Region					
Beaver	30	6	--	--	6
Garfield	170	9	--	6.5	15.5
Iron	297	13.5	9.5	3	26
Kane	100	12.5	4	1	17.5
Millard	30	6	--	--	6
Piute	38	3	--	--	3
Sevier	40	10	150	--	160
Washington	20	1	6	1	8
Wayne	71	7	--	--	7
Regional Totals	796	68	170	11.5	249
Northeastern Region					
Daggett	125	12	--	3	15
Duchesne	385	30	--	9	39
Uintah	284	15	--	8	23
Regional Totals	794	57	--	20	77
Southeastern Region					
Carbon	78	7.25	0	2.75	10
Emery	194	16	--	10	26
Grand	84	10.5	--	4.75	15.25
San Juan	84	6	29.5	2.5	38
Regional Totals	440	40	29.5	20.0	89
STATE TOTALS	4016	365	358	105	828

Table 10. Summary of forest grouse hunter success and distribution of harvest and hunting pressure by region and county, 1971.

Region and County	Hunters reporting	Days hunted	Birds Bagged			Total	Birds/Day	Birds/Hunter*	% of Pressure	% of Harvest
			Ruffed	Blue	Uniden.					
Northern										
Box Elder	23	40	11	29	3	43	1.07	3.05	2.94	2.88
Cache	133	300	195	196	18	409	1.36	3.36	22.04	27.41
Davis	26	62	14	12	3	29	0.47	2.10	4.56	1.94
Morgan	21	35	31	14	4	49	1.40	4.50	2.27	3.28
Rich	24	51	30	35	4	69	1.35	0.00	3.75	4.62
Summit	36	61	27	24	3	54	0.89	1.00	4.48	3.62
Weber	73	141	77	77	3	157	1.11	2.59	10.36	10.52
Regional Totals	336	690	385	387	38	810	1.17	2.72	50.70	54.29
Central										
Juab	16	28	17	10	7	34	1.21	4.00	2.06	2.28
Salt Lake	24	46	27	22	9	58	1.26	2.10	3.38	3.89
Sanpete	29	60	26	20	9	55	0.92	2.80	4.41	3.69
Tooele	14	21	7	4	1	12	0.57	1.00	1.54	0.80
Utah	83	187	111	64	15	190	1.02	2.33	13.74	12.73
Wasatch	34	66	42	38	10	90	1.36	2.80	4.85	6.03
Regional Totals	200	408	230	158	51	439	1.08	2.23	29.98	29.42
Southern										
Beaver	4	10	4	4	0	8	0.80	1.33	0.73	0.54
Garfield	3	6	0	0	0	0	0.00	1.50	0.44	0.00
Iron	4	9	2	7	0	9	1.00	3.00	0.66	0.60
Kane	5	8	2	3	0	5	0.63	0.00	0.59	0.34
Millard	6	8	6	4	2	12	1.50	2.33	0.59	0.80
Piute	5	12	6	5	5	16	1.33	4.50	0.88	1.07
Sevier	23	55	16	30	6	52	0.95	1.12	4.04	3.49
Washington	1	1	0	1	0	1	1.00	1.00	0.07	0.07
Wayne	2	3	0	0	0	0	0.00	5.67	0.22	0.00
Regional Totals	53	112	36	54	13	103	0.92	2.16	8.23	6.90
Northeastern										
Daggett	6	12	4	2	0	6	0.50	0.00	0.88	0.40
Duchesne	15	22	21	6	9	36	1.64	2.75	1.62	2.41
Uintah	13	21	4	7	0	11	0.52	0.79	1.54	0.74
Regional Totals	34	55	29	15	9	53	0.96	1.22	4.04	3.55
Southeastern										
Carbon	17	34	18	4	0	22	0.65	0.79	2.50	1.47
Emery	18	11	4	1	0	5	0.45	2.00	0.81	0.34
Grand	1	1	0	1	0	1	1.00	1.00	0.07	0.07
San Juan	0	0	0	0	0	0	0.00	0.00	0.00	0.00
Regional Totals	26	46	22	6	0	28	0.61	0.88	3.38	1.88
Unknown counties	23	46	35	15	1	51	1.11	1.67	3.38	3.42
Mixed counties	1	4	0	8	0	8	2.00	0.00	0.29	0.54
STATE TOTALS	673	1361	737	643	112	1492	1.10	2.39	100.00	100.00

*Based on county of residence

Table 11. Summary of forest grouse bagged per hunter-day by region and county, 1963-71.

Region and county	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern									
Box Elder	1.16	1.33	0.67	1.08	0.83	0.72	0.88	1.17	1.07
Cache	1.51	1.32	0.98	1.12	1.24	1.17	1.11	1.33	1.36
Davis	0.90	0.00	0.71	0.38	0.57	0.40	0.52	0.82	0.47
Morgan	1.20	1.00	1.33	1.77	0.57	1.59	0.50	1.55	1.40
Rich	1.36	2.11	0.93	--	1.09	0.92	0.97	1.42	1.35
Summit	1.79	1.26	0.87	1.04	0.58	1.32	0.60	1.10	0.89
Weber	1.86	1.59	0.32	1.04	0.62	1.52	0.75	1.22	1.11
Regional Totals	1.50	1.33	0.80	1.08	0.94	1.19	0.87	1.28	1.17
Central									
Juab	2.00	0.50	1.14	1.67	0.73	1.36	1.00	1.38	1.21
Salt Lake	0.78	1.39	0.55	0.69	0.74	1.21	0.96	0.80	1.26
Sanpete	1.62	1.12	1.06	0.87	1.15	1.53	0.77	1.56	0.92
Tooele	0.93	1.71	0.95	0.25	0.15	1.00	0.68	0.55	0.57
Utah	0.92	1.75	1.00	1.03	0.87	1.21	0.76	1.13	1.02
Wasatch	1.27	1.37	1.09	1.07	1.21	1.37	0.68	1.29	1.36
Regional Totals	1.05	1.52	0.88	0.93	0.87	1.31	0.77	1.24	1.08
Southern									
Beaver	Closed	--	0.00	0.00	2.00	0.67	0.50	1.00	0.80
Garfield	"	1.00	1.00	1.00	0.33	2.00	0.25	0.00	0.00
Iron	"	2.00	0.00	0.33	0.60	1.03	1.15	1.19	1.00
Kane	"	--	--	--	--	0.25	0.80	0.00	0.63
Millard	"	0.00	0.00	0.00	1.60	0.00	4.00	1.83	1.50
Piute	"	2.00	3.00	1.00	--	1.00	1.00	0.43	1.33
Sevier	"	1.20	0.25	1.63	1.06	1.21	1.00	1.11	0.95
Washington	"	1.50	--	--	1.00	1.10	0.00	0.00	1.00
Wayne	"	--	0.00	--	4.00	0.33	2.00	0.00	0.00
Regional Totals	Closed	1.32	0.35	1.00	1.09	1.06	0.99	1.07	0.92
Northeastern									
Daggett	--	--	--	0.00	1.69	1.20	2.22	0.14	0.50
Duchesne	1.67	1.00	1.60	1.36	0.78	1.33	1.08	0.84	1.64
Uintah	0.75	0.67	1.00	1.00	0.56	1.04	1.26	0.88	0.52
Regional Totals	1.14	0.83	1.27	1.14	0.98	1.19	1.37	0.73	0.96
Southeastern									
Carbon	2.00	1.75	0.50	1.00	1.00	0.88	1.04	1.18	0.65
Emery	2.00	--	0.00	0.33	2.43	2.00	0.89	1.12	0.45
Grand	--	--	3.00	--	--	1.17	0.00	0.50	1.00
San Juan	--	--	0.00	--	1.00	--	0.43	0.00	--
Regional Totals	2.00	1.75	0.60	0.87	1.43	1.12	0.85	1.12	0.61
Unknown counties	0.32	0.23	0.83	0.35	0.82	1.30	--	0.68	1.11
Mixed counties	1.29	1.76	1.00	--	1.51	--	--	0.00	2.00
STATE TOTALS	1.11	1.20	0.83	0.99	0.99	1.22	0.87	1.20	1.10

Table 13. Distribution of forest grouse hunting pressure by region and county, 1963-71.

Region and county	1963	1964	1965	1966	1967*	1968	1969	1970	1971
Northern									
Box Elder	3.91	3.06	3.86	4.53	3.35	2.82	3.44	3.09	2.94
Cache	18.86	15.72	18.33	21.15	20.09	21.28	22.33	25.39	22.04
Davis	1.42	2.18	5.14	3.02	2.42	2.35	2.43	2.16	4.56
Morgan	1.42	0.44	0.61	1.51	0.81	3.21	3.02	2.24	2.57
Rich	4.98	3.49	3.22	--	2.66	2.90	3.27	2.55	3.75
Summit	3.56	6.11	2.89	6.95	8.43	7.59	6.72	3.24	4.48
Weber	7.12	4.80	10.29	9.37	5.43	6.57	13.85	10.03	10.36
Regional Totals	41.27	35.80	44.34	46.53	43.19	46.71	55.08	48.69	50.70
Central									
Juab	0.36	0.87	1.29	0.91	1.27	1.72	1.26	3.01	2.06
Salt Lake	2.14	6.99	12.22	8.46	4.04	4.07	2.27	1.93	3.38
Sanpete	3.56	3.06	3.54	8.16	6.00	6.81	3.61	6.79	4.41
Tooele	2.49	1.75	3.22	1.81	3.81	0.78	1.60	0.85	1.54
Utah	9.96	12.23	13.18	17.82	10.51	13.38	14.60	12.81	13.74
Wasatch	3.56	3.93	4.50	2.11	4.97	5.63	5.04	4.55	4.85
Regional Totals	22.07	28.83	37.95	39.27	30.60	32.39	28.38	29.94	29.98
Southern									
Beaver	Closed	--	0.64	0.30	0.23	0.47	0.17	0.31	0.73
Garfield	"	0.44	0.32	0.30	0.35	0.39	0.34	0.23	0.44
Iron	"	0.44	0.32	1.21	1.73	2.32	2.18	1.23	0.66
Kane	"	--	--	--	--	0.31	0.84	0.15	0.59
Millard	"	0.44	0.64	0.30	0.58	0.08	0.08	0.93	0.59
Piute	"	0.44	0.32	0.30	--	0.23	0.92	0.54	0.88
Sevier	"	3.06	0.96	2.42	1.85	2.66	1.68	4.09	4.04
Washington	"	0.44	--	--	0.12	0.78	0.42	0.00	0.07
Wayne	"	--	0.32	--	0.23	0.23	0.25	0.23	0.22
Regional Totals	0.00	5.26	3.52	4.83	5.08	7.51	6.88	7.72	8.23
Northeastern									
Daggett	--	--	--	0.30	1.85	0.78	0.76	1.08	0.88
Duchesne	0.71	0.87	1.61	2.72	2.08	2.11	1.09	2.47	1.62
Uintah	1.07	1.31	0.96	0.91	2.08	2.03	3.19	2.47	1.54
Regional Totals	1.78	2.18	2.57	3.93	6.00	4.93	5.04	6.02	4.04
Southeastern									
Carbon	0.36	1.75	1.61	2.42	1.73	3.21	2.27	5.25	2.50
Emery	0.36	--	0.32	0.60	0.81	0.86	1.51	0.62	0.81
Grand	--	--	0.32	--	--	0.47	0.25	0.15	0.07
San Juan	--	--	0.32	--	0.12	--	0.59	0.15	--
Regional Totals	0.72	1.75	2.57	3.02	2.66	4.54	4.62	6.17	3.38
Unknown counties	28.11	22.71	7.07	2.42	3.93	3.91	--	1.47	3.38
Mixed counties	6.05	3.49	0.96	--	8.55	--	--	0.00	0.29
STATE TOTALS	100.00								

*Distribution of hunting pressure for 1967 and later based on hunter-days rather than number of hunters reporting.

Table 14. State-wide summary of forest grouse harvest statistics, 1961-71.

Year	Total hunters		Total harvest			Hunter-days afield	Grouse per hunter		Grouse per season			
	Ruffed (%)	Blue (%)	Blue (%)	Unknown (%)	Total		Ruffed	Blue	Ruffed	Blue	Total	
1961*	256	128 (36.3)	220 (62.3)	5 (1.4)	353	--	--	--	0.50	0.86	1.38	
1962**	2386	1885 (56.3)	1464 (43.7)	0 (0)	3349	4276	1.19	0.76	--	--	--	
1963	7425	5470 (40.2)	7372 (54.2)	766 (5.6)	13608	12313	0.44	0.66	0.74	0.99	1.83	
1964	6487	5354 (42.2)	6685 (57.7)	652 (5.1)	12691	10566	0.51	0.63	0.82	1.03	1.96	
1965	6005	3225 (37.2)	4924 (56.8)	520 (6.0)	8669	10504	0.31	0.47	0.54	0.82	1.44	
1966	6683	6966 (56.6)	4659 (37.8)	696 (5.7)	12321	12387	0.56	0.38	1.04	0.68	1.84	
1967	9420	8476 (48.4)	6773 (38.6)	2277 (13.0)	17527	17773	0.48	0.38	0.87	0.69	1.86	
1968	13061	17048 (52.6)	12604 (38.9)	2762 (8.5)	32414	26537	0.64	0.47	1.30	0.96	2.48	
1969	12523	9490 (44.1)	10419 (48.5)	1589 (7.4)	21498	24572	0.38	0.42	0.76	0.83	1.72	
1970	12775	15590 (48.9)	13515 (42.4)	2793 (8.7)	31898	26619	0.59	0.51	1.22	1.06	2.50	
1971	13363	15759 (49.4)	13749 (43.1)	2393 (7.5)	31901	29100	0.54	0.47	1.18	1.03	2.39	
TOTALS												
(1963-71)	100265	87378 (47.9)	80700 (44.2)	14448 (7.9)	182527	170371	0.51	0.47	1.07	0.87	0.80	1.82
AVERAGES												
(1963-70)	10863	8952 (47.5)	8369 (44.4)	1507 (8.0)	18828	17659	0.51	0.47	1.07	0.82	0.77	1.73

*Estimated

**Totals and indexes based on indiscreet data.

Table 15. Forest Grouse Field Bag Check Summary, 1971

Region and County	ALL HUNTS				COMPLETE HUNTS				
	Total Parties	Total Hunters	Total Hours	Total Birds/100 hrs.	Total Hunts	Total Hunters	Total Hours	Total Birds/100 hrs.	Birds/Hunter
Northern Region									
Box Elder	--	--	--	--	--	--	--	--	--
Cache	222	571	2153	449	218	553	2073	444	21 0.80
Davis	--	--	--	--	--	--	--	--	--
Morgan	5	7	11.5	11	4	5	7.5	8	107 1.60
Rich	46	127	510	125	37	101	423	110	26 1.09
Summit	7	17	55.5	8	4	11	41	5	12 .45
Weber	75	161	661	105	73	156	644	101	16 0.65
Regional Totals	355	883	3391	698	336	826	3188	668	21 0.81
Central Region									
Juab	10	23	39	9	2	3	5	5	100 1.67
Salt Lake	3	6	10.5	0	3	6	10.5	0	0 0.00
Sanpete	11	42	126.5	39	4	17	62	15	24 0.88
Tooele	--	--	--	--	--	--	--	--	--
Utah	25	57	98.5	26	17	39	74	15	20 0.38
Wasatch	4	8	16	8	3	6	12	8	67 1.33
Regional Totals	53	136	290.5	82	29	71	163.5	43	26 0.61
Southern Region									
Beaver	5	13	45	2	1	3	15	1	7 0.33
Garfield	8	19	26	1	8	19	26	1	4 0.05
Iron	4	10	22	7	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--
Sevier	4	7	18	9	4	7	18	9	50 1.28
Washington	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--
Regional Totals	21	49	111	19	13	29	59	11	19 0.38
Northeastern Region									
Daggett	4	6	10	8	2	3	4	4	100 1.33
Duchesne	1	2	4	2	1	2	4	4	100 2.00
Uintah	6	19	66	29	3	11	58	26	45 2.36
Regional Totals	11	27	80	39	6	16	66	34	52 2.12
Southeastern Region									
Carbon	4	6	26	9	3	4	24	7	29 1.75
Emery	4	10	46	6	3	8	38	5	13 0.62
Grand	5	13	22	9	1	1	1	1	100 1.00
San Juan	--	--	--	--	--	--	--	--	--
Regional Totals	13	29	94	24	7	13	63	13	20 1.00
STATE TOTALS	453	1124	3966	862	391	955	3540	769	22 0.80

Table 16. Forest grouse hunter success trend determined by field bag checks, 1966-71.

Region and County	1966		1967		1968		1969		1970		1971	
	Birds/ 100 hrs. Hunter											
Northern Region												
Box Elder	--	--	7	0.17	--	--	33	1.00	--	--	--	--
Cache	21	0.91	14	0.62	21	0.60	17	0.70	18	0.86	21	0.80
Davis	6	0.17	4	0.16	--	--	1	0.05	--	--	--	--
Morgan	--	--	--	--	133	2.00	--	--	100	1.50	96	1.60
Rich	51	2.00	14	0.42	26	0.76	23	1.00	32	1.14	24	1.09
Summit	66	2.00	25	1.00	44	1.06	--	--	57	1.33	14	0.45
Weber	45	1.00	11	0.46	23	0.66	4	0.19	12	0.58	16	0.65
Regional Totals	25	0.93	14	0.54	23	0.66	13	0.55	15	0.75	21	0.81
Central Region												
Juab	71	1.12	23	0.55	57	1.54	34	0.94	20	0.57	23	1.67
Salt Lake	17	0.33	0	0.00	6	0.22	14	1.50	12	0.88	0	0.00
Sanpete	55	0.80	13	1.00	29	1.11	10	0.10	38	1.29	31	0.88
Tooele	--	--	--	--	--	--	--	--	17	0.67	--	--
Utah	70	1.43	--	--	29	1.00	19	0.44	16	0.33	26	0.38
Wasatch	--	--	64	2.10	13	0.78	83	1.75	--	--	50	1.33
Regional Totals	58	0.83	23	1.18	28	1.10	22	0.54	24	1.03	28	0.61
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	4	0.33
Garfield	--	--	--	--	--	--	--	--	6	0.21	4	0.05
Iron	--	--	--	--	--	--	--	--	25	0.43	32	0.70
Kane	--	--	--	--	26	1.17	--	--	5	0.14	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	125	1.25	--	--	--	--	50	1.28
Washington	--	--	--	--	--	--	--	--	15	0.67	--	--
Wayne	--	--	--	--	--	--	--	--	40	1.33	--	--
Regional Totals	--	--	--	--	39	1.25	--	--	12	0.32	17	0.38
Northeastern Region												
Daggett	--	--	--	--	--	--	30	2.00	0	0.00	80	1.33
Duchesne	--	--	--	--	18	0.56	20	0.33	38	1.17	50	2.00
Uintah	--	--	--	--	33	1.23	59	0.40	30	2.33	44	2.36
Regional Totals	--	--	--	--	28	1.23	40	0.55	28	1.87	49	2.12
Southeastern Region												
Carbon	50	1.33	--	--	47	1.00	22	0.83	--	--	35	1.75
Emery	39	1.75	77	1.00	52	1.50	--	--	--	--	13	0.62
Grand	--	--	--	--	--	--	--	--	--	--	41	1.00
San Juan	--	--	--	--	--	--	--	--	--	--	--	9
Regional Totals	42	1.57	77	1.00	49	1.16	22	0.83	--	--	26	1.00
STATE TOTALS	35	0.94	16	0.61	26	0.78	14	0.55	16	0.76	22	0.80

QUAIL

SUMMARY

The State-wide quail population remained below average in 1971. Increased production suggested a possible increase in the fall population but such an increase was not reflected in hunter success which declined from 1970.

The long-term trend of the quail population on a State-wide basis is relatively stable; however, in recent years hunter success has tended to decline slightly suggesting a reduced population. Considering widespread habitat alteration due to urbanization, road construction, stream channelization and clean farming such a trend can be expected.

The Gambel's quail population in Washington County showed an increase over 1970 but was below average.



Brood Counts

Results of the annual random brood survey for 1971 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 1971 compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total quail observed	1,121	-28	-24
Young per 100 adults	255	+28	+ 9
Mean brood size	6.58	- 6	- 8
Quail observed per 100 hours	728	-22	-14
Total hours effort	154	- 7	-16

Quail production (young per 100 adults) during 1971 improved over both 1970 and the average; however, indicated density was below 1970 and the average. The State-wide population was low in 1970. Considering the indicated increased production a slightly higher fall population in 1971 was expected. The Gambel's quail population in Washington County showed improvement over 1970, but was still at a low level.

Harvest

Results of the annual hunter questionnaire 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 State-wide harvest statistics in Table 9.

The 1971 season compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Quail hunters	8,039	+31	+ 2
Quail harvested	21,082	+12	-13
Hunter-days afield	21,595	+31	+13
Quail per hunter	2.62	-15	-14
Quail per hunter-day	0.98	-15	-23

Due to an increase in the number of quail hunters and hunter-days, total quail harvest increased over 1970. Hunter success, both per hunter and per day, declined from both 1970 and the average. Total harvest was also below average.

Much of the quail hunting in Utah is done incidental to hunting pheasants. From 1959 through 1971 marked changes in the number of quail hunters related directly to changes in the number of pheasant hunters. Thus, the increased number of quail hunters and total harvest in 1971 was not in response to increased quail, but rather increased pheasant hunters.

Hunter success for Gambel's quail in Washington County improved over 1970, but was well below average.

The long-term trend of quail harvest statistics is relatively stable, although hunter success has shown a decline in recent years (Figure 1).

Gambel's Quail Studies

Annual call-count surveys, long-period waterhole counts and annual vegetative surveys have been conducted on the west slope of the Beaver Dam Mountains since 1962. Trends of those surveys are shown in Tables 10-12.

Call-counts indicated increased quail abundance compared to an extreme low in 1970. Though total quail observed during waterhole counts in 1971 was less than in 1970, indicated production (young per 100 adults) was the highest yet recorded, suggesting a higher population level. Hunter success for Washington County also reflected an increase.

Vegetative surveys designed to measure the relative abundance of annual forbs, using filaree (Erodium cicutarium) as the indicator species, indicated very poor production of annuals in 1971.

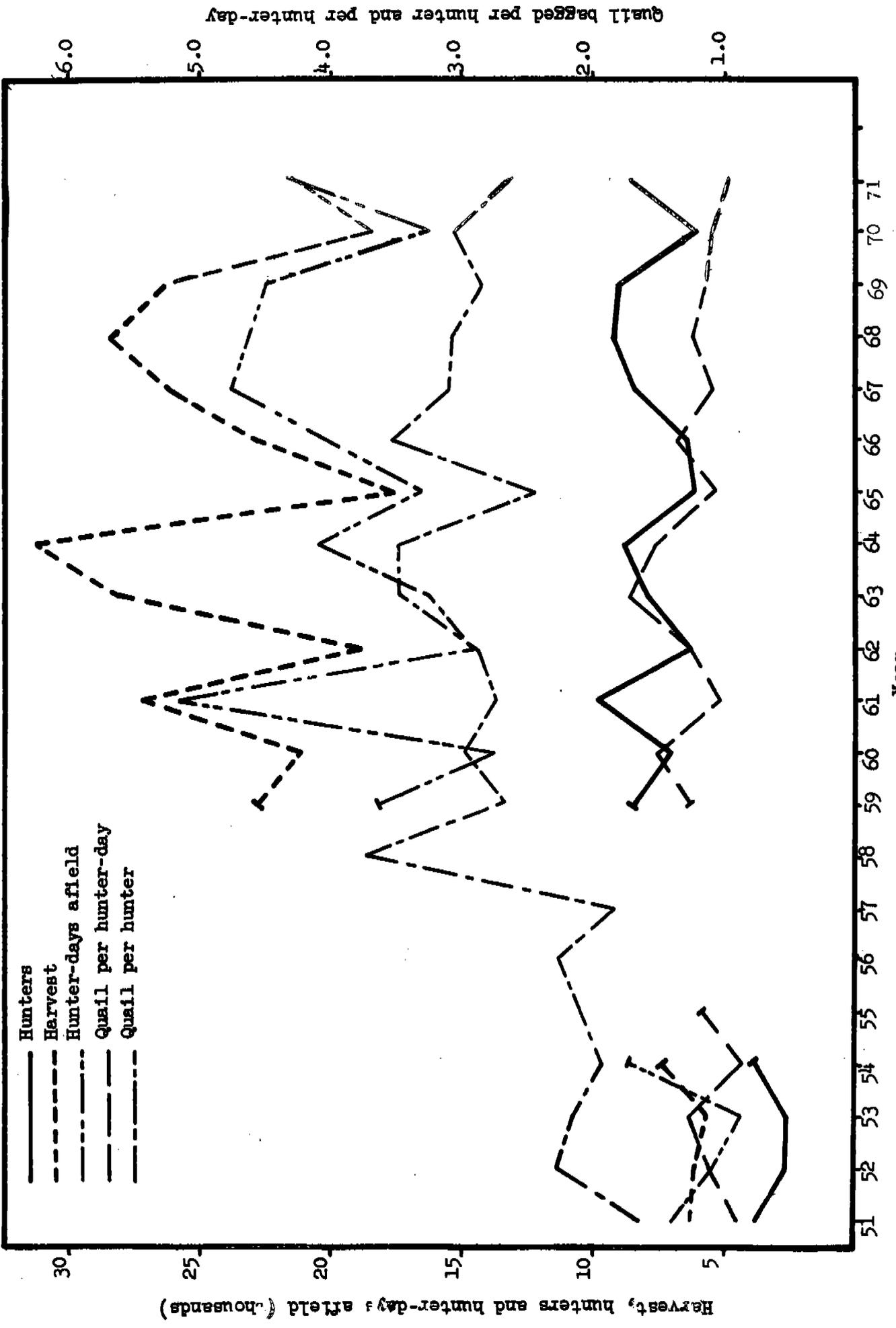


Figure 1. State-wide trend of quail harvest statistics.

Table 1. Quail Summer Inventory Summary, 1971.

Region and County	Distinct Broods		Mixed Yng. Mean & Adults		Adults w/o Yng.	Total Yng.	Total Adults	Total Yng./100 Ad.	Vehicle Miles		Hours Effort		Birds/100 hrs.			
	No. Ad.	Yng.	Brood Ad.	Yng.					Yng.	Ad.	Yng.	Ad.		Yng.	Ad.	Yng.
Northern Region																
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--	--			
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--			
Davis	4	8	44	11.00	0	0	6	14	44	314	5	0	2	7	829	
Morgan	1	2	12	12.00	0	0	2	4	12	300	0	0	4	4	400	
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Weber	3	7	28	9.33	0	0	4	11	28	255	6	0	7	13	300	
Regional Totals	8	17	84	10.50	0	0	12	29	84	290	11	0	13	24	471	
Central Region																
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Salt Lake	3	6	21	7.00	25	75	9	40	96	240	173	12.0	0	0	12.0	1133
Sanpete	10	10	57	5.70	7	31	3	20	88	440	76	11.0	0	0	11.0	982
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Utah	7	13	52	7.43	17	60	21	51	112	220	140	16.5	0	0	16.5	988
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Regional Totals	20	29	130	6.50	49	166	33	111	296	267	389	39.5	0	0	39.5	1030
Southern Region																
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Kane	1	2	8	8.00	0	0	3	5	8	160	94	1.75	0.5	2	2.25	578
Millard	5	10	40	8.00	8	2	0	18	42	233	0	0	2	2	3000	
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Washington	8	13	53	6.62	15	43	2	30	96	320	240	20	1	21	600	
Wayne	0	0	0	--	0	0	1	1	0	0	10	0.50	0	2.50	3	33
Regional Totals	14	25	101	7.21	23	45	6	54	146	270	344	22.25	0	6	28.25	708
Northeastern Region																
Daggett	20	20	109	5.45	16	43	21	57	152	267	66	6	5	11	1900	
Duchesne	--	--	--	--	--	--	--	--	--	--	231	22	1	23	0	
Uintah	9	9	48	5.33	17	67	27	53	115	217	290	15	--	15	1120	
Regional Totals	29	29	157	5.41	33	110	48	110	267	243	587	43	6	49	769	
Southeastern Region																
Carbon	0	0	0	--	4	10	4	8	10	125	87	5	0	1	6	300
Emery	1	2	2	2.00	0	0	2	4	2	50	53	7	0.25	7.25	83	
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Regional Totals	1	2	2	2.00	4	10	6	12	12	100	140	12	0	1.25	13.25	181
STATE TOTALS	72	102	474	6.58	109	331	105	316	805	255	1652	128	0	26	154	728

Table 2. Trend of quail young per 100 adults ratios 1964-71*.

Region and County	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region								
Box Elder	500	--	500	800	--	--	--	--
Cache	0	--	--	--	--	--	--	--
Davis	--	0	175	5	1500	400	--	314
Morgan	500	50	256	141	153	94	329	300
Rich	--	--	--	--	--	--	--	--
Summit	--	383	--	267	--	450	--	--
Weber	--	--	264	--	600	125	0	255
Regional Totals	250	83	275	83	273	183	230	290
Central Region								
Juab	--	--	--	--	--	--	--	--
Salt Lake	629	150	--	241	230	360	173	240
Sanpete	467	350	464	262	625	327	476	440
Tooele	--	--	--	--	--	--	--	--
Utah	359	143	394	282	319	300	228	220
Wasatch	--	--	--	--	--	--	--	--
Regional Totals	392	158	414	264	306	337	198	267
Southern Region								
Beaver	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--
Iron	--	0	--	--	--	--	--	--
*Kane	--	314	--	625	--	--	1075	160
Millard	--	--	150	--	--	122	--	233
Piute	--	--	--	333	--	--	--	--
Sevier	--	--	--	--	--	--	--	--
*Washington	146	114	290	215	323	138	48	320
*Wayne	--	0	0	--	400	--	--	0
Regional Totals	146	115	270	223	324	260	98	270
Northeastern Region								
Daggett	--	--	--	--	--	--	524	267
Duchesne	140	156	100	171	183	54	0	--
Uintah	147	153	378	133	200	138	218	217
Regional Totals	146	154	288	141	194	123	301	243
Southeastern Region								
Carbon	--	--	233	220	200	114	283	125
Emery	--	--	167	--	0	--	--	50
Grand	--	--	--	--	--	--	--	--
San Juan	--	--	--	1200	--	--	--	--
Regional Totals	--	--	211	383	150	114	283	100
STATE TOTALS	261	148	303	202	302	229	200	255

*Washington, Kane and Wayne counties, Gabel's quail. All others California.

Table 3. Trend of quail mean brood size from 1959-71*.

Region and County	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region													
Box Elder	--	2.83	7.75	8.00	--	5.00	--	10.00	8.0	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	9.33	11.67	7.50	5.00	--	--	--	--	15.0	8.20	--	11.00
Morgan	--	8.50	6.80	3.57	--	5.00	3.50	9.00	6.00	--	4.80	7.67	12.00
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	6.50	6.00	11.50	--	6.67	--	8.00	--	7.00	--	--
Weber	6.13	5.14	--	7.67	--	--	--	13.00	--	12.00	4.00	--	9.33
Regional Totals	6.13	7.58	7.41	4.91	7.17	5.00	5.40	10.25	6.57	14.25	5.94	7.67	10.50
Central Region													
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	9.29	5.50	7.67	--	7.00	8.80	--	--	9.00	6.67	11.42	8.61	7.00
Sanpete	--	--	7.25	--	5.80	7.00	7.00	9.29	6.30	7.50	6.00	5.67	5.70
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--
Utah	8.13	6.33	6.43	--	7.20	8.09	8.24	8.38	6.80	8.24	8.75	7.85	7.43
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	8.70	6.04	6.88	--	6.90	8.14	8.00	8.65	6.86	7.91	9.67	7.98	6.50
Southern Region													
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--
*Kane	--	--	--	--	--	--	--	--	--	--	--	--	8.00
Millard	11.00	--	10.00	--	--	--	--	12.00	--	--	4.00	--	8.00
Piute	--	7.00	--	--	8.50	--	--	--	4.00	--	--	--	--
Sevier	--	--	--	--	6.70	--	--	--	--	--	--	--	--
*Washington	8.55	8.96	7.12	4.70	7.60	--	8.30	6.92	5.30	7.92	2.90	4.00	6.62
*Wayne	10.75	8.00	6.83	--	--	--	--	--	--	--	--	--	--
Regional Totals	8.86	8.71	7.24	4.70	7.58	--	8.30	7.11	5.34	7.92	3.50	4.00	7.21
Northeastern Region													
Daggett	--	--	--	--	--	--	--	--	--	--	--	5.29	5.45
Duchesne	4.75	5.14	6.00	7.50	5.00	7.00	6.25	2.00	--	3.67	3.00	--	--
Uintah	9.00	--	5.00	--	6.20	7.09	9.67	9.80	6.25	4.80	6.00	5.43	5.33
Regional Totals	6.17	5.14	5.25	7.50	8.11	7.08	7.71	8.50	6.25	4.38	5.50	5.32	5.41
Southeastern Region													
Carbon	7.38	--	9.67	10.00	--	7.50	--	7.0	3.67	3.00	4.67	--	--
Emery	--	--	9.00	--	--	--	--	--	--	--	--	--	2.00
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	7.38	--	9.50	10.00	--	7.50	--	--	--	--	--	--	2.00
STATE TOTALS	8.45	7.17	7.21	4.77	7.37	7.56	7.61	8.10	5.80	7.76	6.95	6.97	6.58

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

Table 4. Trend of quail observed per 100 hours ratios, 1967-71*.

Region and County	1967	1968	1969	1970	1971
Northern Region					
Box Elder	--	--	--	--	--
Cache	0	0	--	--	--
Davis	727	1200	1625	0	829
Morgan	189	--	631	1200	400
Rich	--	--	--	--	--
Summit	23	--	1100	--	--
Weber	--	65	100	86	300
Regional Totals	141	577	657	550	471
Central Region					
Juab	--	--	--	--	--
Salt Lake	1400	248	3684	2637	1133
Sanpete	470	483	427	817	982
Tooele	--	--	--	--	--
Utah	2625	1351	2086	959	988
Wasatch	--	--	--	--	--
Regional Totals	1418	1330	2083	1704	1030
Southern Region					
Beaver	--	--	--	--	--
Garfield	--	--	--	--	--
Iron	66	--	--	--	--
*Kane	264	--	0	2350	578
Millard	--	--	1800	--	3000
Piute	400	--	--	--	--
Sevier	--	--	--	--	--
*Washington	673	1600	322	316	600
*Wayne	--	--	--	--	33
Regional Totals	866	1600	2122	420	708
Northeastern Region					
Daggett	--	--	--	3017	1900
Duchesne	43	45	170	29	0
Uintah	525	514	1575	894	1120
Regional Totals	146	118	794	628	769
Southeastern Region					
Carbon	533	300	377	271	300
Emery	--	--	--	--	83
Grand	--	--	--	--	--
San Juan	1300	--	--	--	--
Regional Totals	750	300	377	271	181
STATE TOTALS	525	887	1049	939	728

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

Table 5. Summary of quail hunter success and distribution of harvest and hunting pressure by region and county, 1971.

Region and County	Hunters reporting	Days hunted	Birds bagged	Birds per hunter-day	Birds per hunter*	% of pressure	% of harvest
Northern							
Box Elder	7	11	5	0.45	0.00	1.09	0.51
Cache	9	15	6	0.40	0.14	1.49	0.61
Davis	44	113	60	0.53	1.61	11.19	6.09
Morgan	12	29	24	0.83	2.70	2.87	2.43
Rich	0	0	0	0.00	0.00	0.00	0.00
Summit	6	12	7	0.58	1.00	1.19	0.71
Weber	33	78	71	0.91	2.15	7.72	7.20
Regional Totals	111	258	173	0.67	1.75	25.54	17.55
Central							
Juab	1	1	0	0.00	1.00	0.10	0.00
Salt Lake	35	73	64	0.88	1.82	7.23	6.49
Sanpete	7	13	5	0.38	0.80	1.29	0.51
Tooele	3	4	0	0.00	0.00	0.40	0.00
Utah	111	303	251	0.83	2.44	30.00	25.46
Wasatch	3	5	0	0.00	1.00	0.50	0.00
Regional Totals	160	399	320	0.80	2.08	39.50	32.45
Southern							
Beaver	1	2	6	3.00	0.00	0.20	0.61
Garfield	0	0	0	0.00	0.00	0.00	0.00
Iron	3	5	6	1.20	2.86	0.50	0.61
Kane	1	7	20	2.86	20.00	0.69	2.03
Millard	3	7	1	0.14	0.00	0.69	0.10
Piute	0	0	0	0.00	0.00	0.00	0.00
Sevier	4	10	6	0.60	2.00	0.99	0.61
Washington	42	142	257	1.81	6.54	14.06	26.06
Wayne	1	3	24	8.00	24.00	0.30	2.43
Regional Totals	55	176	320	1.82	6.37	17.43	32.45
Northeastern							
Daggett	0	0	0	0.00	0.00	0.00	0.00
Duchesne	6	21	29	1.38	6.50	2.08	2.94
Uintah	14	38	20	0.53	1.27	3.76	2.03
Regional Totals	20	59	49	0.83	2.37	5.84	4.97
Southeastern							
Carbon	20	63	60	0.95	3.12	6.24	6.09
Emery	2	6	9	1.50	0.00	0.59	0.91
Grand	0	0	0	0.00	0.00	0.00	0.00
San Juan	0	0	0	0.00	0.00	0.00	0.00
Regional Totals	22	69	69	1.00	3.12	6.83	7.00
Unknown counties	17	49	55	1.12	0.50	4.85	5.58
Mixed counties	0	0	0	--	--	--	--
STATE TOTALS	385	1010	986	0.98	2.62	100.00	100.00

*Based on county of residence

Table 6. Summary of quail bagged per hunter-day by region and county, 1962-71.

Region and county	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern										
Box Elder	0.37	1.89	1.17	0.67	0.96	0.36	0.89	1.04	0.33	0.45
Cache	0.16	2.00	1.86	0.00	0.82	0.53	0.22	0.57	0.20	0.40
Davis	0.77	2.00	1.48	0.74	0.62	0.40	0.81	0.60	0.97	0.53
Morgan	1.74	2.79	3.09	2.35	2.75	2.10	1.56	2.22	1.68	0.83
Rich	0.00	--	--	--	--	--	--	0.29	0.00	--
Summit	1.66	2.25	4.62	1.71	3.13	0.93	0.65	1.00	1.50	0.58
Weber	1.12	2.09	1.05	1.31	0.85	1.33	0.76	0.95	0.66	0.91
Regional Totals	1.07	2.30	1.67	1.19	0.95	0.96	0.90	1.00	1.00	0.67
Central										
Juab	0.83	2.00	0.00	0.67	2.80	0.00	0.50	0.00	0.00	0.00
Salt Lake	0.47	1.82	1.53	1.19	0.71	1.06	1.09	0.77	1.05	0.88
Sanpete	1.00	0.83	1.00	--	0.67	0.82	0.22	0.50	2.00	0.38
Tooele	--	1.00	0.37	0.56	1.00	0.14	0.00	0.33	3.00	0.00
Utah	1.19	1.85	1.89	1.04	1.26	1.14	1.09	1.30	1.12	0.83
Wasatch	--	--	--	0.00	6.00	2.00	--	0.83	1.00	0.00
Regional Totals	1.03	1.82	1.81	1.06	1.19	1.06	1.06	1.14	1.12	0.80
Southern										
Beaver	--	--	--	--	--	--	3.00	--	1.33	3.00
Garfield	--	--	--	1.00	--	--	4.00	1.50	0.00	--
Iron	3.00	--	0.00	2.00	0.50	1.50	4.00	1.17	0.50	1.20
Kane	--	--	4.00	--	1.00	5.86	3.33	0.75	5.67	2.86
Millard	0.33	2.00	0.00	0.93	0.20	1.14	0.50	0.44	0.45	0.14
Piute	--	--	--	0.00	--	2.00	0.67	2.60	0.00	--
Sevier	0.88	1.50	0.37	0.40	2.60	1.23	0.83	1.80	0.00	0.60
Washington	3.28	2.57	3.88	2.03	2.82	1.80	2.45	1.86	1.50	1.81
Wayne	--	2.00	--	2.00	3.50	0.00	2.67	0.75	0.00	8.00
Regional Totals	2.47	2.46	2.35	1.51	2.43	1.86	2.31	1.62	1.33	1.82
Northeastern										
Daggett	--	--	--	--	--	--	--	--	0.00	--
Duchesne	3.00	1.15	1.62	2.00	0.69	0.50	0.40	1.00	1.00	1.38
Uintah	1.60	1.47	0.56	0.76	1.12	0.69	0.71	0.54	1.22	0.53
Regional Totals	1.67	1.33	0.73	0.95	1.02	0.59	0.67	0.60	1.17	0.83
Southeastern										
Carbon	1.33	1.08	1.67	0.60	1.79	1.07	1.00	0.89	1.87	0.95
Emery	1.66	0.67	0.00	1.67	3.50	0.50	0.25	0.86	1.50	1.50
Grand	2.00	--	--	0.00	0.00	--	--	3.00	0.00	--
San Juan	--	--	--	--	--	--	--	1.00	0.00	--
Regional Totals	1.52	0.95	1.33	0.65	1.84	1.00	0.86	0.98	1.77	1.00
Unknown counties	0.88	0.23	0.36	0.11	--	1.44	0.17	--	0.00	1.12
Mixed counties	4.11	2.00	2.00	0.65	--	0.37	3.67	--	0.00	--
STATE TOTALS	1.27	1.71	1.52	1.06	1.36	1.10	1.23	1.16	1.15	0.98

Table 8. Distribution of quail hunting pressure by region and county, 1962-71.

Region and County	1962	1963	1964	1965	1966	1967*	1968	1969	1970	1971
Northern										
Box Elder	2.49	1.97	1.58	3.23	3.81	2.16	2.51	2.20	0.37	1.09
Cache	1.00	0.66	1.27	1.35	1.90	1.64	1.62	2.56	0.62	1.49
Davis	7.96	5.25	4.75	6.74	7.94	12.24	10.95	12.82	9.61	11.19
Morgan	9.45	7.21	2.85	3.77	3.81	2.59	5.12	5.77	5.12	2.87
Rich	0.50	--	--	--	--	--	--	0.64	0.00	--
Summit	1.49	0.98	1.27	2.96	1.90	2.59	1.80	0.46	0.25	1.19
Weber	14.43	9.51	7.91	12.94	8.25	16.38	6.01	9.62	7.62	7.72
Regional Totals	37.32	25.58	19.63	30.99	27.61	37.59	28.01	34.07	23.60	25.54
Central										
Juab	1.49	0.33	0.32	0.54	1.27	1.03	0.54	0.37	0.25	0.10
Salt Lake	7.96	7.21	5.06	14.56	12.38	7.07	8.53	8.61	7.99	7.23
Sanpete	1.49	0.98	0.95	--	0.95	0.95	0.81	0.37	0.12	1.29
Tooele	--	0.33	0.63	1.35	0.63	0.60	0.09	0.55	0.50	0.40
Utah	29.85	29.84	37.97	26.15	32.38	23.28	31.69	28.11	34.83	30.00
Wasatch	--	--	--	0.27	0.32	0.09	--	0.55	0.12	0.50
Regional Totals	40.79	38.69	44.93	42.87	47.93	33.02	41.65	38.55	43.82	39.50
Southern										
Beaver	--	--	--	--	--	--	0.09	--	0.37	0.20
Garfield	--	--	--	0.27	--	--	0.09	0.18	0.00	--
Iron	0.50	--	0.32	0.81	0.63	0.69	0.18	0.55	2.25	0.50
Kane	--	--	0.32	--	0.32	0.60	0.27	0.73	0.37	0.69
Millard	1.00	0.98	1.27	1.35	1.59	0.60	1.08	2.29	1.37	0.69
Piute	--	--	--	0.27	--	0.09	0.27	0.46	0.00	--
Sevier	1.99	0.66	0.95	1.35	1.27	1.12	0.54	0.46	0.62	0.99
Washington	7.46	6.23	4.43	6.47	8.89	12.41	16.52	14.47	13.36	14.06
Wayne	--	0.33	--	0.27	0.63	0.17	0.27	0.37	0.00	0.30
Regional Totals	10.95	8.20	7.29	10.79	13.33	15.69	19.30	19.51	18.35	17.43
Northeastern										
Daggett	--	--	--	--	--	--	--	--	0.00	--
Duchesne	0.50	2.30	1.27	1.08	1.59	2.93	0.45	0.46	2.00	2.08
Uintah	3.48	2.62	4.11	3.50	4.44	2.76	3.41	3.21	8.11	3.76
Regional Totals	3.98	4.92	5.38	4.58	6.03	5.69	3.86	3.66	10.11	5.84
Southeastern										
Carbon	2.99	2.30	1.90	4.31	4.44	2.59	3.14	3.30	2.87	6.24
Emery	0.50	1.31	0.32	0.81	0.32	0.34	0.72	0.64	0.25	0.59
Grand	0.50	--	--	--	--	--	--	0.18	0.12	--
San Juan	--	--	--	--	--	--	--	0.09	0.00	--
Regional Totals	3.99	3.61	2.22	5.39	5.08	2.93	3.86	4.21	3.25	6.83
Unknown counties	1.00	15.41	18.04	4.04	--	1.38	3.05	--	0.87	4.85
Mixed counties	1.00	3.61	2.53	1.35	--	3.71	0.27	--	0.00	--
STATE TOTALS	100.00									

*Distribution of hunting pressure for 1967 and later based on hunter-days rather than number of hunters reporting.

TABLE 9 . State-wide summary of quail harvest statistics, 1951-71.

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	--	--	--	1.17	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
TOTALS					
(1959-71)	102,848	310,531	250,206	1.24	3.02
AVERAGES					
(1959-70)	7,901	24,121	19,051	1.27	3.05

Table 10. Gambel's quail call-count trends on the west slope of the Beaver Dam Mountains, Washington County, 1962-71.

Index	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Mean calls per station	2.71	1.67	0.68	--	9.2	1.23	6.08	--	0.08	1.57
Mean quail calling per station	0.41	0.22	0.15	--	1.10	0.33	1.16	--	0.08	0.37
Mean total calls-route	41.0	25.0	10.1	--	138.5	18.4	91.2	--	1.33	23.5
Mean total quail calling-route	7.0	3.3	2.3	--	17.0	5.0	17.4	--	1.33	5.5

Table 11. Gambel's quail long-period waterhole count trend on the west slope of the Beaver Dam Mountains, Washington County, 1962-71.

Index	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Total young	66	33	19	--	130	50	98	90	21	33
Total adults	142	45	13	--	40	30	24	40	45	8
Total quail	208	78	32	--	170	80	122	130	66	41
Young per 100 adults	46	73	146	--	325	167	408	225	47	412

Table 12. Trend of filaree plants per square foot on the west slope of the Beaver Dam Mountains, 1962-71.

Area	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Vern's Wash (B-1)	0.12	0.03	0.19	0.85	--	1.89	0.39	0.10	0.10	0.07
Reber Wash (B-2)	0.92	0.59	0.82	2.23	--	3.35	1.07	0.32	0.17	0.00
Brick Wash (A-1)	2.80	0.28	1.02	2.02	--	1.84	0.54	0.14	0.11	0.13
Gravel Canyon (A-2)	4.60	0.46	0.46	1.36	--	4.39	0.28	1.28	0.05	0.28
AVERAGE	2.11	0.34	0.62	1.62	--	2.87	0.57	0.46	0.11	0.14

HUNGARIAN PARTRIDGE

SUMMARY

The state-wide Hun population was below average during 1971 but increased production over 1970 and the average in the Northern Region was indicative of an increasing population in the primary range of this species. Production in Wasatch County was poor and the population down from 1970.

Harvest statistics reflected the expected increase in the Northern Region Hun population as well as the expected decline in Wasatch County. On a state-wide basis, an increase in hunters, hunter-days, total harvest and hunter success was shown. Additionally the average hunter spent less hours afield for each hunter-day and less time was required for each Hun bagged.

The long-term trend of the State-wide population is upward due to expansion of the range to the south. Harvest trends have been increasing due to this expanded range and increased interest in Hun hunting.



Brood Counts

Results of the annual random brood counts 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 this survey for 1971 compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total Huns observed	250	+ 5	-47
Young per 100 adults	495	+55	+10
Mean brood size	8.16	-22	-11
Huns observed per 100 hours	243	- 2	-32
Total hours effort	103	+ 7	-23

Hun production (young per 100 adults) improved over 1970 and the average. Indicated density was well below average, probably as a result of a very low breeding population level. In view of the indicated improved production, it was expected that the fall population would be similar to or slightly higher than in 1971. The increased production occurred in the Northern Region. The population in Wasatch County was below 1970 and the average in both production and indicated density.

Harvest

Hunter Questionnaire

Results of the annual hunter questionnaire 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 State-wide harvest statistics in Table 9. The 1971 season compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Hungarian partridge hunters	4,276	+ 4	- 2
Hungarian partridge harvest	9,407	+14	-10
Hunter-days afield	11,011	+12	+ 4
Huns per hunter	2.20	+10	- 8
Huns per hunter-day	0.85	+ 1	-13

Hungarian partridge hunting pressure increased from 1970 to about an average level. Total harvest and hunter success increased over 1970, but was below average. Hunter success in Wasatch County declined as expected.

In the past, the primary range of Huns in Utah has been in the Northern Region and Wasatch County in the Central Region. Harvest data for recent years suggest a gradual expansion of Hungarian partridge range into all of the counties of the Central Region as well as into the Northeastern and Southeastern Regions.

The long-term trend of harvest statistics is upward due to this gradual broadening of the range and increased interest (Figure 1). An undetermined, but presumed substantial, percentage of the annual harvest of Huns occurs incidental to hunting chukars and pheasants.

Field Bag Checks

Results of this survey for 1971 are shown in Table 10. Hunter success trends determined via this method are shown in Table 11. Indexes obtained for 1971 compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total hunters checked	172	-20	-31
Total hours hunted	925	-37	-21
Huns per hunter (complete hunts)	0.82	+20	+20
Huns bagged per 100 hours	15	+36	+ 7
Average hours per hunter-day (complete hunts)	5.4	-13	+10
Hours hunted per Hun bagged	6.6	-25	- 6

This survey showed a greater increase in hunter success than was indicated by the hunter questionnaire. Most of the data compiled was from Box Elder County. Consequently, indexes derived are not as indicative of State-wide success as is the hunter questionnaire.

The average hunter contacted spent less time hunting per day afield than in 1970, but more than average. Less time was also required to bag a Hun than in 1970, but more than average.

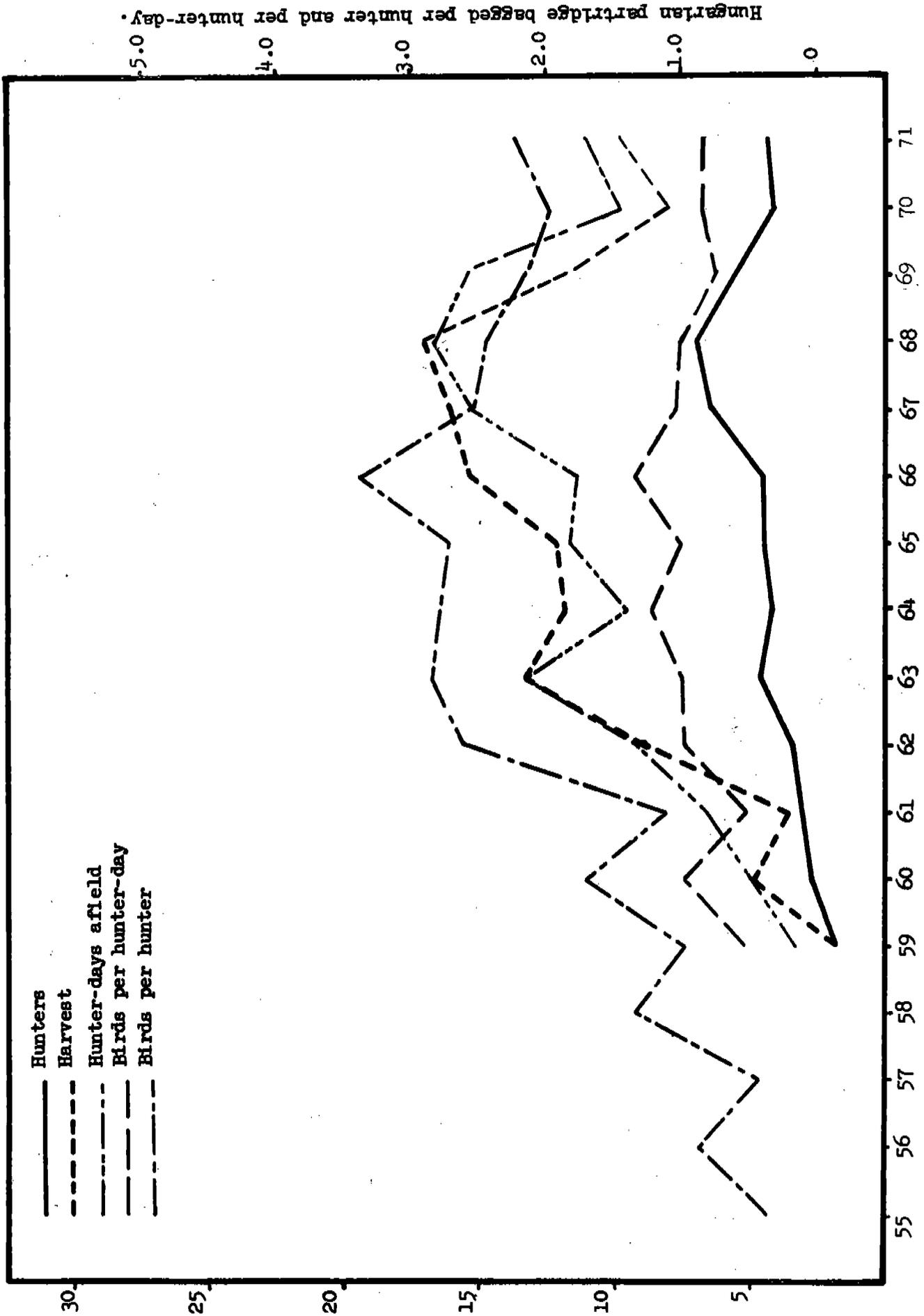


Figure 1. State-wide trend of Hungarian partridge harvest statistics.

Table I. Hungarian Partridge Summer Inventory Summary, 1971.

Region and County	Distinct Broods		Mixed Yng. Mean & Adults		Adults Yng. w/o Yng.	Total Adults	Total Yng.	Total Young/100 Ad.	Vehicle Miles	Hours Effort	Birds/100 hrs.						
	No. Ad.	Yng.	Brood Ad.	Yng.								Ad.	Yng.	100 Ad.	Veh. Horse Walk.	Total	
Northern Region																	
Box Elder	13	17	133	7.82	3	19	9	29	152	524	676	37	42	6	85	213	
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Morgan	1	1	14	14.0	0	0	0	1	14	1400	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Regional Totals	14	18	147	8.16	3	19	9	30	166	553	676	37	42	6	85	213	
Central Region																	
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	0	0	0	--	10	42	2	12	42	350	104	8.25	0	9.75	18	300	
Regional Totals	0	0	0	--	10	42	2	12	42	350	104	8.25	0	9.75	18	300	
Southern Region																	
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region																	
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region																	
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	14	18	147	8.16	13	61	11	42	208	495	780	45	42	16	103	243	

NOT APPLICABLE

NOT APPLICABLE

NOT APPLICABLE

Table 2. Trend of Hungarian partridge young per 100 adults ratios, 1963-71.

Region and County	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region									
Box Elder	1000	828	326	510	447	400	325	306	524
Cache	--	--	--	152	875	450	--	--	--
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	300	--	--	--	1400
Rich	690	400	683	675	288	900	0	--	--
Summit	--	--	--	--	--	--	--	--	--
Weber	260	--	--	--	--	--	--	--	--
Regional Totals	653	776	380	395	449	421	319	306	553
Central Region									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--
Wasatch	550	390	385	270	403	442	497	414	350
Regional Totals	550	390	385	270	403	442	497	414	350
Southern Region									
Beaver									
Garfield									
Iron									
Kane									
Millard									
Piute									
Sevier									
Washington									
Wayne									
Regional Totals									
Northeastern Region									
Daggett									
Duchesne									
Uintah									
Regional Totals									
Southeastern Region									
Carbon									
Emery									
Grand									
San Juan									
Regional Totals									
STATE TOTALS	642	710	382	370	435	430	325	319	495

Table 3. Trend of Hungarian partridge mean brood size from 1963-71.

Region and County	1963	1964	1965	1966	1967	1968	1969	1970	1971
Northern Region									
Box Elder	10.00	13.69	6.53	11.06	8.60	7.00	5.75	11.82	7.82
Cache	--	--	--	7.00	11.67	9.00	--	--	--
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	14.00
Rich	9.60	8.00	13.66	13.50	7.67	9.00	--	--	--
Summit	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--
Regional Totals	9.25	13.10	7.60	10.44	8.77	7.24	5.75	11.58	8.16
Central Region									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--
Wasatch	--	7.80	7.70	6.57	10.00	9.00	9.94	7.25	--
Regional Totals	--	7.80	7.70	6.57	10.00	9.00	9.94	7.25	--
Southern Region									
Beaver									
Garfield									
Iron									
Kane									
Millard									
Piute									
Sevier									
Washington									
Wayne									
Regional Totals									
Northeastern Region									
Daggett									
Duchesne									
Uintah									
Regional Totals									
Southeastern Region									
Carbon									
Emery									
Grand									
San Juan									
Regional Totals									
STATE TOTALS	9.25	12.32	7.63	9.59	9.07	7.93	6.87	10.50	8.16

Table 4. Trend of Hungarian partridge observed per 100 hours, 1967-71.

Region and County	1967	1968	1969	1970	1971
Northern Region					
Box Elder	256	261	416	210	213
Cache	175	209	0	--	--
Davis	--	--	--	--	--
Morgan	73	--	--	--	--
Rich	238	333	--	--	--
Summit	--	--	--	--	--
Weber	--	--	--	--	--
Regional Totals	235	261	385	210	213
Central Region					
Juab	--	--	--	--	--
Salt Lake	--	--	--	--	--
Sanpete	--	--	--	--	--
Tooele	--	--	--	--	--
Utah	--	--	--	--	--
Wasatch	777	1193	1415	720	300
Regional Totals	777	1193	1415	720	300
Southern Region					
Beaver					
Garfield					
Iron					
Kane					
Millard					
Piute					
Sevier					
Washington					
Wayne					
Regional Totals					
Northeastern Region					
Daggett					
Duchesne					
Uintah					
Regional Totals					
Southeastern Region					
Carbon					
Emery					
Grand					
San Juan					
Regional Totals					
STATE TOTALS	292	383	508	249	243

Table 5. Summary of Hungarian partridge hunter success and distribution of harvest and hunting pressure by region and county, 1971.

Region and County	Hunters reporting	Days hunted	Birds bagged	Birds per hunter-day	Birds per hunter*	% of pressure	% of harvest
Northern							
Box Elder	101	260	244	0.94	1.74	50.49	55.45
Cache	31	55	48	0.87	1.52	10.68	10.91
Davis	2	2	1	0.50	1.59	0.39	0.23
Morgan	8	17	21	1.24	4.50	3.30	4.77
Rich	4	6	8	1.33	0.00	1.17	1.82
Summit	3	4	6	1.50	0.00	0.78	1.36
Weber	11	28	21	0.75	3.30	5.44	4.77
Regional Totals	160	372	349	0.94	2.36	72.23	79.32
Central							
Juab	1	1	0	0.00	0.00	0.19	0.00
Salt Lake	2	6	3	0.50	1.41	1.17	0.68
Sanpete	0	0	0	0.00	0.00	0.00	0.00
Tooele	5	10	2	0.20	3.50	1.94	0.45
Utah	8	24	4	0.17	1.00	4.66	0.91
Wasatch	21	73	52	0.71	3.55	14.17	11.82
Regional Totals	37	114	61	0.54	1.80	22.14	13.86
Southern							
Beaver	0	0	0	0.00	0.00	0.00	0.00
Garfield	0	0	0	0.00	0.00	0.00	0.00
Iron	0	0	0	0.00	0.00	0.00	0.00
Kane	0	0	0	0.00	0.00	0.00	0.00
Millard	0	0	0	0.00	0.00	0.00	0.00
Piute	0	0	0	0.00	0.00	0.00	0.00
Sevier	1	10	6	0.60	6.00	1.94	1.36
Washington	1	1	1	1.00	0.00	0.19	0.23
Wayne	0	0	0	0.00	0.00	0.00	0.00
Regional Totals	2	11	7	0.64	6.00	2.13	1.59
Northeastern							
Daggett	0	0	0	0.00	0.00	0.00	0.00
Duchesne	2	3	9	3.00	0.00	0.58	2.05
Uintah	0	0	0	0.00	0.00	0.00	0.00
Regional Totals	2	3	9	3.00	0.00	0.58	2.05
Southeastern							
Carbon	2	3	0	0.00	0.00	0.58	0.00
Emery	0	0	0	0.00	0.00	0.00	0.00
Grand	0	0	0	0.00	0.00	0.00	0.00
San Juan	0	0	0	0.00	0.00	0.00	0.00
Regional Totals	2	3	0	0.00	0.00	0.58	0.00
Unknown counties	7	12	14	1.17	0.00	2.33	3.18
Mixed counties	0	0	0	--	--	--	--
STATE TOTALS	210	515	440	0.85	2.20	100.00	100.00

*Based on county of residence

Table 6. Summary of Hungarian partridge bagged per hunter-day by region and county, 1962-71.

Region and county	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	
Northern											
Box Elder	1.12	1.35	1.32	1.32	1.65	1.45	1.04	0.81	0.87	0.94	0.56
Cache	0.95	1.27	1.30	0.77	1.14	0.65	1.23	0.71	1.14	0.87	0.70
Davis	2.57	1.00	--	--	0.00	0.50	1.81	0.92	0.09	0.50	
Morgan	1.25	0.50	2.33	--	1.00	0.00	0.96	0.68	1.00	1.24	
Rich	0.75	2.00	2.93	3.22	--	1.43	0.40	0.00	0.57	1.33	
Summit	1.00	--	1.00	0.00	0.00	0.16	0.40	2.56	0.00	1.50	
Weber	0.91	1.22	0.87	0.33	0.46	0.88	1.09	0.58	0.31	0.75	
Regional Totals	1.07	1.31	1.43	1.14	1.42	1.16	1.07	0.78	0.87	0.94	
Central											
Juab	--	--	--	--	2.00	0.00	3.00	0.00	0.57	0.00	
Salt Lake	0.00	0.00	2.00	0.25	0.00	0.17	0.23	0.85	0.50	0.50	
Sanpete	--	--	--	0.00	--	--	--	2.27	0.67	--	
Tooele	0.00	0.30	2.00	0.00	0.20	0.41	0.00	0.62	0.81	0.20	
Utah	0.00	0.00	1.33	0.37	0.23	0.25	0.57	0.22	0.56	0.17	
Wasatch	1.27	1.00	3.46	1.23	0.24	1.74	1.00	0.29	1.03	0.71	
Regional Totals	0.48	0.41	3.10	0.71	0.26	0.76	0.85	0.70	0.77	0.54	
Southern											
Beaver	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	0.00	--	--	--	--	--	
Millard	--	--	--	--	--	0.00	--	--	--	--	
Piute	--	--	--	--	--	--	0.00	--	1.00	--	
Sevier	--	--	--	0.00	2.00	0.00	0.00	--	--	0.60	
Washington	--	--	--	--	--	0.00	0.00	--	--	1.00	
Wayne	--	--	--	--	--	--	--	--	--	--	
Regional Totals	--	--	--	0.00	0.67	0.00	0.00	--	1.00	0.64	
Northeastern											
Daggett	--	--	--	--	--	--	--	0.00	0.00	--	
Duchesne	0.00	--	2.00	0.00	1.67	0.00	1.67	2.00	--	3.00	
Uintah	--	0.00	--	--	--	0.25	0.00	0.00	0.00	--	
Regional Totals	0.00	0.00	2.00	0.00	1.67	0.20	1.25	0.75	0.00	3.00	
Southeastern											
Carbon	0.00	--	1.50	--	--	0.00	--	1.50	1.00	0.00	
Emery	0.00	1.00	--	--	--	--	--	--	0.00	--	
Grand	--	--	--	--	--	--	--	--	1.67	--	
San Juan	--	--	--	--	--	--	--	2.00	--	--	
Regional Totals	0.00	1.00	1.50	--	--	0.00	--	1.67	0.86	0.00	
Unknown counties	0.20	0.04	0.29	0.39	--	1.12	0.82	--	0.00	1.17	
Mixed counties	1.00	2.27	0.56	1.13	--	0.20	--	--	--	--	
STATE TOTALS	0.98	1.00	1.22	1.03	1.34	1.06	1.02	0.77	0.84	0.85	

Table 8. Distribution of Hungarian partridge hunting pressure by region and county, 1962-71.

Region and County	1962	1963	1964	1965	1966	1967*	1968	1969	1970	1971
Northern										
Box Elder	37.04	41.24	40.67	56.65	58.45	53.13	50.93	50.27	39.96	50.49
Cache	29.63	16.38	10.67	18.45	24.20	16.30	15.94	8.64	23.85	10.68
Davis	1.85	1.13	--	--	1.37	1.63	2.62	1.73	2.30	0.39
Morgan	2.78	1.13	2.00	--	0.91	1.63	2.86	8.78	1.26	3.30
Rich	3.70	0.56	2.67	1.29	--	1.90	1.25	0.27	1.46	1.17
Summit	0.93	--	0.67	0.43	0.46	3.40	2.49	1.20	1.05	0.78
Weber	7.41	7.91	4.67	6.44	3.65	3.26	4.11	10.77	6.69	5.44
Regional Totals	83.34	68.33	61.35	83.26	89.04	81.25	80.20	81.65	76.57	72.23
Central										
Juab	--	--	--	--	0.46	0.27	0.25	0.66	1.46	0.19
Salt Lake	0.93	0.56	0.67	0.43	0.91	2.45	1.62	1.73	1.67	1.17
Sanpete	0.93	--	--	0.43	--	--	--	2.93	0.63	--
Tooele	1.85	1.69	0.67	2.15	1.83	2.31	0.25	1.73	4.39	1.94
Utah	4.63	2.82	1.33	2.58	2.74	2.17	2.62	2.39	5.65	4.66
Wasatch	1.85	2.26	1.33	5.58	3.20	3.67	9.09	7.45	7.11	14.17
Regional Totals	10.19	7.33	4.00	11.17	9.14	10.87	13.82	16.89	20.92	22.14
Southern										
Beaver	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	0.46	--	--	--	--	--
Millard	--	--	--	--	--	0.27	--	--	--	--
Piute	--	--	--	--	--	--	0.12	--	0.21	--
Sevier	--	--	--	0.43	0.46	0.14	0.12	--	--	1.94
Washington	--	--	--	--	--	0.95	0.25	--	--	0.19
Wayne	--	--	--	--	--	--	--	--	--	--
Regional Totals	--	--	--	0.43	0.92	1.36	0.50	0.00	0.21	2.13
Northeastern										
Daggett	--	--	--	--	--	--	--	0.40	0.21	--
Duchesne	0.93	--	0.67	0.86	0.91	0.41	0.37	0.40	--	0.58
Uintah	--	0.56	--	--	--	1.63	0.12	0.27	0.21	--
Regional Totals	0.93	0.56	0.67	0.86	0.91	2.04	0.50	1.06	0.42	0.58
Southeastern										
Carbon	0.93	--	1.33	--	--	0.14	--	0.27	0.21	0.58
Emery	0.93	0.56	--	--	--	--	--	--	0.63	--
Grand	--	--	--	--	--	--	--	--	0.63	--
San Juan	--	--	--	--	--	--	--	0.13	--	--
Regional Totals	1.86	0.56	1.33	0.00	0.00	0.14	--	0.40	1.46	0.58
Unknown counties	1.85	19.77	28.67	2.58	--	2.31	4.98	--	0.42	2.33
Mixed counties	1.85	3.39	4.00	1.72	--	2.04	--	--	0.00	--
STATE TOTALS	100.00									

*Distribution of hunting pressure for 1967 and later based on hunter-days rather than number of hunters reporting.

Table 9. State-wide summary of Hungarian partridge harvest statistics, 1955-71.

Year	Total hunters	Total harvest	Hunter days afield	Huns per hunter-day	Huns per hunter
1955	--	--	--	--	0.39
1956	--	--	--	--	0.89
1957	--	--	--	--	0.45
1958	--	--	--	--	1.34
1959	1,846	1,820	3,354	0.54	0.99
1960	2,847	4,877	4,929	0.99	1.71
1961	3,205	3,648	6,645	0.54	1.13
1962	3,440	8,970	9,153	0.98	2.61
1963	4,676	13,343	13,291	1.00	2.85
1964	4,249	11,812	9,688	1.22	2.78
1965	4,498	12,183	11,798	1.03	2.71
1966	4,549	15,348	11,473	1.34	3.37
1967	6,321	16,049	15,105	1.06	2.54
1968	6,935	17,089	16,674	1.02	2.46
1969	5,591	11,966	15,515	0.77	2.14
1970	4,128	8,236	9,818	0.84	2.00
1971	4,276	9,407	11,011	0.85	2.20
TOTALS (1959-71)	56,561	134,748	138,454	0.97	2.38
AVERAGE (1959-70)	4,357	10,445	10,620	0.98	2.40

Table 10. Hungarian Partridge Field Bag Check Summary, 1971.

Region and County	ALL HUNTS				COMPLETE HUNTS				Birds/ Hunter
	Total Parties	Total Hunters	Total Hours	Total Birds/ 100 hrs.	Total Complete Hunts	Total Hunters	Total Hours	Total Birds/ 100 hrs.	
Northern Region									
Box Elder	52	156	903.5	125	52	156	903.5	125	13
Cache	2	4	7	4	2	4	7	4	57
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--
Rich	4	11	13	10	4	11	13	10	77
Summit	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--
Regional Totals	58	171	923	139	58	171	923	139	15
Central Region									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	1	1	2	2	1	1	2	2	100
Sanpete	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--
Regional Totals	1	1	2	2	1	1	2	2	100
Southern Region									
Beaver									
Garfield									
Iron									
Kane									
Millard									
Piute									
Sevier									
Washington									
Wayne									
Regional Totals									
Northeastern Region									
Daggett									
Duchesne									
Uintah									
Regional Totals									
Southeastern Region									
Carbon									
Emery									
Grand									
San Juan									
Regional Totals									
STATE TOTALS	59	172	925	141	59	172	925	141	15
									0.82

NOT APPLICABLE

NOT APPLICABLE

NOT APPLICABLE

Table 11. Hungarian partridge hunter success trend determined by field bag checks, 1966-71.

Region and County	1966		1967		1968		1969		1970		1971	
	Birds/ 100 hrs. Hunter											
Northern Region												
Box Elder	18	0.89	15	0.67	14	0.59	14	0.69	11	0.69	13	0.80
Cache	26	1.50	6	0.42	33	1.26	21	0.66	--	--	57	1.00
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	50	0.50	--	--
Rich	50	1.25	9	0.91	31	0.83	25	0.25	--	--	77	0.91
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	12	0.67	--	--	15	0.80	--	--
Regional Totals	25	1.07	14	0.68	17	0.69	15	0.68	11	0.69	15	0.81
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	100	2.00
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	20	--	--	--	--	--
Wasatch	48	1.50	24	0.40	25	0.94	15	0.36	15	0.35	--	--
Regional Totals	48	1.50	24	0.40	25	0.94	15	0.36	15	0.35	100	2.00
Southern Region												
Beaver												
Garfield												
Iron												
Kane												
Millard												
Piute												
Sevier												
Washington												
Wayne												
Regional Totals												
NOT APPLICABLE												
Northeastern Region												
Daggett												
Duchesne												
Uintah												
Regional Totals												
NOT APPLICABLE												
Southeastern Region												
Carbon												
Emery												
Grand												
San Juan												
Regional Totals												
NOT APPLICABLE												
STATE TOTALS	34	1.31	15	0.67	17	0.71	15	0.66	11	0.68	15	0.82

WILD TURKEY

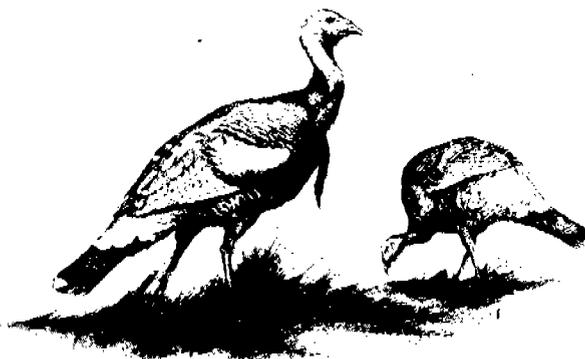
SUMMARY

Harvest statistics for 1971 indicate that the State-wide population was similar to or slightly lower than in 1970 and slightly below the average since the first hunting season in 1963.

Total turkey harvest increased during both the spring and fall seasons. Hunting pressure during the spring season was above average while in the fall it was lower than average but greater than 1970. Hunter success during the spring season was below the average for the three previous spring seasons but considerably better than the low in 1969. No spring season was held in 1970. Fall hunter success was slightly lower than 1970 in terms of the percent of hunters bagging one or more turkeys but was similar from the standpoint of turkeys bagged per hunter-day.

The percent of hunters who reported observing turkeys during the spring season was much higher than in 1969 but slightly lower than the average since 1967. During the fall hunt this percentage, plus total turkeys observed, declined from both 1970 and the average.

Reported crippling loss continued to be higher during the spring season than in fall.



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. No brood data were obtained during 1971.

Harvest

Spring Gobbler Seasons

Results of the 1971 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 1971 spring season compared to 1969 (there was no season in 1970) and the average as follows:

	<u>Percent change from</u>		
	<u>1971</u>	<u>1969</u>	<u>Average</u>
Permits sold	223	-19	+ 5
Hunters afield	215	-19	+ 6
Turkeys harvested	26	+100	+44
Hunter-days afield	576	- 6	+18
Percent hunter success	11	+120	-15
Turkeys bagged per hunter-day	0.04	+100	-20
Percent of hunters who observed turkeys	38	+ 73	- 7
Total turkeys reported observed	348	+185	+27
Crippling loss(loss:100 bagged)	45	+80	- 2

The number of hunters and hunter-days afield in 1971 was less than during the 1969 season but above average. Total harvest doubled over 1969 and was well above average. Hunter success also doubled over 1969, but was still slightly below average. A larger percentage of hunters observed turkeys than in 1969, but less than average. Total turkeys observed was higher than both 1969 and the average. The reported rate of crippling loss was considerably higher than in 1969, but slightly less than average. Ratios for spring seasons continue to be much higher than is reported for fall hunts. This may be partially explained by the small number of turkeys harvested. The loss of one or two birds results in a rather high percentage when expanded on the basis of 100 birds. Nevertheless it seems evident that hunters tend to lose a substantially larger number of turkeys in spring than in the fall.

The trend shown by spring harvest data (Figure 1) indicates that the turkey populations are recovering from the low point reached during the severe winter of 1968-69.

Fall seasons

Results of the 1971 fall season are shown in Table 3. Harvest trends for each hunting unit are shown in Tables 4-8 and State-wide trends in Table 9. The 1971 season compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Permits sold	184	- 7	-21
Hunters afield	174	0	-19
Turkeys harvested	60	+ 3	-15
Hunter-days afield	444	+ 6	-11
Percent hunter success	21	-12	-22
Turkeys bagged per hunter-day	0.14	0	+ 8
Percent of hunters who observed turkeys	28	-10	-30
Total turkeys reported observed	451	-20	-46
Crippling loss(loss:100 bagged)	8	+33	-38

Fewer permits were sold in 1971 compared to both 1970 and the average. The number of hunters afield was similar to 1970, but below average. Total hunter-days afield and harvest increased slightly over 1970, but were below average. Percent hunter success declined from both 1970 and the average. Success per day was the same as 1970 and slightly higher than average. The increased total harvest was a result of increased days afield plus a slightly larger percentage of the hunter's afield bagging two turkeys (the season limit). The trend of fall harvest statistics is shown in Figure 2.

The percent of hunters who reported observing turkeys and total turkeys observed were both lower than 1970 and the average.

Crippling loss was higher than in 1970, but below average.

This information indicates that the 1971 population level was similar to or slightly lower than 1970, but below average.

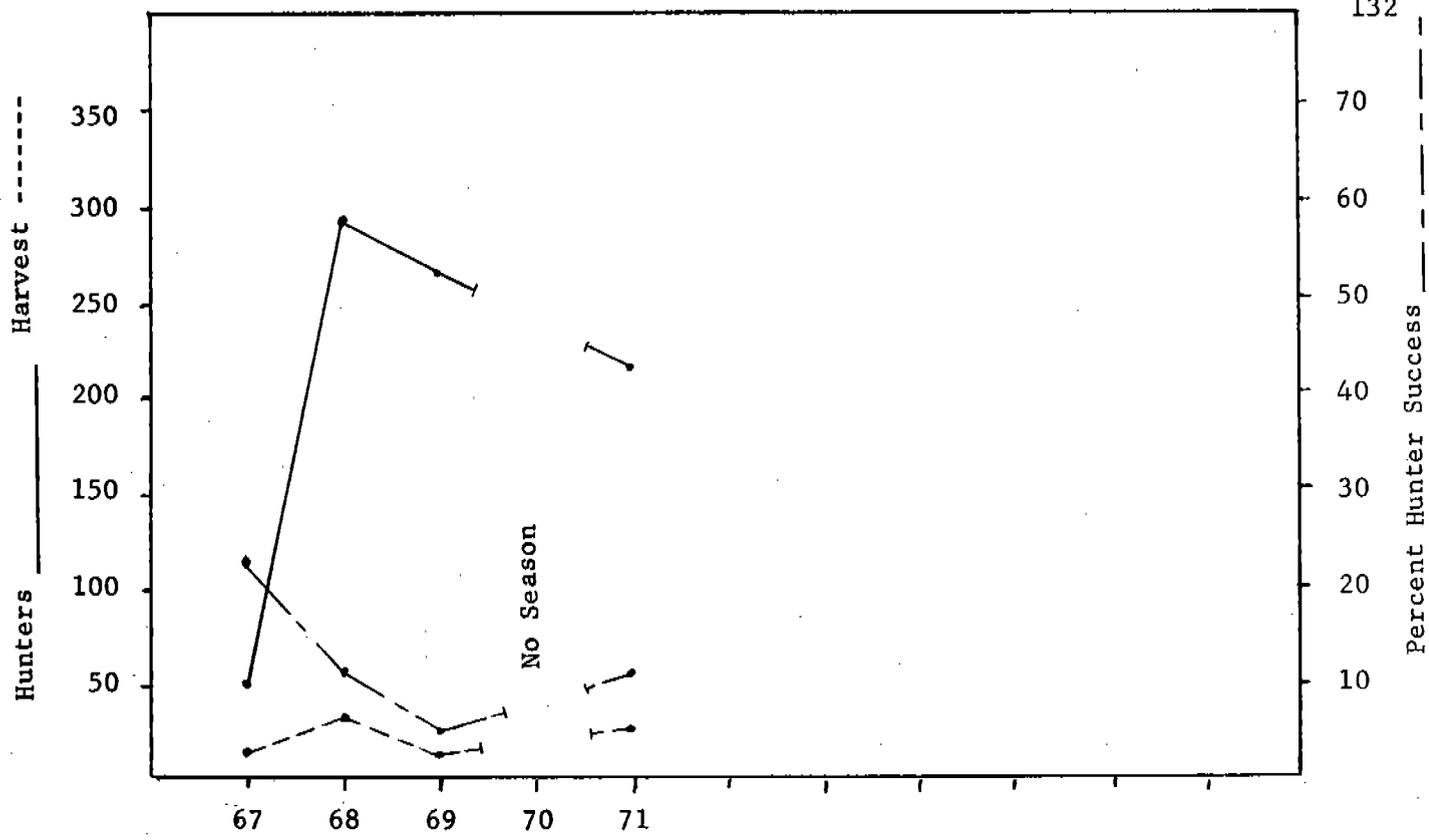


Figure 1. Wild turkey gobbler harvest trends for spring seasons.

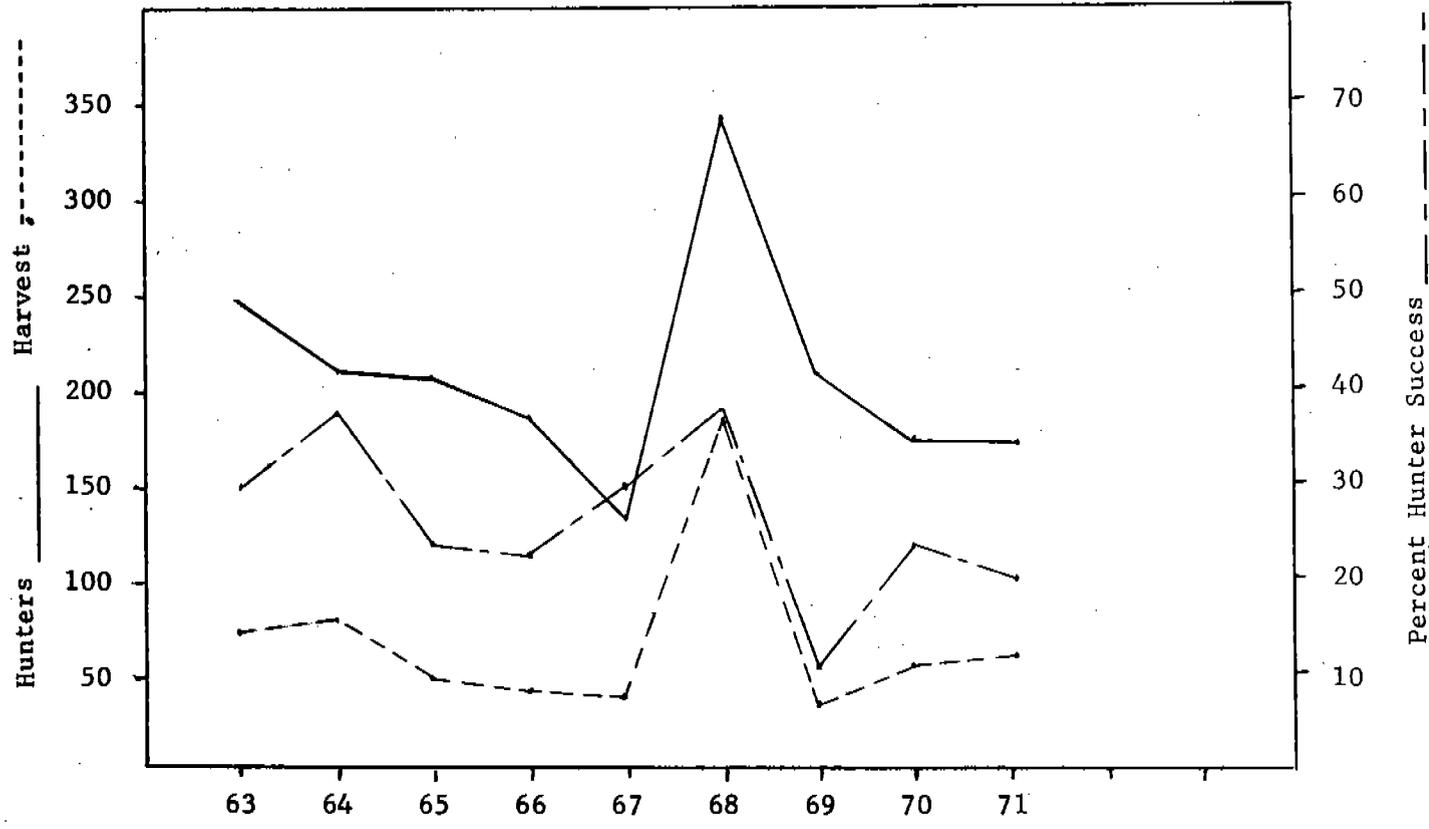


Figure 2. Wild turkey harvest trends for fall seasons.

Table 1. Summary of the 1971 Spring Turkey Season.

DATA	EAST ZION		BOULDER		LA SAL		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
Permits Sold	--	--	--	--	--	--	--	--	--	--	--	--	223	--
No Hunts	--	--	--	--	--	--	--	--	--	--	--	--	7	--
Hunters afield-	91	106	23	27	15	17	23	27	20	23	13	15	185	215
Hunter-days-	234	272	55	64	29	34	47	54	79	92	52	60	496	576
Turkeys bagged-	12	14	1	1	1	1	2	2	3	4	3	4	22	26
Percent success*	12	--	4	--	6	--	8	--	15	--	15	--	11	--
(1 or more turkeys)	1	--	0	--	0	--	0	--	0	--	1	--	2	--
No. hunters bagging-	1.00	--	0	--	0	--	0	--	0	--	7.69	--	1.08	--
two turkeys	.051	--	.018	--	.034	--	.042	--	.038	--	0.57	--	.044	--
Percent bagging	42	--	100	--	0	--	0	--	67	--	67	--	145	--
two turkeys	155	--	20	--	6	--	89	--	56	--	22	--	348	--
Turkeys bagged per	60	--	10	--	3	--	57	--	32	--	9	--	171	--
hunter day	58	--	10	--	--	--	19	--	18	--	3	--	108	--
Reported crippling loss	37	--	--	--	3	--	13	--	6	--	10	--	69	--
(loss/100 bagged)	35	--	3	--	3	--	9	--	14	--	8	--	72	--
Turkeys observed-	38	--	13	--	20	--	39	--	70	--	61	--	38	--
Gobblers														
Hens														
Unidentified														
Number of hunters-														
who saw turkeys														
Percent of hunters-														
who saw turkeys														

Projection factor 1.1614

*Based on number of hunters who bagged one or more turkeys, not total turkeys.

Table 2. Summary of turkey harvest statistics for spring gobbler seasons, 1967-71.

Hunting Unit and Year	Hunters		Total Harvest	Hunter-days		Percent Success*	Turkeys per Hunter-day		Percent of Hunters Observing		Total Permits
	Afield			Afield	Season		Hunter-day	Turkeys	Turkeys	Permits	
East	24	9	59	38	0.15	58					
Zion	130	16	364	11	0.04	48					
	77	4	210	6	0.02	35					
	106	14	272	12	0.05	38					
Boulder	17	2	43	12	0.05	75					
Mountains	134	15	330	10	0.05	33					
	141	6	300	4	0.02	16					
	27	1	64	4	0.02	13					
LaSal	6	0	16	0	0	33					
Mountains	17	0	44	0	0	62					
	39	3	102	9	0.03	24					
	17	1	34	6	0.03	20					
Beaver	27	2	54	8	0.04	39					
Mountains	23	4	92	15	0.04	70					
Mixed	2	1	By	0	By	0					
Units	9	9	Unit	12	Unit	12					
	10	10	Season	0	Season	11					
	15	4	Season	15	Season	61					
STATE	49	11	118	22	0.09	59					
TOTALS	290	31	738	11	0.04	41					
	267	13	612	5	0.02	22					
	215	26	576	11	0.04	38					
AVERAGES (1967-69)	202	18	489	13	0.05	41					
						213					

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

Table 3. Summary of the 1971 Fall Turkey Season.

DATA	PINE VALLEY		EAST ZION		BEAVER		BOULDER		HENRY MTS.		LA SAL		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	--	--	--	--	--	--	--	--	--	--	--	--	--	--	184	--
Hunters afield	26	31.7	74	90.21	11	13.41	16	19.5	1	1.219	11	13.41	4	4.88	143	174
Hunter days	71	86.55	188	229.17	20	24.38	38	46.32	8	9.75	22	26.82	17	20.72	364	444
Turkeys bagged	9	10.97	32	39.0	4	4.88	0	0	0	0	4	4.88	0	0	49	60
Percent Success*																
(1 or more turkeys)	23.1	--	27.0	--	18.2	--	0	--	0	--	18.2	--	0	--	21.0	--
No. hunters bagging two turkeys	3	--	12	--	2	--	0	--	0	--	2	--	0	--	19	--
Percent bagging two turkeys	11.5	--	16.2	--	18.2	--	0	--	0	--	18.2	--	0	--	13.3	--
Turkeys bagged per hunter day	.127	--	.170	--	.20	--	0	--	0	--	.182	--	0	--	0.135	--
Reported crippling loss (loss/100 bagged)	22	--	6.25	--	0	--	0	--	0	--	0	--	0	--	8.16	--
Turkeys observed	98	--	264	--	64	--	0	--	0	--	25	--	0	--	451	--
Number of hunters who saw turkeys	9	--	23	--	5	--	0	--	0	--	3	--	0	--	40	--
Percent of hunters who saw turkeys	34.6	--	31.1	--	45.5	--	0	--	0	--	27.3	--	0	--	28.0	--

Projection factor 1.219 (184 ÷ 151)

*Based on number of hunters who bagged one or more turkeys, not total turkeys.

Table 4. Summary of Boulder Mountain wild turkey harvest data for fall hunts from 1963 through 1971*.

Harvest Data	1963	1964	1965	1966	1967	1968	1969	1970	1971
Hunters afield	21	20	19	50	22	77	45	24	20
Hunter-days	--	45	44	132	71	195	103	77	46
Turkeys bagged	2	8	8	11	4	37	0	2	0
Percent success**	10	40	44	22	20	32	0	8	0
Percent bagging two turkeys	--	--	--	--	--	13	0	0	0
Birds bagged/day	--	0.18	0.18	0.08	0.06	0.19	0	0.03	0
Reported crippling loss(loss:100 bagged)	100	37	12	9	25	18	--	0	0
Turkeys observed	--	86	99	260	55	436	0	16	0
No. hunters who observed turkeys	8	14	9	22	8	27	0	2	0
Percent of hunters who observed turkeys	38	70	53	44	40	38	0	10	0

*Data for 1963 were collected at hunter checking stations; for 1964 and later years via mailed questionnaires.

**Season bag limits in 1968, 1969 and 1970 were 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 1963 through 1971*.

Harvest Data	1963	1964	1965	1966	1967	1968	1969	1970	1971
Hunters afield	112	71	86	111	113	218	137	87	90
Hunter-days	--	127	170	266	334	569	374	203	229
Turkeys bagged	43	26	26	31	36	127	35	43	39
Percent success**	38	39	30	28	32	40	16	32	27
Percent bagging two turkeys	--	--	--	--	--	19	10	16	16
Birds bagged/day	--	0.20	0.15	0.12	0.11	0.22	0.9	0.21	0.17
Reported crippling loss(loss:100 bagged)	5	15	8	6	15	15	19	5	6
Turkeys observed	--	270	403	476	693	1,661	426	469	264
No. hunters who observed turkeys	54	14	32	43	51	122	30	30	23
Percent of hunters who observed turkeys	48	62	40	39	50	60	25	40	31

*Data for 1963 were collected at hunter checking stations; for 1964 and later via mailed questionnaire.

**Season bag limits in 1968, 1969 and 1970 were 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 1963 through 1971*.

Harvest Data	1963	1964	1965	1966	1967	1968	1969	1970	1971
Hunters afield	115	120	102			45	17	18	13
Hunter-days	--	180	192			119	51	30	27
Turkeys bagged	30	47	16			19	1	3	5
Percent success**	26	37	15			43	7	11	18
Percent bagging two turkeys	--	--	--			0	0	6	18
Birds bagged/day	--	0.26	0.08			0.16	0.02	0.10	0.18
Reported crippling loss(loss:100 bagged)	23	11	6			11	0	0	0
Turkeys observed	--	802	228			214	40	15	25
No. hunters who observed turkeys	56	69	20			21	1	3	3
Percent of hunters who observed turkeys	54	58	21			50	7	20	27

*Data for 1963 collected at hunter checking stations; for 1964 and later via mailed questionnaire.

**Season bag limits in 1969 and 1970 were 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 the fall hunt, 1971.

Harvest Data	1970*	1971
Hunters afield	30	13
Hunter-days	87	24
Turkeys bagged	7	5
Percent success	15	18
Percent bagging two turkeys	8	18
Birds bagged/day	0.08	0.20
Reported crippling loss(loss:100 bagged)	0	0
Turkeys observed	48	64
No. hunters who observed turkeys	8	5
Percent of hunters who observed turkeys	31	46

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

Table 8. Summary of Pine Valley Mountain wild turkey harvest data for the fall hunt, 1971.

Harvest Data	1970*	1971
Hunters afield	6	32
Hunter-days	21	87
Turkeys bagged	3	11
Percent success	50	23
Percent bagging two turkeys	0	12
Birds bagged/day	0.14	0.13
Reported crippling loss(loss:100 bagged)	33	22
Turkeys observed	16	98
No. hunters who observed turkeys	4	9
Percent of hunters who observed turkeys	80	35

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

Table 9. State-wide summary of wild turkey harvest data for fall hunts from 1963 through 1971*.

Harvest Data	1963	1964	1965	1966**	1967	1968**	1969	1970	1971	Averages (1963-70)
Permits sold	297	229	214	192	146	368	223	197	184	233
Hunters afield	248	211	207	187	135	344	210	174	174	214
Hunter-days	--	362	406	471	405	883	549	418	444	499
Turkeys bagged	75	81	50	43	40	183	36	58	60	71
Percent success***	30	38	24	23	30	38	11	24	21	27
Percent bagging two turkeys	--	--	--	--	--	15	6	10	13	10
Birds bagged/day	--	0.22	0.12	0.09	0.10	0.21	0.06	0.14	0.14	0.13
Reported crippling loss(loss:100 bagged)	15	15	8	7	16	15	19	6	8	13
Turkeys observed	--	1158	730	756	748	2321	466	564	451	843
No. hunters who observed turkeys	118	127	61	68	59	171	31	47	40	85
Percent of hunters who observed turkeys	48	60	29	36	48	54	17	31	28	40

*Data for 1963 collected by hunter checking stations, for 1964 and later via mailed questionnaire.

**During 1966, 1968 and 1969 some hunters hunted more than one area or failed to designate areas hunted. This accounts for the difference between totals given above and combined tables of separate units in Tables 5, 6, and 7.

***During 1968 the Boulder Mountain and East Zion Units had two-bird season limits and the LaSal Mountain a one-bird limit; in 1969 and 1970 all areas had a two-bird limit. Hunter success was based on the number of successful hunters rather than total turkeys bagged.

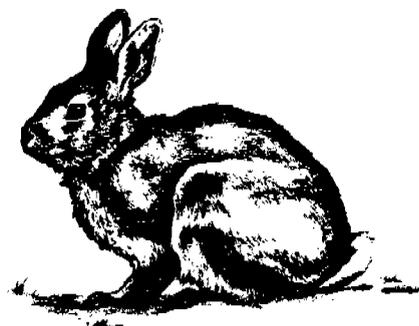
COTTONTAIL RABBIT

SUMMARY

Roadside counts showed a decline in the State-wide cottontail population in 1971 as compared to 1970; however, it was still higher than the average since the initiation of this survey in 1967.

Total hunters, hunter-days and consequently harvest increased over 1970. Hunter success declined reflecting the State-wide decreased population indicated by roadside counts.

Since the present management program was first adopted in 1967, trend data recorded to date is not sufficient to show long-term trends of the State's cottontail population.



Roadside Counts

Results of the annual roadside counts are shown in Table 1 of this section. The trend of cottontails observed per mile and young per 100 adults since 1967 is shown in Tables 2 and 3 respectively. Indexes for 1971 compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total cottontails counted	1,184	+ 5	+15
Total miles driven	2,702	+19	+ 3
Cottontails observed per mile	0.44	-12	+10
Young observed per 100 adults	123	+21	+18

The density of cottontails State-wide, as indicated by the number observed per mile, declined from 1970, but remained above the previous four-year average. Indicated production improved over 1971 and the average; however, trends to date suggest an inverse relationship between cottontails per mile and young per 100 adult ratios (Figure 1).

Harvest

Hunter Questionnaire

Results of the 1971 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 1967 are found in Tables 5-7. Monthly distribution of harvest and hunting pressure each year since 1967 is shown in Table 8. Trend of State-wide harvest statistics is found in Table 9 and Figure 2. The 1971 season compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Cottontail hunters	30,824	+26	+18
Cottontail harvest	239,511	+23	+22
Hunter-days afield	145,287	+40	+42
Cottontails per hunter	7.78	- 2	+ 3
Cottontails per hunter-day	1.65	-12	-14

Total hunting pressure (both hunters and hunter-days) and consequently harvest increased over both 1970 and the average. Hunter success per day decreased from both 1970 and the average reflecting the decline in the State-wide cottontail population indicated by the summer roadside counts. Success per season varied but slightly from both 1970 and the average.

The distribution of harvest and hunting pressure by month was similar to the previous four years with most of the harvest occurring during the winter months (November, December, and January).

Field Bag Checks

Results of this survey for 1971 are shown in Table 10. Trend of hunter success as determined by bag checks are shown in Table 11. The 1971 season compared to 1970 and the average as follows:

	<u>1971</u>	<u>Percent change from</u>	
		<u>1970</u>	<u>Average</u>
Total hunters checked	448	-19	-17
Total hours hunted	944	-32	-37
Cottontails per hunter (complete hunts)	1.20	- 9	-29
Cottontails bagged per 100 hours	43	+ 2	-17
Hours per hunter-day (complete hunts)	2.5	-11	-24
Hours per cottontail bagged	2.3	- 4	+ 5

Bag check information showed a decline in hunter success per day. The magnitude of decline was similar to that shown by hunter questionnaire.

The decreased success apparently explained less hours effort being expended each day by the average hunter.

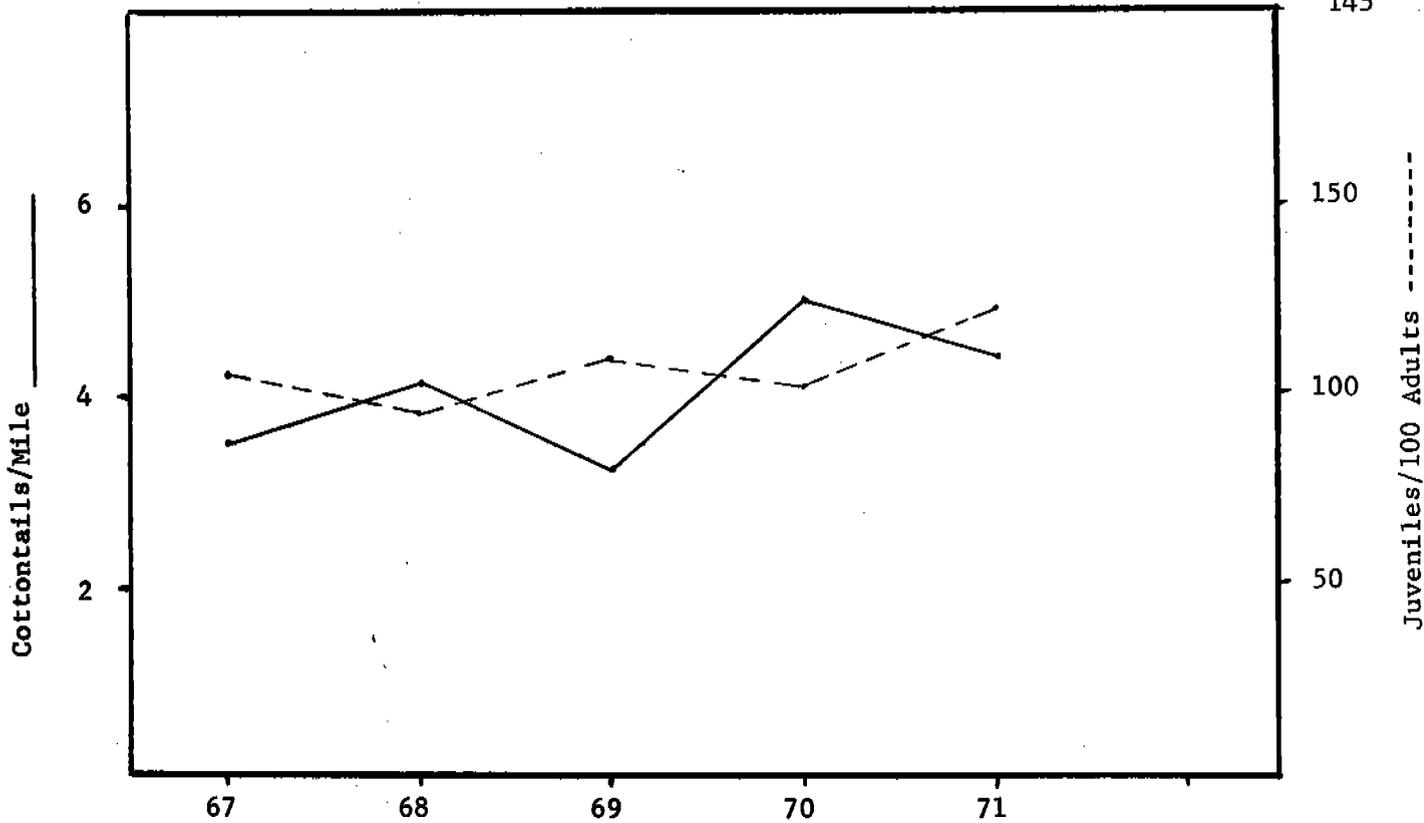


Figure 1. Cottontail Rabbit Population Indexes Trend.

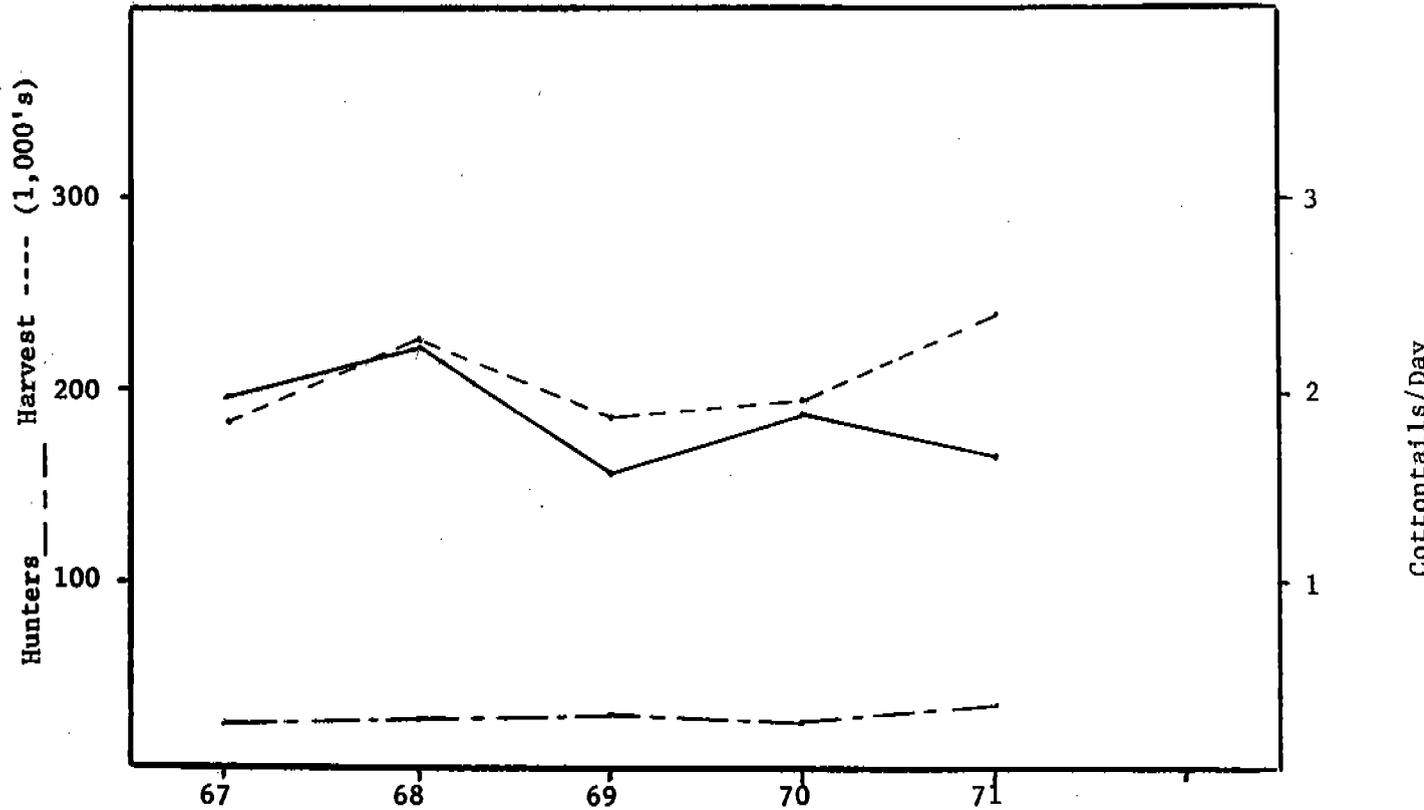


Figure 2. Cottontail Rabbit Harvest Trend.

Table 1. Cottontail Rabbit Summer Inventory Summary, 1971.

Region and County	Miles Driven	Rabbits Observed		Total	Young per 100 adults	Rabbits/Mile
		Adults	Young			
Northern Region						
Box Elder	180	27	35	77	129	0.43
Cache	50	3	0	3	0	0.06
Davis	--	--	--	--	--	--
Morgan	18	4	1	5	25	0.28
Rich	90	10	8	20	80	0.22
Summit	--	--	--	--	--	--
Weber	--	--	--	--	--	--
Regional Totals	338	44	44	105	100	0.31
Central Region						
Juab	120	14	24	40	171	0.33
Salt Lake	--	--	--	--	--	--
Sanpete	120	34	49	92	144	0.77
Tooele	90	8	8	20	100	0.22
Utah	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--
Regional Totals	330	56	81	152	145	0.46
Southern Region						
Beaver	90	14	2	16	14	0.18
Garfield	90	11	13	30	118	0.33
Iron	60	8	13	23	162	0.38
Kane	60	6	3	10	50	0.17
Millard	239	28	9	37	32	0.15
Piute	120	0	0	0	--	0
Sevier	114	10	39	52	390	0.46
Washington	180	41	29	83	71	0.46
Wayne	101	3	5	8	167	0.08
Regional Totals	1054	121	113	259	93	0.25
Northeastern Region						
Daggett	170	52	42	130	81	0.76
Duchesne	120	26	39	69	150	0.58
Uintah	120	54	103	167	191	1.39
Regional Totals	410	132	184	366	139	0.89
Southeastern Region						
Carbon	120	19	10	29	53	0.24
Emery	90	2	2	4	100	0.04
Grand	180	53	42	95	79	0.53
San Juan	180	53	114	174	215	0.97
Regional Totals	570	127	168	302	132	0.53
STATE TOTALS	2702	480	590	1184	123	0.44

Table 2. Summary of cottontail rabbits observed per mile during summer inventory, 1967-71.

Region and County	1967	1968	1969	1970	1971	1972
Northern Region						
Box Elder	0.36	0.78	0.50	0.76	0.43	0.06
Cache	0	0.02	0.01	--	0.06	
Davis	--	--	--	--	--	
Morgan	0.02	0.17	0.10	--	0.28	0.14
Rich	0.26	0.50	0.52	0.43	0.22	0.14
Summit	0.16	0.22	0.08	0.39	--	
Weber	--	--	0.16	--	--	
Regional Totals	0.19	0.44	0.23	0.59	0.31	0.09
Central Region						
Juab	0.26	0.42	0.51	0.72	0.33	
Salt Lake	0.01	0	0	--	--	
Sanpete	0.30	0.36	0.53	0.63	0.77	
Tooele	0.07	0.34	0.28	0.28	0.22	
Utah	--	--	--	--	--	
Wasatch	--	--	--	--	--	
Regional Totals	0.15	0.29	0.32	0.54	0.46	
Southern Region						
Beaver	0	0.23	0.36	--	0.18	
Garfield	0.15	0.25	0.48	0.48	0.33	
Iron	0.09	0.64	0.40	--	0.38	
Kane	0.67	--	--	0.71	0.17	
Millard	0.22	0.30	0.39	0.28	0.15	
Piute	0.01	0.09	0	0	0	
Sevier	0.18	0.13	0.47	0.58	0.46	
Washington	0.80	0.55	0.61	0.17	0.46	
Wayne	0.08	0.10	0.12	--	0.08	
Regional Totals	0.27	0.32	0.35	0.35	0.25	
Northeastern Region						
Daggett	1.93	0.81	0.60	0.77	0.76	
Duchesne	1.40	0.77	0.68	0.56	0.58	
Uintah	1.00	0.98	0.84	1.56	1.39	
Regional Totals	1.30	0.82	0.68	0.93	0.89	
Southeastern Region						
Carbon	0.05	0.64	0.13	0.13	0.24	
Emery	0.37	0.33	0.17	0.20	0.04	
Grand	0.34	0.16	--	0.14	0.53	
San Juan	0.58	0.64	0.50	0.30	0.97	
Regional Totals	0.39	0.42	0.21	0.25	0.53	
STATE TOTALS	0.35	0.41	0.32	0.50	0.44	

Table 3. Summary of cottontail rabbits young per 100 adults ratios, 1967-71.

Region and County	1967	1968	1969	1970	1971
Northern Region					
Box Elder	94	106	94	95	129
Cache	--	--	0	--	0
Davis	--	--	--	--	--
Morgan	--	100	900	--	25
Rich	125	86	186	40	80
Summit	67	56	33	64	--
Weber	--	--	75	--	--
Regional Totals	104	97	115	76	100
Central Region					
Juab	175	257	239	246	171
Salt Lake	--	--	0	--	--
Sanpete	257	133	311	123	144
Tooele	200	113	127	100	100
Utah	--	--	--	--	--
Wasatch	--	--	--	--	--
Regional Totals	218	179	224	157	145
Southern Region					
Beaver	--	36	56	--	14
Garfield	28	85	138	103	118
Iron	200	75	33	--	162
Kane	129	--	--	28	50
Millard	32	143	22	41	32
Piute	--	0	--	--	--
Sevier	157	22	360	350	390
Washington	271	71	114	22	71
Wayne	100	50	300	--	167
Regional Totals	115	75	85	68	93
Northeastern Region					
Daggett	56	62	34	57	81
Duchesne	142	146	148	131	150
Uintah	231	117	154	203	191
Regional Totals	118	107	77	126	139
Southeastern Region					
Carbon	150	55	122	100	53
Emery	73	238	200	183	100
Grand	106	7	--	160	79
San Juan	45	--	166	228	215
Regional Totals	62	92	161	115	132
STATE TOTALS	106	96	110	102	123

Table 4. Summary of cottontail rabbit hunter success and distribution of harvest and hunting pressure by region and county, 1971.

Region and County	Hunters reporting	Days hunted	Cottontails bagged	Cottontails/hunter-day	Cottontails per hunter*	% of pressure	% of harvest
Northern							
Box Elder	256	746	1703	2.28	6.42	14.03	19.42
Cache	22	58	117	2.02	4.62	1.09	1.33
Davis	22	92	55	0.60	6.84	1.73	0.63
Morgan	30	77	159	2.06	6.25	1.45	1.81
Rich	23	76	145	1.91	10.00	1.43	1.65
Summit	33	162	201	1.24	7.71	3.05	2.29
Weber	11	50	18	0.36	7.47	0.94	0.21
Regional Totals	397	1261	2398	1.90	6.78	23.72	27.35
Central							
Juab	82	214	374	1.75	4.00	4.03	4.27
Salt Lake	26	79	73	0.92	5.19	1.49	0.83
Sanpete	36	149	183	1.23	7.15	2.80	2.09
Tooele	167	483	774	1.60	7.62	9.09	8.83
Utah	138	415	549	1.32	7.06	7.81	6.26
Wasatch	26	153	145	0.95	8.74	2.88	1.65
Regional Totals	475	1493	2098	1.41	6.13	28.09	23.93
Southern							
Beaver	11	52	60	1.15	7.00	0.98	0.68
Garfield	1	5	12	2.40	12.00	0.09	0.14
Iron	23	132	230	1.74	14.31	2.48	2.62
Kane	5	65	13	0.20	6.75	1.22	0.15
Millard	56	188	425	2.26	11.59	3.54	4.85
Piute	8	41	19	0.46	1.00	0.77	0.22
Sevier	32	146	136	0.93	6.41	2.75	1.55
Washington	31	136	211	1.55	6.89	2.56	2.41
Wayne	11	33	52	1.58	15.00	0.62	0.59
Regional Totals	178	798	1158	1.45	8.96	15.01	13.21
Northeastern							
Daggett	25	59	161	2.73	13.75	1.11	1.84
Duchesne	49	285	894	3.14	38.00	5.36	10.20
Uintah	98	525	946	1.80	9.90	9.88	10.79
Regional Totals	172	869	2001	2.30	14.88	16.35	22.82
Southeastern							
Carbon	42	347	217	0.63	8.57	6.53	2.47
Emery	37	193	204	1.06	7.20	3.63	2.33
Grand	13	82	140	1.71	14.47	1.54	1.60
San Juan	21	148	404	2.73	32.56	2.78	4.61
Regional Totals	113	770	965	1.25	12.55	14.48	11.01
Unknown counties	36	121	137	1.13	--	2.28	1.56
STATE TOTALS	1371	5312	8757	1.65	7.78	100.00	100.00

*Based on county of residence

Table 5. Summary of cottontail rabbits bagged per hunter-day by region and county, 1967-71.

Region and county	1967	1968	1969	1970	1971	
Northern						
Box Elder	1.81	3.54	2.29	2.62	2.28	1.48
Cache	1.35	3.00	1.87	2.00	2.02	1.71
Davis	0.78	0.27	1.10	0.56	0.60	0.57
Morgan	1.01	1.02	1.21	1.80	2.06	0.26
Rich	0.07	3.11	2.65	2.62	1.91	3.97
Summit	1.70	1.78	1.40	1.93	1.24	1.19
Weber	1.03	1.16	0.94	1.02	0.36	0.28
Regional Totals	1.49	2.81	2.02	2.41	1.90	1.28
Central						
Juab	1.89	2.58	1.74	2.38	1.75	
Salt Lake	1.33	1.40	0.83	0.94	0.92	
Sanpete	0.80	1.93	1.86	1.72	1.23	
Tooele	1.59	1.62	1.27	1.50	1.60	
Utah	1.19	1.55	1.24	1.11	1.32	
Wasatch	1.21	1.39	0.59	1.80	0.95	
Regional Totals	1.34	1.73	1.30	1.47	1.41	
Southern						
Beaver	2.04	2.06	1.84	1.41	1.15	
Garfield	2.83	2.26	0.96	0.62	2.40	
Iron	1.18	2.82	1.57	0.99	1.74	
Kane	4.04	3.30	0.00	0.75	0.20	
Millard	2.25	2.69	1.34	2.43	2.26	
Plute	4.45	1.33	1.43	1.00	0.46	
Sevier	0.65	2.54	1.09	0.68	0.93	
Washington	0.83	8.00	1.11	1.54	1.55	
Wayne	1.50	4.00	0.79	1.39	1.58	
Regional Totals	1.95	2.59	1.23	1.41	1.45	
Northeastern						
Daggett	3.87	4.08	2.08	2.67	2.73	
Duchesne	3.31	2.40	1.47	2.45	3.14	
Uintah	3.53	3.69	1.95	2.30	1.80	
Regional Totals	3.49	3.39	1.86	2.38	2.30	
Southeastern						
Carbon	1.70	1.47	1.62	1.27	0.63	
Emery	1.98	2.58	1.68	2.22	1.06	
Grand	0.74	1.28	1.26	2.26	1.71	
San Juan	3.35	2.20	1.39	2.04	2.73	
Regional Totals	2.17	1.83	1.52	1.85	1.25	
Unknown counties	0.38	1.03	0.53	1.79	1.13	
STATE TOTALS	1.95	2.42	1.54	1.86	1.65	

Table 6. Distribution of cottontail rabbit harvest by region and county, 1967-71.

Region and county	1967	1968	1969	1970	1971
Northern					
Box Elder	9.80	31.46	28.69	32.46	19.42
Cache	0.86	1.79	1.75	0.85	1.33
Davis	0.36	0.29	0.55	0.27	0.63
Morgan	1.23	1.11	0.63	1.12	1.81
Rich	0.67	1.44	1.89	2.05	1.65
Summit	2.36	2.33	2.59	2.10	2.29
Weber	0.53	1.07	1.45	0.60	0.21
Regional Totals	15.81	39.49	37.58	39.48	27.35
Central					
Juab	4.31	5.24	8.83	6.43	4.27
Salt Lake	2.12	1.15	1.11	1.58	0.83
Sanpete	1.16	1.10	2.78	1.32	2.09
Tooele	5.06	5.55	10.82	9.90	8.83
Utah	6.91	5.95	8.02	7.04	6.26
Wasatch	3.59	2.01	1.49	1.57	1.65
Regional Totals	23.17	21.00	33.08	27.88	23.93
Southern					
Beaver	2.89	0.49	1.26	1.47	0.68
Garfield	0.58	2.07	0.87	0.34	0.14
Iron	1.11	1.46	1.45	1.34	2.62
Kane	1.66	0.87	0.00	0.04	0.15
Millard	1.97	3.96	4.11	3.74	4.85
Piute	0.84	0.16	0.25	0.08	0.22
Sevier	0.44	1.62	1.01	0.60	1.55
Washington	0.17	0.11	2.86	2.74	2.41
Wayne	0.15	0.21	0.41	1.12	0.59
Regional Totals	9.82	10.95	12.45	11.51	13.21
Northeastern					
Daggett	5.63	6.33	2.50	0.57	1.84
Duchesne	12.29	4.41	2.17	4.69	10.20
Uintah	14.49	9.30	6.64	5.63	10.79
Regional Totals	32.41	20.04	11.31	10.89	22.82
Southeastern					
Carbon	4.26	2.48	1.86	2.38	2.47
Emery	6.93	2.70	1.30	3.01	2.33
Grand	0.34	1.03	0.61	2.13	1.60
San Juan	7.05	1.48	0.99	2.33	4.61
Regional Totals	18.58	7.69	4.77	9.86	11.01
Unknown counties	0.20	0.79	0.96	0.35	1.56
STATE TOTALS	100.00	100.00	100.00	100.00	100.00

Table 7. Distribution of cottontail rabbit hunting pressure by region and county, 1967-71.

Region and county	1967	1968	1969	1970	1971
Northern					
Box Elder	10.57	21.53	19.24	23.09	14.03
Cache	1.23	1.44	1.44	0.80	1.09
Davis	0.90	1.89	0.77	0.90	1.73
Morgan	2.37	2.63	0.81	1.17	1.45
Rich	1.87	1.12	1.10	1.46	1.43
Summit	2.70	3.18	2.85	2.02	3.05
Weber	1.00	2.25	2.37	1.09	0.94
Regional Totals	20.65	34.04	28.61	30.56	23.72
Central					
Juab	4.44	4.91	7.79	5.04	4.03
Salt Lake	3.10	1.99	2.06	3.14	1.49
Sanpete	2.84	1.38	2.29	1.44	2.80
Tooele	6.20	8.28	13.06	12.29	9.09
Utah	11.34	9.30	9.96	11.89	7.81
Wasatch	5.77	3.50	3.89	1.62	2.88
Regional Totals	33.69	29.36	39.09	35.44	28.09
Southern					
Beaver	2.77	0.58	1.06	1.94	0.98
Garfield	0.40	2.21	1.40	1.04	0.09
Iron	1.83	1.25	1.42	2.53	2.48
Kane	0.80	0.64	0.23	0.10	1.22
Millard	1.70	3.56	4.71	2.88	3.54
Piute	0.37	0.29	0.27	0.16	0.77
Sevier	1.33	1.54	1.42	1.65	2.75
Washington	0.40	0.03	3.95	3.33	2.56
Wayne	0.20	0.13	0.81	1.52	0.62
Regional Totals	9.81	10.23	15.30	15.17	15.01
Northeastern					
Daggett	2.84	3.75	1.85	0.40	1.11
Duchesne	7.24	4.46	2.27	3.57	5.36
Uintah	8.01	6.10	5.25	4.56	9.88
Regional Totals	18.08	14.31	9.37	8.53	16.35
Southeastern					
Carbon	4.87	4.07	1.77	3.49	6.53
Emery	6.84	2.53	1.19	2.53	3.63
Grand	0.90	1.96	0.75	1.76	1.54
San Juan	4.10	1.64	1.10	2.13	2.78
Regional Totals	16.71	10.20	4.82	9.92	14.48
Unknown counties	1.07	1.86	2.77	0.37	2.28
STATE TOTALS	100.00	100.00	100.00	100.00	100.00

Table 8. Summary of the monthly distribution of cottontail harvest and hunting pressure each year from 1968 through 1971.

Month	Percent of Harvest				Percent of Hunting Pressure			
	1968	1969	1970	1971	1968	1969	1970	1971
September	6.3	7.8	7.6	7.1	6.5	7.0	8.1	7.0
October	12.0	11.5	11.3	12.8	14.1	12.2	12.4	14.4
November	22.6	24.6	21.2	22.7	21.4	23.3	21.8	21.1
December	28.6	24.2	25.7	26.2	25.0	24.1	22.7	23.4
January	20.0	19.9	21.2	19.4	20.9	20.0	20.0	19.1
February	9.2	9.6	10.4	8.7	11.7	10.8	11.5	10.8
March	1.2	2.4	2.6	3.1	1.2	2.6	3.4	4.2

Table 9. State-wide summary of cottontail rabbit harvest statistics, 1967-71.

Year	Total hunters	Total harvest	Hunter days afield	Cottontail per hunter-day	Cottontails* per hunter
1967	23,349	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	1.88	7.97
1971	30,824	239,511	145,287	1.65	7.78
TOTALS (1967-71)	135,308	1,026,055	554,415	1.85	7.58
AVERAGES (1967-70)	26,121	196,636	102,282	1.92	7.53

*Based on county of residence.

Table 10. Cottontail Field Bag Check Summary, 1971.

Region and County	ALL HUNTS				COMPLETE HUNTS				Rabbits/100 hrs. Hunter
	Total Parties	Total Hunters	Total Hours	Total Rabbits/100 hrs.	Total Hunters	Total Hunts	Total Hours	Total Rabbits/100 hrs. Hunter	
Northern Region									
Box Elder	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--
Morgan	9	18	32	11	3	1	6	5	83
Rich	2	3	5	10	3	2	5	10	200
Summit	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--
Regional Totals	11	21	37	21	6	3	11	15	136
Central Region									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	40	157	321.5	60	11	11	151.5	33	22
Tooele	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--
Regional Totals	40	157	321.5	60	11	11	151.5	33	22
Southern Region									
Beaver	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--
Kane	1	2	8	2	2	1	8	2	25
Millard	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	1	2	8	3	2	1	8	3	38
Regional Totals	2	4	16	5	4	2	16	5	31
Northeastern Region									
Daggett	25	64	122	145	15	15	85	76	89
Duchesne	20	75	199	41	7	7	93	22	24
Uintah	20	46	77	42	9	9	50	23	46
Regional Totals	65	185	398	228	31	31	228	121	53
Southeastern Region									
Carbon	13	28	70	41	8	8	45	31	69
Emery	4	12	12	2	1	1	5	1	20
Grand	14	25	53	37	8	8	42	32	76
San Juan	7	16	36	16	2	2	10	5	50
Regional Totals	38	81	171	96	19	19	102	69	68
STATE TOTALS	156	448	944	410	66	66	508	243	48

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Table 11. Cottontail hunter success trend determined by field bag checks, 1966-71.

Region and County	1966		1967		1968		1969		1970		1971	
	Bag/ 100 hrs. Hunter	Bag/ Hunter										
Northern Region												
Box Elder	--	--	8	0.33	40	4.23	31	1.55	85	2.12	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	33	0.50	34	1.67
Rich	--	--	45	0.86	53	1.17	--	--	57	2.11	200	3.33
Summit	69	0.91	38	1.22	72	2.93	--	--	56	1.33	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
Regional Totals	69	0.91	27	0.79	48	3.35	31	1.55	56	1.44	57	2.50
Central Region												
Juab	--	--	--	--	--	--	223	4.14	--	--	--	--
Salt Lake	--	--	--	--	18	1.00	--	--	--	--	--	--
Sanpete	5	0.13	25	0.40	25	0.70	13	0.44	15	0.54	19	0.57
Tooele	72	1.83	--	--	25	0.79	92	2.40	21	0.88	--	--
Utah	--	--	83	2.50	6	0.25	50	0.50	--	--	--	--
Wasatch	21	1.11	19	0.40	18	--	--	--	21	0.75	--	--
Regional Totals	12	0.36	24	0.40	23	0.70	20	0.54	16	0.59	19	0.57
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	52	1.20	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	25	1.00
Millard	--	--	--	--	--	--	--	--	15	0.30	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	383	3.83	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	38	1.50
Regional Totals	--	--	--	--	--	--	--	--	34	1.52	31	1.25
Northeastern Region												
Daggett	--	--	171	5.56	72	3.72	66	2.00	58	1.84	119	1.58
Duchesne	--	--	102	4.75	26	0.95	15	0.80	31	0.95	21	0.85
Uintah	180	5.70	159	2.58	64	0.86	27	0.92	112	2.28	55	1.15
Regional Totals	180	5.70	135	3.94	51	2.84	32	1.17	57	1.72	57	1.29
Southeastern Region												
Carbon	--	--	--	--	97	1.50	--	--	77	4.00	59	1.94
Emery	49	2.30	--	--	147	2.66	--	--	--	--	17	0.20
Grand	42	1.20	--	--	--	--	--	--	--	--	70	2.13
San Juan	83	1.40	--	--	--	--	--	--	33	4.00	44	1.25
Regional Totals	69	1.70	--	--	140	2.44	--	--	43	4.00	56	1.72
STATE TOTALS	43	1.33	92	2.67	54	2.00	29	1.16	42	1.32	43	1.20

APPENDIX

Table 1. State-wide temperature and precipitation departures from normal as determined by averaging similar values for the seven weather divisions in Utah, 1960-71.

Year	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
1960	Temp.	-2.8	-3.7	+3.1	+0.7	0	+1.6	-0.3	+2.4	-1.5	+1.4	-0.7
	Precip.	+0.30	+0.47	-0.37	-0.26	-0.40	-0.51	-0.65	+0.24	+0.56	+0.41	-0.81
1961	Temp.	+2.59	+5.37	+1.27	+1.27	+0.47	+1.21	+0.97	-5.56	-2.76	-3.24	-3.37
	Precip.	-0.88	-0.45	+0.48	-0.32	-0.40	-0.02	+0.80	+1.29	+0.42	+0.09	-0.27
1962	Temp.	-3.44	+1.86	-4.51	+3.00	-1.87	-0.77	-1.04	+0.27	+1.53	+4.39	+0.70
	Precip.	-0.05	+1.18	-0.08	-0.30	+0.16	-0.18	-0.81	+0.24	-0.33	-0.51	-0.84
1963	Temp.	-4.71	+8.01	-0.83	-4.14	+2.87	+0.21	+0.21	+1.64	+4.26	+2.17	-2.96
	Precip.	-0.26	-0.22	-0.20	+0.84	-0.73	+0.36	+0.89	+0.70	-0.33	+0.25	-0.83
1964	Temp.	-1.81	-4.37	-6.49	-3.20	-1.80	-2.59	-1.54	-2.46	+1.73	-3.61	-0.31
	Precip.	-0.48	-0.91	+0.02	+0.54	+0.54	+0.68	-0.28	-0.35	-0.93	+0.45	+0.97
1965	Temp.	+4.07	+0.07	-3.59	-1.50	-4.03	-3.70	-2.07	-7.20	+1.37	+5.19	-0.06
	Precip.	-0.16	-0.31	-0.21	+0.89	+0.47	+0.60	+0.53	+0.84	-0.61	+1.02	+0.71
1966	Temp.	-0.21	-3.33	+1.51	-0.54	+2.54	+0.24	+0.71	+0.53	-2.20	+3.97	-3.60
	Precip.	-0.74	-0.13	-0.79	-0.48	-0.15	-0.47	-0.13	+0.13	-0.19	-0.12	+1.10
1967	Temp.	+0.47	+1.84	+3.47	-4.96	-2.34	-3.76	+1.54	+0.06	+0.39	+3.80	-7.19
	Precip.	+0.25	-0.79	-0.30	+0.14	+0.59	+1.15	-0.27	+0.74	-0.71	-0.16	+0.54
1968	Temp.	-3.33	+4.53	+2.90	-4.87	-1.80	+0.64	-0.49	-3.10	-0.99	-0.26	-4.11
	Precip.	-0.62	+0.35	-0.00	+0.59	+0.18	+0.29	+0.02	-0.50	-0.32	-0.34	-0.09
1969	Temp.	+5.36	-1.11	-4.76	+0.21	+4.14	-2.54	+0.04	+3.03	+1.80	-6.59	+1.91
	Precip.	+1.36	+1.22	-0.58	-0.22	-0.59	+1.17	+0.10	-0.21	-0.01	+0.32	-0.29
1970	Temp.	+3.04	+6.93	-1.17	-6.50	+0.09	-0.06	-0.31	+2.09	-4.70	+2.06	-1.49
	Precip.	-0.17	-0.58	+0.06	-0.05	-0.51	+0.66	+0.33	-0.03	+0.34	-0.18	+0.68
1971	Temp.	+2.96	+1.61	-0.57	-1.66	-2.97	+0.39	+0.59	+1.53	-4.61	-4.93	-5.19
	Precip.	-0.49	+0.02	-0.50	+0.28	+0.40	-0.29	-0.49	+0.58	-0.13	+1.23	+0.65

Table 2. Number and percent of total upland game hunters afield who reported hunting each game species during 1964-1971.

Species	Number of Hunters							Percent of Total								
	1964	1965	1966	1967	1968	1969	1970	1971	1964	1965	1966	1967	1968	1969	1970	1971
Pheasant	88242	77409	78721	85664	90453	90573	78585	87878	97.2	96.7	96.3	96.6	95.4	94.8	87.6	87.7
Chukars	16090	16431	17133	17485	20744	22529	18013	17917	17.7	20.5	21.0	19.7	21.9	23.6	20.1	17.9
Mourning doves	19829	18710	20594	25161	25105	29131	23908	26064	21.8	23.4	25.2	28.4	26.5	30.5	26.7	26.0
Sage grouse	4362	3243	2612	5336	9115	12894	12036	12893	4.8	4.0	3.2	6.0	9.6	13.5	13.4	12.9
Forest grouse	6487	6005	6683	9420	13061	12523	12775	13363	7.1	7.5	8.2	10.6	13.8	13.1	14.2	13.3
Quail	8951	7163	6465	8455	9302	9160	6141	8039	9.8	8.9	7.9	9.5	9.8	9.6	6.8	8.0
Hungarian part.	4249	4498	4549	6321	6935	5591	4128	4276	4.7	5.6	5.6	7.1	7.3	5.8	4.6	4.3
Wild turkey**	211	207	187	184*	634*	477*	174	389*	0.2	0.2	0.2	0.2	0.7	0.5	0.2	0.4
Cottontail***	--	--	--	23349	26889	29760	24486	30824	--	--	--	27.2	28.4	31.2	27.3	30.8
Total hunters	90820	80035	81760	88639	94814	95483	89657	100183								

*Includes both spring and fall hunts.

**Although wild turkey harvest was determined by separate questionnaire, it is assumed that these hunters are derived from the same group of hunters who reported hunting other upland game bird species.

***Of the total 30,824 cottontail hunters, 7,644 did not hunt upland game birds.

Table 3. Season framework for upland game during 1971.

Species	Season dates	Daily bag limit	Possession limit	Area open
Pheasant	Nov. 13-28	3 cocks	6 cocks	State-wide except Salt Lake and Utah counties.
	Nov. 13-21	3 cocks	6 cocks	Salt Lake and Utah counties.
	Nov. 13-Dec. 12	3 cocks	6 cocks	All State and Federal lands subject to restrictions or closures imposed by administering agencies.
Mourning dove	Sept. 1-30	10	20	State-wide
Chukar	Sept. 25, 1971 to January 15, 1972	8	16	State-wide
Sage Grouse	Sept. 25-Oct. 1	3	6	Beaver, Garfield, Iron, Kane, Millard, Piute Sevier, and Wayne counties.
	Sept. 25-Oct. 1	2	4	Daggett, Duchesne, Grand, San Juan, Summit, Uintah, and West Box Elder.
	Sept. 25-Oct. 1	1	2	East Box Elder, Cache, Carbon, Davis, Emery, Morgan, Rich, Sanpete, Tooele and Weber counties.
The following counties were closed to sage grouse hunting during 1971:				Juab, Salt Lake, Washington, Wasatch, and Utah except drainages of the Price River.
Forest Grouse	Sept. 25-Nov. 30	4 aggregate	8 aggregate	State-wide
Quail	Nov. 13-Dec. 12	8	16	State-wide except Washington County.
	Nov. 13, 1971 to January 2, 1972	8	16	Washington County.
Hungarian partridge	Sept. 25, 1971 to January 15, 1972	8	16	State-wide
Wild turkeys				
Spring hunt	May 1-16	Season limit 2 gobblers		Beaver, Garfield, Grand, Iron, Kane, Piute, Sevier, Washington and Wayne counties. Also San Juan County north and east of U. S. Highway 160, Highway 46 and the Lisbon Valley Road.
Fall hunt	Sept. 25-Oct. 17	Season limit 2 turkeys		Same as above
Cottontail	Sept. 25, 1971 to March 1, 1972	10	20	State-wide