

UTAH

UPLAND GAME

Annual Report

1991

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and

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PUBLICATION NO. 92-11

Annual Performance Report for Federal Aid Project W-65-R-39 Job A-4 Utah Department of Natural Resources DIVISION OF WILDLIFE RESOURCES

An Equal Opportunity Employer

Timothy H. Provan Director

"FINDING OUT HOW MANY THERE ARE LEFT <u>EFT IS</u> CENSUS. THE LEAST PURPOSES OF GAME **OF** THE IONS RESPONSE **OF** GAME MEASURI NG ΡΛ P THE **O**R ΤÔ NGES BERATE ACCI DEN _ D CHA PURPOSE. IS THE BIG ĪN ΕN TRO MENT **ARDSTICK** OF IS CENSUS THE CON NUOUS 11 **SUCCESS** ION. CONSERVA URE ΤN OR FΔ

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JOB PERFORMANCE REPORT

RESEARCH PROJECT SEGMENT (Inventory)

State: <u>UTAH</u>	Project Title: <u>Statewide Wildlife</u> <u>Management Inventory</u>
Project No.: <u>W</u>	<u>-65-R-39</u>
Job Title: Job No.:	<u>Statewide Upland Game</u> A-4
Period Covered:	October 1, 1990 to September 30, 1991
Abstract:	This report includes upland game inventory and harvest data collected during 1990-91. Results of annual inventory and harvest surveys and long-term trends of indices derived by each method are included in the final report. Data obtained in 1991 are compared to 1990 and long-term averages.
Objectives:	 Conduct efficient breeding and production surveys. Determine annual harvest, hunters, hunter-days and success rates. Inventory critical seasonal habitat.
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, 1990 through February 10, 1991, as snow cover conditions allowed. Indices derived include hen-cock ratios and pheasants observed per 100 hours. Annual summer roadside counts (three or more per route) were conducted from July 22-August 22 on permanently established routes. Indices derived include pheasants per mile, young per mile, young per hen, mean brood and percent of hens with young.
	Mourning dove breeding population trend was determined via

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

Random brood counts were conducted on chukar and gray partridge, forest grouse (ruffed and blue), sage grouse, sharp-tailed grouse, wild turkey and quail from June 15-August 22. Indices derived for each species include mean brood size, young per 100 adults and birds observed per 100 hours of effort.

Sage grouse strutting ground counts and sharp-tailed grouse dancing ground counts were conducted from March 15-May 15. Total cocks counted, average cocks per ground and percent change from 1990 for comparable grownds were determined on a county basis. The Gambel's quail long period waterhole counts were completed in July and August. Limited valley quail random brood counts were made in several counties.

Cottontail rabbit roadside counts were conducted over preestablished routes between July 15 and August 22. Indices derived include rabbits per mile and young per 100 adults.

Harvest questionnaires were mailed to determine the harvest of upland game birds, cottontail rabbit, and snowshoe hare. A sample of eligible licensees from the current year's (1991) resident small game license file and 1991 combination license file was used. The modified computerized pull-apart mailer was again used to obtain harvest data. Separate questionnaires were mailed to all band-tailed pigeon, ptarmigan and wild turkey permittees. Indices derived include total hunters, hunter-days, total harvest and hunter success per day, plus success for each season.

The upland game questionnaires were processed by the Division of Wildlife Resources Information Systems Services Subsection. General upland game questionnaires as well as band-tailed pigeon, wild turkey and ptarmigan questionnaires were analyzed by Game Management Section personnel.

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

Recommendations:

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

INTRODUCTION

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

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

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

During 1991, a total of 61,922 Utah sportsmen spent 435,726 days afield in pursuit of various upland game species (Table 1). The harvest of upland game totaled 452,664 animals. The proportion of the total upland game hunters which pursued each species is shown in Table 2 and the percentage failing to bag at least one bird (from general mail questionnaire) of each species in Table 3. The regulations for 1991 upland game hunting seasons are shown in Appendix D.



	Hunters	Total	Hunter	Bag Per	Bag/Hunter
Species	Afield	Harvest	Days	Hunter-Dav	For Season
Pheasant	42,813	72,612	150,096	0.48	1.70
Mourning dove	22,632	178,853	78,405	2.28	7.90
Chukar partridge	10,577	24,355	34,010	0.72	2.30
Sage grouse	8,018	12,542	18,596	0.67	1.56
Forest grouse	14,421	34,897	42,517	0.82	2.42
Ouail	2,644	5,775	7,393	0.78	2.18
Hungarian partridge	2,662	7,376	8,367	0.88	2.77
Wild turkey	532	59	1,792	0.03	0.11
Band-tailed pigeon	15	31	20	1.50	2.10
Sharp-tailed grouse					
White-tailed ptarmigan	13	26	16	1.63	2.00
Cottontail rabbit	21,137	111,407	82,772	1.35	5.27
Snowshoe hare	3,427	4,731	11,742	0.40	1.38
TOTAL		452,664	435,726		

Table 1. Summary of harvest statistics from the general mail questionnaire for 1991.

GENERAL HARVEST QUESTIONNAIRE

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

A total of 15,054 upland game questionnaires, a 13.93 percent sample, were mailed. Of the total, 661 (4.39%) questionnaires were undeliverable. Of the 14,393 questionnaires delivered, 6,212 (43.16%) useable upland game questionnaires were returned. Of those, 2,655 purchased a license but did not hunt upland game. By dividing the total of 108,067 eligible licensees by the usable returns (6,212), a projection factor of 17.396491 is derived.

The 1991 hunter questionnaire sample size increased from 1990, so a follow-up questionnaire was not sent to those who failed to return the first one. A high rate of return is desirable in order to obtain an adequate sample of harvest estimates in counties where hunting pressure and harvest are limited. Extremely small samples from these counties tend to over estimate the harvest and thus bias the results. Although harvest, number of functions and days-afield may be over-estimated where small samples are obtained, harvest per hunter-day should be relatively precise.

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Table 2. Number and percent of total upland game hunters afield who reported hunting each species during 1984-91.

•	•			Number o	ber of Hunters							Percent of Total	Total			
Species	1984	1985	1986	1987	1988	1989	1990	1991	1984	1985	1986	1987	1988	1989	1990	1991
Phessant	76.840	688,69	59,987	57,118	54,514	50,382	47,025	42,813	86.90	86.20	84.20	83.80	77.70	75.20	72.50	69,14
Mourning Dove	30.573	28.183	26,583	22,553	22,457	21,696	22,700	22,632	11.10	9.80	13.20	16.50	16.00	16.30	17.30	36.55
Chukar	9.846	7.930	9,397	11.276	11,237	10,910	11,195	10,577	34.60	34.70	37.30	33.00	32.00	32.40	35,00	17.08
Sage Grouse	8.283	7.586	7,233	7,060	8,499	9,002	9,014	8,018	9.40	9.40	10.20	10.40	12.10	13.40	13.90	12.95
Farest Grouse	11.511	12.645	12.117	14,831	16,947	16,988	14,591	14,421	13.00	15.60	17.00	21.80	24.20	25.40	22.50	23.29
Ouail	3.654	3,065	2,432	2,549	2,671	3,111	2,614	2,644	4.10	3.80	3.40	3.70	3.80	4.60	4.00	4.27
- Hungarian Partridge	1.523	1.157	1.257	2.010	2,471	2,136	2,305	2,662	1.70	1.40	1.80	2.90	3.50	3.20	3.60	4.30
Wild Turkey**	155	270	335	347	421	477	531	532	0.30	0.30	0.50	0.50	0.60	0.70	0.80	0.86
Sharp-Tailed Grouse**	1	1		I,	:		1	I		-	:		1	ļ		
Band-Tailed Pigeon ^{4,*}	i	i	à	;	Π	13	6	15	ł	0.10		Ĩ	0.00	0.03	0.01	0.02
White-Tailed Ptarmigan**	20	2	14	6	15	ŝ	Π	13	0.02	0.02	0.02	0.01	0.02	0.00	0.02	0.02
Cottontail Rabbit	18,616	14.059	13,992	20,322	24,076	22,878	23,079	21,137	21.10	17.30	19.60	29.80	34.30	34.20	35.60	34.13
Snowshoe Hare	3,796	3,365	3,277	3,702	4,725	4.895	4,095	3,427	4.30	4.10	4.60	5.40	6.70	7.30	6.30	5.53
Total Hunters***	88,431	81,119	71,259	68,174	70,142	67,017	64,868	61,922								
 Includes both spring and fall bunts. 	fall bunts.		-					÷								

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

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

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

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

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

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

RING-NECKED PHEASANT

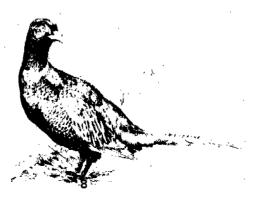
SUMMARY

The 1990-91 winter was slightly colder and drier than normal and survival of brood stock should have been good. Vegetation continues to return to inundated mud flats around the Great Salt Lake after the flooding of 1984. Aquatic vegetation such as cattails and bulrushes conducive to winter survival or pheasants is re-establishing noticeably.

Weather conditions during the nesting season were questionable in 1991. Statewide monthly average temperatures were at or above normal; average precipitation was above normal across several climatic subdivisions in May. Temperatures were at or above normal through the rest of the year and precipitation was scatterd and sparse. Pheasants observed on roadside routes was below 1990, but more hens appeared to have young. Overall, production was slightly up.

Harvest statistics compiled from the questionnaire indicated the same success compared to 1990. Overall, harvest declined and was below average, resulting in the lowest recorded values since 1950. Opening weekend success was up compared to the previous year based upon field bag check data and despite cold, windy and snowy hunting conditions.

Hunters did not react to reduced pheasant populations in a strongly density dependent fashion. While they hunted fewer days or not at all, the reduction in hunters and days hunted was not in direct proportion to the reduction in harvest.



Results of the survey for the winter of 1990-91 and long-term trends are shown in Tables 1, 2 and Figure 1 of this section. Statewide comparisons to the winter of 1989-90 and the 10-year (1981-90) average are as follows:

	Winter of	<u>Percent ch</u>	ange from
	<u>1990–91</u>	<u>1989-90</u>	<u>Average</u>
Total pheasants counted (roadside)	844	- +77	-75
Hens per cock	2.65	+56	-28
Pheasants observed per 100 hours	1,468	+152	+3
Total hours effort (roadside)	59	-28	-71

Winter sex ratio counts indicated a 152 percent increase in pheasants observed per unit of effort. However, density estimates can be biased due to the non-random nature of the survey technique if effort is minimal. The hen-cock ratio increased 56 percent from 1990 and was 28 percent below the long-term average. Access was good, but the lack of snow kept birds scattered. Less than average effort also reduced pheasant observations. No effort was expended in the Southeastern Region.

Roadside Counts

A summary of summer roadside pheasant counts for 1991 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 and Figure 2. Summer 1991 survey results compared to 1990 and the previous 10-year (1981-90) average follow:

			Percent	<u>change</u> from	,
	<u>1991</u>	1 ·	<u>1990</u>	Average	
Total pheasants observed	793	41 - 12	1-23/19/20	-62	1.8
Total miles driven	1,566	·	1 48	-25	
Pheasants per mile	0.51		-28	- 47 - 4-214	i i i
Average brood size	4.61		-4	-11 小能的	
Young per hen	3.81	:	+3	-3 4 44	
Percent of hens with young	79	3 *	+4 😚 👌	+6 🖷 👘	1 17
		* · ·		·····	•

December 1990 through January 1991 temperatures were below normal. The average monthly temperatures of all reporting stations in the seven climatic subdivisions in Utah were 4.1 degrees below normal in January (Appendix A). Temperatures in April, May and June were just below normal. Precipitation was below normal during April and June and slightly above normal in March and April. Temperature was below normal and precipitation slightly above normal during the critical month of May. Could, wet weather may have affected brood success. Below average accumulated precipitation continued through December, January and February resulting in drought over most of the state. Average temperatures throughout the state were at or above average July through October. Brood survival may again have declined due to hot, dry weather during July through August.

Pheasant production increased from 1990 in Utah. The statewide density index (pheasants per mile) decreased (0.51) in 1991, and is 47 percent below the 10-year average.

Vegetation is re-establishing on alkaline soils around the Great Salt Lake. This should increase both the quantity and quality of wintering, nesting and brood-rearing habitat in Box Elder, Salt Lake, Davis and Weber counties.

<u>Harvest</u>

Hunter Questionnaire

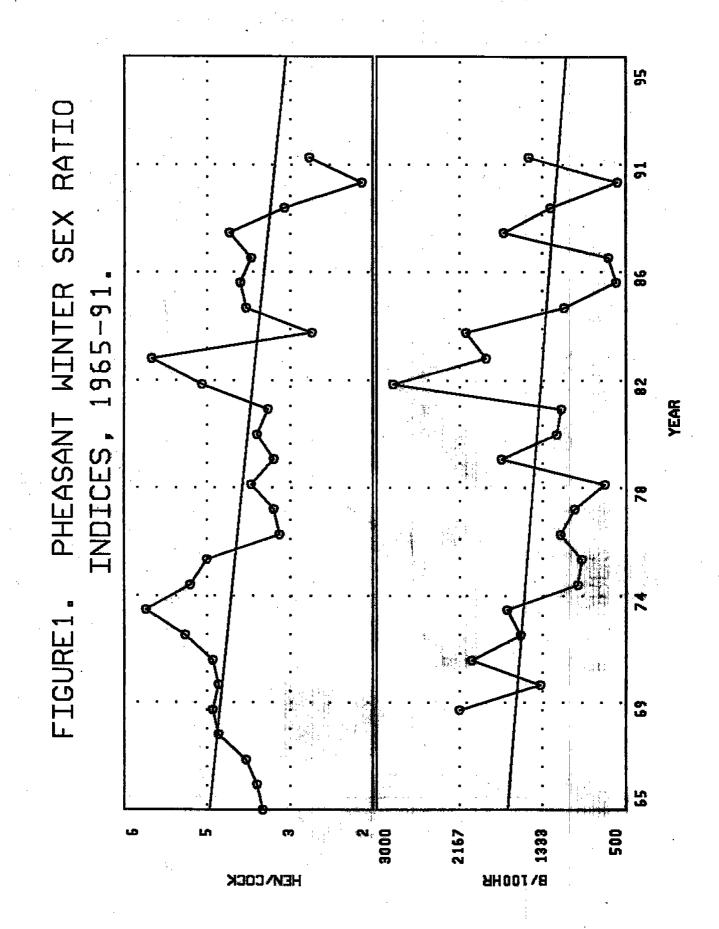
Results of the hunter questionnaire for 1991 are shown in Table 9. Long-term trends of pheasants bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 10-12, and total statewide harvest statistics in Table 13. A comparison of 1991 harvest statistics to 1990 and the previous 43-year average follow:

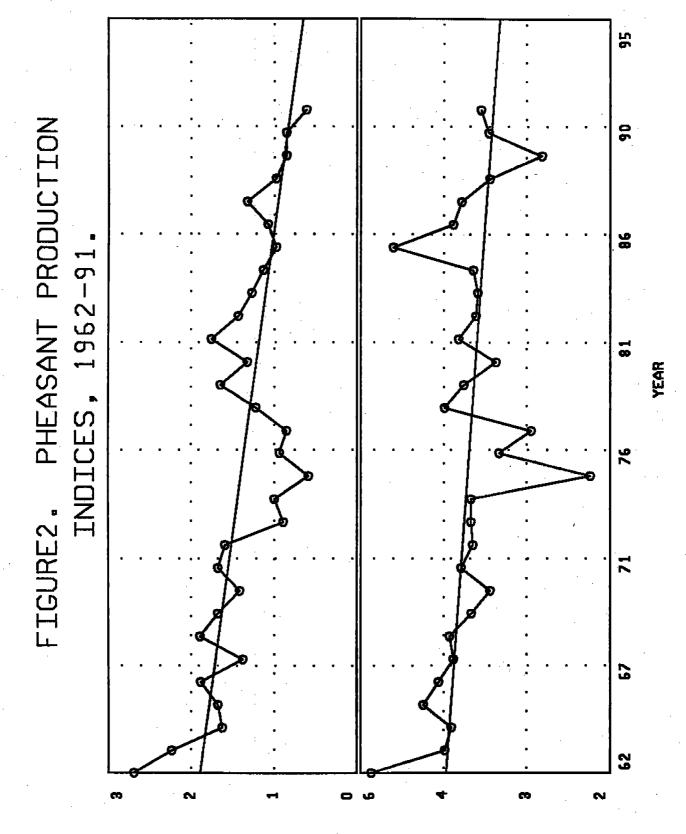
	· · · ·	Percent	<u>change from</u>
:	<u>1991</u>	1990	<u>Average</u>
Pheasant hunters	42,813	9	-46
Pheasants harvested	72,612	-8	-66
Hunter-days afield	150,096	-7	-33
Pheasants per hunter-day	0.48	~1	-50
Pheasants per hunter	1.70	+1	-36

Hunters were told to expect poor hunting with slight improvement in hunter success compared to 1990. Low breeding populations were noted. Production was slightly below average for those birds which made it through the winter. We predicted 55,000 hunters and 70,000 harvest.

Total hunters again decreased (9 percent) from 1990 and remained below the long-term (1948-90) average. Total harvest decreased 8 percent from 1990. Hunter success (pheasants per hunter-day) decreased 1 percent from 1990. Pheasants per hunter increased (1 percent), but remains 36 percent below the long-term average.

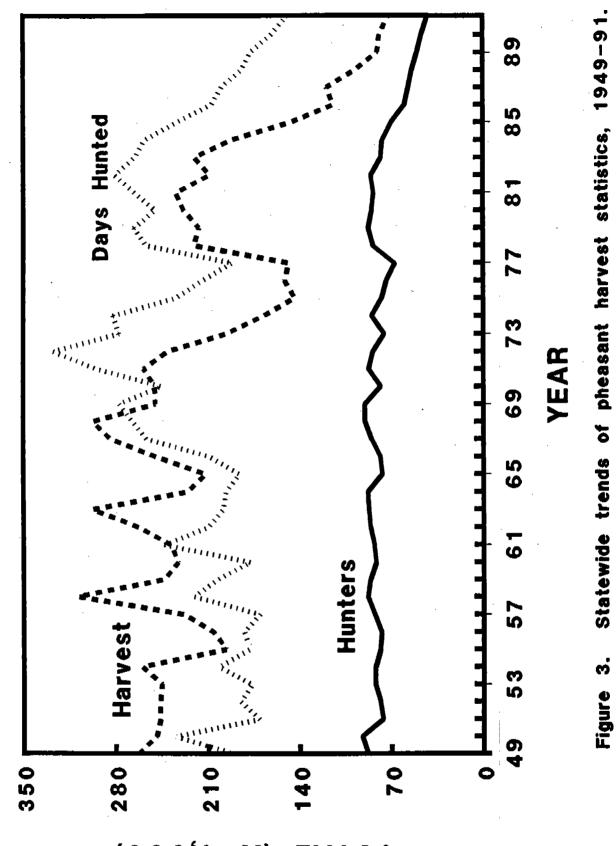
Long-term trends (1948-91) of total hunters, hunter-days, harvest and hunter success are shown in Figures 3 and 4. Generally, the recent trend is toward less hunter-days with declines in total pheasants harvested and hunter success. We believe this is the result of the accumulated effects of loss of quantity and quality of habitat due to urbanization, flooding, modern agricultural practices, and habitat fragementation resulting in increased predation.

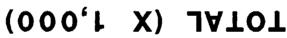


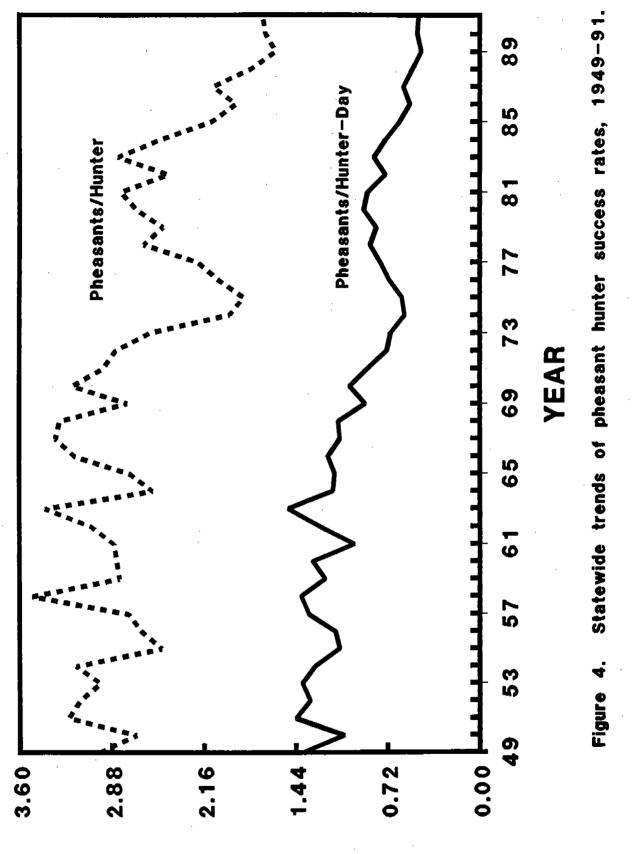


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Field Bag Checks

A summary of pheasant field bag check data for 1991 is shown in Table 14. The hunter success trend determined via bag checks since 1986 is found in Table 15 and Figure 5. A comparison of 1991 data, on a statewide basis, to 1990 and the previous 10-year (1981-90) average follow:

	<u>1991</u>	<u>Percent</u> <u>1990</u>	<u>change from</u> <u>Average</u>
Total hunters checked	217	-87	-93
Total hours hunted	570	-89	-94
Pheasants per hunter			
(complete hunts)	0.42	+17	-19
Pheasants bagged per 100 hours	16	+33	+10
Average hours per hunter-day			
(complete hunts)	2.63	-17	-24
Hours hunted per pheasant bagged (complete hunts)	6.26	-28	-14

On opening day, weather conditions were cold, windy and snowy.

Hunting pressure was down in most of Utah. This is attributed to decreasing pheasant populations and to less land being accessible to hunters.

Although hunter pressure and numbers decreased from 1990, persistent hunters seemed to be successful in taking birds and spent less time doing so.

Statewide hunter success was up compared with 1990 through the entire season.

Table 1. Summary of pheasant winter ser ratio counts, 1990-91.

LANKE 14 JUNIOR OF DIRESSAUL WILLER SEE FRUD COUNTS, 1996-9		uer ser ra	190 COUN	1641 3	.1.							2			
,			Net venu				r ausonig Unservations	DATES	SUOI		2	Ettort Expended	ended		Pheas. Obs./
Region and				Hens/	Cocks/				llens/	Cocks/	Vehicle	llou	llours of Effort	lort	100 Hours of
County	Cncks	Hens	Total	Cock 1	Cock 100 Hens	Cocks	Hens	Total	Ceck	100 Hens	Miles	Vehicle	Walk	Total	Road. Obs.
Northern Region															
Rox Elder	30	74	104	2.47	41	1	ł	I	1	1	1	;	1	I	1
Cache	-	24	31	3.43	29	I	1	ł	ł	1	;	ł	I	1	I
Davis	10	69	61	6.9	14	T	4	ŝ	4.00	25	111	Ŷ		7	1.317
Morgan	1	ł	ł	ł	ł	ì	1	1	ł	:	:	1	· 1	. ;	
Rich	1 -	1	I	I	1	:	ł	ł	ł	I	;	ŧ	;	1	· 1
Summit	I	1	1	I	1	1	ł	I	ł	ł	1	!	ł	ł	:
Weber	•	28	37	3.11	32	I	ł	:	;	;	ı		1	:	
REGIONAL TOTALS	26	195	251	3.48	29	_	4	S	4.00	25	Ξ	6	-	F	4.183
Central Region															
Juah	6	32	41	3.56	28	1	ł	I	;	I	æ	7	1	2	2.050
Salt Lake	11	19	30	1.73	58	1	:	1	!	1	65	un	;	un un	909
Sanpele	:	I	ł	1	1	1	ł	I	;	I	1	I	I	• 1	, , ,
Tonele	I	1	I	ł	;	1	1	I	ł	I	I	!	1	1	
Utah	¥	222	368	4 0K	30						164		ł	•	
Wasatch)	1	i	Ŗ	2 1	1 1		1	1	I	0.01	<u>ה</u>	I.	q	1,187
REGIONAL TOTALS	5	274	110	4 77	14							; ;	;	، ا :	
Southern Region											(and			4	1401
Beaver	1	1	1	I	1	I	1	I	:	t	1	ł	1	1	1
Iron	I	1	1	:	:	ı	ł	I	:	4	1	I	:	1	1
Kane	1	1	1	ł	I	I	1	I	1	1	I	I	I	I	I
Millard	19	42	61	2.21	45	90	11	19	1.38	£	35	6 23	I	-	2.033
Piute	1	I	I	ı	ł	ł	I	ł	1	ı	1	;	I	1	1
Sevier	ł	I	I	ı	1	1	1	1	I	ı	1	1	I	I	ı
Washington	1	I	I	1	1	ł	ł	1	I	1	1	1	1	I	I
Wayne	1	1	1	I	ł	ł	ł	I	1	I	I	1	1	1	ı
REGIONAL TOTALS	19	42	61	2.21	45	œ	=	1	1.38	73	35	•	•		2.033
Northeastern Region															
Daggett	I	.1	I	1	ł	ł	;	ł	1	1	ı	ł	I	:	
Duchesne	13	21	33	1.75	-ST	ł	:	I	I	. 1	276	17	I	17	200
Uintah	79	81	160	1.03	98	1	ł	ł	;	1	158	10	1	10	1,600
REGIONAL TOTALS	91	102	193	1.12	8	1	,	;	1	1	434	27	1	27	728
Southeastern Region															
Carbon	1	I	i I	1	1	1	;	1	1	t	1	:	1	t	t
Emery	ı	1	I	1	ł	1	;	1	1	1	1	1	I	1	I
Grand	. 1	I	1	ł	1	ł	I	;	1	ł		I	I	ſ	I
San Juan	1	ı	1	1	1	1	t	ſ	1	:	ı	1	I	1	I
REGIONAL TOTALS	:		1	1	1	.	,	1	1		.	1	1	,	
STATE TOTALS	231	613	844	2.65	38	0	15	24	1.67	8	808	5	-	8	1.468
			;		2					22	200	3	-	5	1977 L

1985-866	1985-86		19-06-01		00-10/1		X0-00/F		N-4041		14-0461			
Region and	[lena/	Birds/	Hens/	Birds/	Hens/	Birds/	Hens/	Birds/	llens/	Birds/	Hens/	Birda/	Ачетаде	
County	Cock	100 IIr	Cock	100 Hr	Cock	100 Hr	Cock	100 ILr	Cnek	- 100 Hr	Cock	£00 XIr	1985-1990	
Nørthern Region														
Box Flder	2.40	1,453	5.80	524	4.80	2,409	4.20	3,100	3.60	533	2.50	:		
Cache	17.20	585	6.80	168	4,30	390	2.70	386	1.30	253	3.40	ı		
Davia	8.40	4,683	7.50	340	11.30	2,667	7.30	2,014	1.50	143	6.90	1,317		
Morgan	ł	1	ł	ł	1	;	ł	:	I	I	:	;		
Rich	I	;	ł	ł	:	1	ł	1	:	1	1	ł		
Summit	1	1	1	t	I	ı	1	ł	1	1	ł	;		
Weber	27.00	350	6.30	587	I	ł	4.20	700	3.30	30	3.10	;		
REGIONAL TOTALS	5.50	1,235	6.30	379	5.50	925	4.10	833	2.10	321	3.50	4,183	4.50	1,313
Central Region														
Juab	3.40	947	3.90	1,005	1.80	1,486	2.40	1,100	2.10	1,100	3.60	2,050		
Salt Lake	0.00	•	4.50	1	2.50	233	1	ł	1.30	533	1.70	609		
Sanpete	0.00	0	6.10	3,900	6.40	1,920	ł	ı	I	1	I	}		
Tooele	0.00	•	I	;	1	ı	ł	ł	08.0	2,600	I	ł		
Ulah	3.40	965	3.50	857	2.40	2,650	10.00	2,200	2.60	1,016	5.00	1,787		
Wesstch	;	1	1	t	I	1	1	1	:	;	1	1		
REGIONAL TOTALS	3.40	958	3,80	1,057	3.00	1,893	3.50	1,344	1.70	1,119	4.20	1,541	3.27	916,1
Southern Region														
Beaver	I	I	ł	I	1	1	1	ł	I	1	I	;		
Iron	ł	I	ł	I	1	ł	1	1	ł	;	ł	1 -		
Kane	1	1	;	1	1	1	1	1	1	I	1	1		
Millard	ŀ	1	3.40	4,270	7.00	4,135	1.60	990	1	I	2.20	2,033		
Piute	1	I	1	I	١	I	1	1	I	:	ı	1		
Sevier .	1	ł	9.60	209	3.90	2,230	12.60	I	1	ł	ł	ı		
Washington	1	ı	1	I	I	:	ı	:	I	I	1	I		
Wayne	1	ı	ı	1	,	1	1	1	1	1	:	•		
REGIONAL TOTALS	r	ı	3.70	2,943	5.40	3,105	3.60	2,778	1	1	2.20	2,033	4.23	2,942
Northeastern Region														
Daggett	1	1	1	1	I	I	ł	1	1	1	1	1		
Duchesne	1.50	241	2.00	139	1.60	1,400	1.60	1,425	0.80	550	1.80	200		
Uinteh	1.70	285	0.60	145	1.60	1,627	2.50	5,600	1.20	52	1.8	1,600		
REGIONAL TOTALS	1,50	255	1.20	1,741	1.80	1,556	1.80	1,889	1.10	660	1.10	728	1.42	1,138
Southeastern Region														
Carbon	2.50	538	1	ł	1	1	I	t	ŀ	1	I	1		
Enery	1,60	161	;	1	;	1	1	1	1	1	1	1		
Grand	ı	1	:	1	1	1	1	ł	I	1	ı	1		
San Juan	1		ı	1	1	1	;	1	1	1	I	8		
REGIONAL TOTALS	2.00	261	1	1	1	1	1	1	1	1	1	ı	2.00	261
STATE TOTALS	S.C.	CO.4	3 T.0						2	2		1 1/0		

18

Young/ Ad. 11en 1.92 1.57 3.00 4.15 4.17 4.17 4.17 4.17 4.17 4.17 4.17 4.17					Dis	Distinct	Mixed	2	Adults w/o	0/M 5									
	Region and		Total		Bru	spor	Obse	ц.	Your	ji B	Total	Total		Total	Pheas./	Young/	Mean	Young/	Tellens
Integrat	County	Routes	Miles	Total	Hens	Young	Hens	Young	Cocks	Hens	Hens	Young		Pheas.	Mile	Mile	Brood	Ad. Hen	M/Young
$ \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	orthern Region																		ş
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ox Elder	H	170	ŝ	ŝ	16	S	۲	1	4	12	23	-	36	0.21	0.14	3.20	1.92	2
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ache	÷	158	ŝ	ŝ	26	Π	01	ان	-	23	36	ŝ	64	0.41	0.23	5.20	1.57	P
	avis	T	70	•7	Ð	18	t	:	••	÷	9	18	e,	27	65.0	0.26	· 6.00	3.00	8
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$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	leber .	-	87	۵	•	36	1	1	e ا	+ ;	2	9	-	3	0.10	110		2 10	9
Region Regin Regin Regin <td>EGIONAL TOTALS</td> <td>٢</td> <td>485</td> <td>19</td> <td><u>6</u></td> <td>\$</td> <td>16</td> <td>11</td> <td>15</td> <td><u>_</u></td> <td>12</td> <td></td> <td><u>e</u></td> <td>6</td> <td>cc.n</td> <td>1770</td> <td></td> <td>41.4</td> <td></td>	EGIONAL TOTALS	٢	485	19	<u>6</u>	\$	16	11	15	<u>_</u>	12		<u>e</u>	6	cc.n	1770		41.4	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	entral Region																		
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$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	lt Lake	-	41	4	4	17	4	21	4	1	6	38	4	51	1.24	0.93	4.25	4.22	8
NAL TOTALS 7 96 7 9 7 9 1 77 9 25 0.55 5.13 6.13 5.13 6.14 5.14 6.14 5.14 6.14 5.14 6.14 5.14 6.14 5.14 6.14 5.14 5.14 5.15 5.14 5.14 5.15 5.14 5.14 5.15 <t< td=""><td>unate</td><td>•</td><td>180</td><td>12</td><td>12</td><td>9</td><td>12</td><td>61</td><td>m</td><td>ŝ</td><td>29</td><td>121</td><td>÷</td><td>153</td><td>0.85</td><td>0.67</td><td>5.00</td><td>4.17</td><td>22</td></t<>	unate	•	180	12	12	9	12	61	m	ŝ	29	121	÷	153	0.85	0.67	5.00	4.17	22
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$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ECTONAL TOTALS		404	7	24	118	11	177	=	=	56	295	Ξ	362	0.73	0.59	4.92	5.27	8
	ithern Revion																		
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$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	illard	-	120	N)	NO.	27	7	1	4	•	٢	34	4	4 5	0.38	0.28	5.40	4.86	100
wgton - <td>te te</td> <td>1</td> <td> </td> <td>t</td> <td>1</td> <td>;</td> <td>ł</td> <td>;</td> <td>ł</td> <td>1</td> <td>1</td> <td>I</td> <td></td> <td>1</td> <td>I</td> <td>ı</td> <td>I</td> <td>1</td> <td>I</td>	te te	1		t	1	;	ł	;	ł	1	1	I		1	I	ı	I	1	I
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	ayue BCIONAL TOTALS	-	120		ľ	27	2	F	4	-	-	34	4	45	0.38	0.28	5.40	4.86	100
Internation Inte	artheastern Region	•		,															
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1 97 6 6 20 0 2 20 2 0 6 20 2 3.33	uchesne	17	278	16	16	11	10	46	15	N)	31	118	15	164	0.59	0.42	4.50	3.81	28
NALTOTALS 4 375 22 22 92 10 46 17 5 37 138 17 192 0.51 0.37 4.18 3.73 Istern Region 1 90 4 4 18 0 2 1 0 4 20 1 25 0.18 0.22 4.50 5.00 1 90 4 4 18 0 2 1 0 4 20 1 25 0.18 0.22 4.50 5.00 MALTOTALS 1 90 4 4 18 0 2 1 0 4 20 1 25 0.28 0.22 4.50 5.00 NALTOTALS 1 90 4 4 18 0 2 1 0 4 20 1 25 0.28 0.28 4.50 5.00 NALTOTALS 1 90 4 4 18 0 2 1 0 4 20 1 25 0.38 0.51 0.38 4.61 3.81 NALTOTALS 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	intah	-	5	9	9	20	¢	0	1	0	9	20	7	28	0.29	0.21	3.33	3.33	울
Istern Region Istern Region I 90 4 4 18 0 2 1 0 4 20 1 25 0.28 0.22 4.50 5.00 I 90 4 4 18 0 2 1 0 4 20 1 25 0.28 0.22 4.50 5.00 II 90 4 4 18 0 2 1 0 4 20 1 25 0.28 0.22 4.50 5.00 INAL TOTALS I 90 4 4 1 18 0 2 1 0 4 20 1 25 0.28 0.22 4.50 5.00 INAL TOTALS I 90 4 4 4 18 0 2 1 0 4 20 1 25 0.28 0.21 4.50 5.00 INAL TOTALS I 90 4 4 4 18 0 2 1 0 4 20 1 25 0.28 0.21 4.50 5.00 INAL TOTALS I 90 4 4 4 18 0 2 1 0 4 20 1 25 0.28 0.21 4.50 5.00 INAL TOTALS I 90 4 4 4 18 0 2 1 0 4 20 1 25 0.28 0.21 4.50 5.00 INAL TOTALS I 90 4 4 4 18 0 2 1 0 4 20 1 25 0.58 0.51 0.38 4.61 3.81 INAL TOTALS I 90 4 4 4 18 0 2 1 0 4 20 1 28 0.51 0.38 4.61 3.81 INAL TOTALS I 90 4 4 4 18 0 2 1 0 0 4 18 73 0.51 0.38 4.61 3.81 INAL TOTALS I 90 4 4 4 18 0 2 1 0 0 4 18 73 0.51 0.38 4.61 3.81 INAL TOTALS I 90 4 4 4 18 0 0 2 1 0 0 4 18 73 0.51 0.38 4.61 3.81 INAL TOTALS I 90 4 4 4 18 0 0 2 1 0 0 4 18 73 0.51 0.38 4.61 3.81 INAL TOTALS I 90 4 4 4 18 0 0 2 1 0 0 4 18 73 0.51 0.38 4.61 3.81 INAL TOTALS I 90 4 4 4 18 0 0 2 1 0 0 4 18 73 0.51 0.38 4.61 3.81 INAL TOTALS I 90 4 0 4 4 4 18 0 0 2 1 0 0 4 18 73 0.51 0.38 4.61 3.81 INAL TOTALS I 90 4 0 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	EGIONAL TOTALS	4	375	22	22	26	9	4	17	Ś	37	138	17	192	0.51	0.37	4.18	3.73	80
I 90 4 4 18 0 2 1 0 4 20 1 25 0.28 0.22 4.50 5.00 II 90 4 4 18 0 2 1 0 4 20 1 25 0.28 0.22 4.50 5.00 III - <td< td=""><td>outheastern Region</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	outheastern Region																		
1 90 4 4 18 0 2 1 0 4 20 1 25 0.28 0.22 4.50 5.00 m - </td <td>arbon</td> <td>1</td> <td>ł</td> <td>I</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>I</td> <td>:</td> <td>1</td> <td>1</td> <td>ł</td> <td>1</td> <td>ı</td> <td>I</td> <td>1</td> <td>t</td> <td>1</td>	arbon	1	ł	I	1	1	1	1	I	:	1	1	ł	1	ı	I	1	t	1
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<u> </u>	FGIONAL TOTALS	-	8	4	4	18	•	64	-	-	4	20	1	25	0.28	0.22	4.50	5.00	2
		•		·											;	~ ~			2

Region and						Үеаг						Anorogo
County	1981	1982	1981	1984	1985	1986	1987	1988	1080	1000	1001	ATCI 40
Northern Region												AC-10(1
Box Elder	1.40	0.74	1.43	0.46	16.0	0.44	0.81	0.63	0.19	0.32	0.21	
Cache	0.92	0.17	0.04	0.19	0.03	0.01	0.29	0.13	0.23	60.0	0.41	
Davis	1.38	0.83	1.07	0.34	0.71	1.04	1.30	0.70	0.41	0.48	0.39	
Morgan	;	ł	:	ł	ł	ł	1	t	ł	ł	1	
Rich	ł	1	:	ł	;	;	:	1	ı	I	ł	
Summit	I	:	ł	ł	:	ł	ı	1	:		:	
Weber	3.17	1.79	;	1.56	1	0.86	ł	:	0.52	1.26	0.48	
REGIONAL TOTALS	1.56	0.78	0.63	0.48	0.50	0.43	0.71	0.40	0.30	0.42	0.35	0.62
Central Region												
Juab	0.89	0.61	0.44	0.77	0.48	0.71	:	0.38	0.50	0.14	ł	
Salt Lake	1.09	1.24		1.80	0.46	2.10	1.08	ł	1	1.26	1.24	
Sanpete	5.25	1.78	1.74	0.99	1.87	1.15	1.63	1.18	1.70	1.23	0.85	
Tonele	0.48	0.45	1	:	1	0.20	0.08	0.15	1	0.17	0.55	
Utah	2.19	3.89	1.95	2.21	ı	2.13	2.35	2.00	1.00	1.45	0.58	
Wasatch	:	;	:	1	1	:	ł	1	t	ł	:	
REGIONAL TOTALS	2.01	2.15	1.72	1.49	1.35	1.61	1.79	1.42	1.50	1.09	0.73	1.6[
Southern Region												
Beaver	0.63	0.66	0.23	0.11	0.63	0.23	0.08	0.17	1	I	1	
Garfield	ł	I	1	1	1	ł	ł	ł	I	ł	1	
lren	1.24	0.07	0.31	1	0.06	10.0	ł	ł	1	I	1	
Kane	I	;	ł	1	1	;	1	I	I	ł	1	
Millard	2.85	1.15	1.28	1.09	2.27	86.0	0.67	0.67	1	0.34	0.38	
Piute	1	ł	ł	ł	;	ł	1	I	1	1	ł	
Sevier	0.87	1.37	1.27	1.52	0.62	1.82	1.95	1.30	1	1	ł	
Washington	1.41	0.62	1.09	ı	0.13	1.30	0.47	0.22	90.0	ł	I	
Wayne	1.04	0.40	0.26	1	0.39	0.38	1	ł	1	1	I	
REGIONAL TOTALS	0.17	1.05	0.94	1.09	1.25	1.07	1.44	0.78	0.06	0.34	0.38	0.82
Northeastern Region			l									
Daggett	1	ł	;	;	1	ł	1	:	ł	I	ı	
Duchesne	0.84	0.73	0.72	0.68	0.16	0.44	0.38	0.58	0.39	0.93	0.59	
Uintah	1.05	1.27	2.97	1.33	0.35	0.46	0.55	0.45	0.24	0.52	0.29	
REGIONAL TOTALS	0.91	0.90	1.39	16.0	0.22	0.45	0.45	0.54	0.32	0.71	0.51	9.68
Southeastern Region												
Carbon	1.22	0.28	0.42	I	0.12	0.26	. 1	;	ł	ł	1	
Emery	0.74	0.74	0.32	0.66	0.83	0.73	0.72	1.06	1.00	0.61	0.28	
Grand	:	1	1.70	1	1	ı	ł	ł	ł	ł	1	
San Juan	ı	,	1	1	1	ı	;	;	ı	1	t	
REGIONAL TOTALS	0.86	0.61	0.39	0.66	0.59	0.61	0.72	1.06	1.00	0.61	0.28	0.71
STATE TOTALS	1.46	1.19	1.06	0.94	0.81	0.80	1.10	0.81	0.71	0.71	0.51	0.96

Table 4. Trend of pheasants observed per mile during summer roadside pheasant counts, 1981-91.

Table 5. Trend of young observed per mile during summer roadside pheasant counts, 1981-91.

į

•												
County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1981-90
Northern Region						1						
\ Box Elder	1.07	0.44	0.63	0.26	0.65	0.29	0.62	0.39	0.16	0.27	0.14	
2 Cache	0.70	0.11	0.00	0.13	0.02	0.0	0.25	0.09	0.14	0.06	0.23	
3 Davis	0.81	0.43	0.78	0.16	0.35	0.85	96.0	0.52	0.22	0.31	0.26	
👍 Morgan	1	1	1	1	ł	1	I	ł	I	I	I	
S Rich	1	1	I	I	!	ı	ı	:	:	:	1	
(, Summit	ı	ı	ł	ı	ł	;	1	I	I	1	1	
ブ Weber	2.38	1.38	ı	1.27	I	0.76	1	I	0.39	0.97	0.30	
REGIONAL TOTALS	1.15	0.52	0.35	0.32	0.33	0.32	0.55	0.28	0.20	0.32	0.21	0.43
Central Region												
& Juab	0.63	0.42	0.36	0.58	0.39	0.57	ı	0.17	0.08	0.09	ł	
9 Salt Lake	0.57	0.84	1	1.26	0.31	1.62	0.79	ł	1	0.97	0.93	
(^O Sanpete	4.40	1.44	1.44	0.76	1.54	0.0	1.23	0.96	1.30	16.0	0.67	
\\ Tooele	0.28	0.22	1	1	:	0.08	0.07	0.07	1	0.10	0.53	
(2 Utah	1.68	1.52	1.34	1.36	:	1.68	1.81	1.57	1.00	1.15	0.49	
رح Wasatch	I	ł	1	1	:	1	1	1	1	1	I	
REGIONAL TOTALS	1.51	1.63	1.31	96.0	1.09	1.26	1.37	1.11	1.10	0.87	0.59	1.22
Southern Region			-									
(4 Beaver	0.54	0.48	0.17	0.08	0.51	0.14	0.07	0.10	ł	1	ł	
() Garfield	1	ł	1	ł	ł	1	1	I	t	ł	ł	
\6 Iron	1.07	0.04	0.23	ı	0.05	:	0.0	ı	1	ł	I	
∫ Kane	I	1	ı	1	ł	:	1	ł	ı	ł	I	
& Millard	2.27	0.83	1.00	0.89	0.20	0.76	1.55	0.50	'n	0.31	0.28	
14 Piute	1	1	1	ł	ł	ı	1	t	1	1	I.	
20Sevier	0.67	1.07	0.94	1.19	1.25	1.48	1.54	0.95	1	1	1	
2 Washington	0.89	0.43	0.68	ł	1	0.86	0.22	0.16	1	1	I	
2.1.Wayne	0.87	0.21	0.12	ı	0.28	0.19	1	1	1	t		
REGIONAL TOTALS	1.30	0.76	9.68	0.86	1.03	0.84	1.12	0.57	1	0.31	0.28	0.83
Northeastern Region												
> 3 Daggett	I	1	ı	ı	ł	I	ł	I	t	ł	1	
えけ Duchesne	0.52	0.54	0.55	0.46	0.07	0.29	0.25	0.32	0.20	0.58	0.42	
2 Clintah	0.83	0.95	2.25	1.12	0.29	0.33	0.40	0.30	0.14	0.35	0.21	
REGIONAL TOTALS	0.63	0.66	1.06	0.69	0.14	0.30	0.31	0.32	0.17	0.46	0.37	0.47
Southeastern Region												
26 Carbon	0.93	0.18	0.27	ł	0.02	0.15	1	1	I	1	1	
27 Eatery	0.52	0.45	0.18	0.45	0.63	0.56	0.59	0.86	1.00	0.43	0.22	
Grand	Ŧ	t	1.10	I	1	ł	1	ł	1	ł	1	
Sen Juan	1	1	,	1	'	:	1	1	1	1	1	
REGIONAL TOTALS	0.65	0.68	0.23	0.45	0.42	0.34	0.59	0.86	1.00	0.43	0.22	0.57
STATE TOTALS	1 02											

Acçuentia Factor Fact	LADIE 0. LIFERE OF YOUNG	young per aunit nen rauos round untrig summer roausage pueasan counts, 1961-91				manc brices		12-10/1					
Conney 1841 1942 1943 1944 1945 1944 1945 1944 1945 1944 1945 1949 1940 1941 1944 1945 1944 1945 1944 1945 1944 1944 1945 1945 1945 1944 1945 1944 1945 1944 1945 1944 1945 1944 1945 <	kegion and						Year						Average
I Region Alt Al	County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1981-90
r 440 340 141 2.44 3.53 1.38 4.42 2.31 7.00 5.86 1.92 7 <t< td=""><td>Northern Region</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Northern Region												
418 314 - 314 157 133 157 133 157 133 157 133 157 133 157 133 157 133 157 133 157 133 153 133 153 133 153 133 156 133 240 533 240 534 240 536 240	Box Elder	4.09	3.00	1.41	2.44	3.63	2.38	4.42	2.21	7.00	5.86	1.92	
181 1.25 3.31 1.67 1.36 5.92 3.39 6.86 1.30 2.41 3.00	Cache	4.18	3.43	1	3.40	1.50	I	7.17	2.33	2.60	5.50	1.57	
	Davis	1.81	1.25	3.31	1.67	1.26	5.92	3.30	6.86	1.30	2.41	3.00	-
	Morgan	:	1	1	I	ł	1	1	I	1	1	1	
3 4 7 5	Rich	ł	I	ł	ł	1	I	ł	1	ł	ł	;	
M. TOTAIN 338 4.70 - 5.60 - 7.31 - 4.80 5.50 2.00 3.95 2.00 3.95 2.00 3.95 2.00 3.95 2.00 3.95 2.00 3.95 2.00 3.95 2.00 3.95 2.00 3.95 2.00 3.95 2.00 3.96 4.10 - 2.00 3.96 4.00 - 2.00 3.95 3.00 4.17 2.01 2.17 2.17 2.17 2.16 4.18 3.93 4.00 2.0 4.00 - 2.00 3.94 4.17 2.43 2.17 2.16 2.13 5.11 2.00 2.01 4.00 - 2.00 4.00 - - 2.01 4.17 - 2.01 4.00 - - 2.01 4.00 - - 2.01 4.00 - - 2.01 4.00 - - - - - - - - <td>Summit</td> <td>T</td> <td>1</td> <td>ı</td> <td>1</td> <td>1</td> <td>I</td> <td>I</td> <td>I</td> <td>1</td> <td>1</td> <td>ł</td> <td></td>	Summit	T	1	ı	1	1	I	I	I	1	1	ł	
ALTOTAL 3.30 1.98 3.23 2.60 3.92 4.18 3.44 2.90 3.86 2.02 Regim 2.04 2.73 5.8 3.13 5.10 3.88 5.48 3.30 4.17 Regim 2.04 2.73 5.8 5.10 3.88 5.10 3.88 5.10 3.88 5.10 3.86 4.40 5.10 3.34 4.17 6.71 5.48 5.38 5.10 3.88 3.10 4.18 3.30 4.31 6.10 3.94 4.10 4.21 4.11 7.00 4.89 3.53 5.51 2.33 5.51 2.36 5.30 5.33 5.51 5.34 4.30 3.34 4.31 6.66 3.66 3.53 5.51 2.33 5.51 2.34 3.30 5.27 6.71 6.33 5.31 2.40 3.56 4.00 4.70 3.56 2.30 3.34 6.71 7.80	Weber	3.38	4.70	:	5.50	ſ	7.33	ł	1	4.80	5.50	2.60	
Regint 2.10 3.15 6.30 4.33 5.10 3.35 4.00 3.00 4.37 c 2.04 2.31 5.48 5.33 5.10 3.36 4.00 3.00 4.37 c 6.71 5.48 5.85 5.38 6.10 3.98 3.20 3.34 4.17 2.43 2.17 - - - 1.50 4.00 2.00 - 2.00 - 2.00 - 2.00 - 2.00 - 2.00 - 2.00 - 2.00 - 2.00 - 2.00 - - 0.03 3.34 4.17 3.00 3.53 1.6 1.8 3.89 3.80 3.81 2.00 - - - - - - 2.00 - - - - - - - - - - - - - - -	REGIONAL TOTALS	3.39	3.00	1.98	3.23	2.60	3.92	4.18	3.44	2.90	3.86	2.02	3.25
4.29 3.75 6.50 4.20 4.33 4.00 2.00 0.23 4.00 6 7.11 5.85 5.85 5.13 5.10 3.86 3.80 4.21 6 7.11 5.8 5.85 5.13 5.10 3.86 3.80 4.01 3.80 4.01 3.80 4.01 3.80 4.01 3.80 4.01 3.80 4.01 4.15 4.13 5.0 4.13 4.11 5.0 4.01	Central Region												
e 2.04 2.73 - 3.58 3.13 5.10 3.88 - - 3.80 4.17 2.41 2.41 2.44 2.44 2.40 2.34 4.17 2.41 2.41 2.46 - - 4.16 4.18 3.96 4.10 4.10 4.16 4.13 3.40 3.53 2.51 1.66 - - 4.16 4.18 3.96 4.31 6.41 -<	Juab	4.29	3.75	6.50	4.20	4.33	4.00	1	2.00	0,23	4.00	1	
	Salt Lake	2.04	2.73	1	3.58	3.13	5.10	3.88	:	1	3.80	4.22	
2.43 2.17 1.50 4.10 2.00 2.00 1.50 4.16 1.50 4.31 6.41 3.30 3.53 2.51 1.56 4.16 4.19 3.96 4.31 6.41 ALL TOTALS	Sanpete	6.71	5.48	5.85	5.38	6.10	3.98	3.25	4.48	3.20	3.34	4.17	
3.80 3.53 2.51 1.66 4.16 4.18 3.94 3.80 4.31 6.41 MLTOTALS -	Tooele	2.43	2.17	:	ı	:	1.50	4.00	2.00	I	2.00	1	
NLT TOTALS -	Utah	3.80	3.53	2.51	1.66	•	4.16	4.18	3.94	3.80	4.31	6.41	
N.N. TOTALS 4.06 3.95 3.69 2.59 5.61 4.18 3.89 4.00 4.70 3.92 5.27 n Region - <	Wasatch	1	1	I	I	1	t	1	ı	1	1	1	
n Region 7.00 4.89 3.75 2.33 5.11 2.60 6.00 1.80	REGIONAL TOTALS	4.08	3.95	3.69	2.59	5.61	4.18	3.89	4.00	4.70	3.92	5.27	4.06
7.00 4.89 3.75 2.33 5.11 2.60 6.00 1.80 - <td>Southern Region</td> <td></td>	Southern Region												
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Beaver	7.00	4.89	3.75	1.33	5.11	2.60	6.00	1.80	1	1	I	
8.56 3.00 5.33 - 3.00 5.33 -	Garfield	ı	ł	1	;	ł	;	,	I	I	1	I	
- - - - - - - - - 1 1 1 1 1 1 1 1 1 1 2 - - - - - - - - 1 2 - - - - - - - - 1 4 18 3.94 3.46 4.58 5.22 5.14 3.77 - - - 1 1.66 3.93 5.05 5.92 4.43 4.32 3.64 - - 1 1.75 1.66 3.33 5.05 5.92 4.43 4.32 3.64 - - 1 1.75 3.17 2.43 - - - - - 1 1.75 3.13 3.67 3.67 2.33 3.39 3.33 1 1.75 3.73 3.64 2.13 3.67 2.33 3.39 1 2.56 4.96 5.16 13.00 11.50 4.13 3.65 3.67 2.33 3.39 1 5.57 4.96 5.16 5.33 3.64 2.01 <td>Iron</td> <td>8.56</td> <td>3.00</td> <td>5.33</td> <td>:</td> <td>3.00</td> <td>1</td> <td>ı</td> <td>ł</td> <td>I</td> <td>1</td> <td>I</td> <td></td>	Iron	8.56	3.00	5.33	:	3.00	1	ı	ł	I	1	I	
4.65 4.48 6.37 6.24 4.33 4.04 3.99 3.64 - 15.00 4.86 -	Kane	ı	1	1	;	1	ı	1	1	. 1	I	1	
	Millard	4.65	4.48	6.37	6.24	4.33	4.04	3.99	3.64	I	15.00	4.86	
4.18 3.94 3.49 4.64 4.58 5.21 5.14 3.77 - <td>Pinte</td> <td>ı</td> <td>I</td> <td>1</td> <td>ı</td> <td>I</td> <td>1</td> <td>1</td> <td>ł</td> <td>ł</td> <td>:</td> <td>I</td> <td></td>	Pinte	ı	I	1	ı	I	1	1	ł	ł	:	I	
gton 2.69 3.46 2.23 - - 2.78 1.11 3.50 -	Sevier	4.18	3.94	3.49	4.64	4.58	5.22	5.14	3.77	ı	ł	1	
8.75 1.67 3.33 - 3.17 2.43 - 15.00 4.86 - - 15.00 4.86 - <th< td=""><td>Washington</td><td>2.69</td><td>3.46</td><td>2.23</td><td>ı</td><td>ļ</td><td>2.78</td><td>11.1</td><td>3.50</td><td>I</td><td>1</td><td>I</td><td></td></th<>	Washington	2.69	3.46	2.23	ı	ļ	2.78	11.1	3.50	I	1	I	
4.66 3.93 3.69 5.05 5.92 4.43 4.32 3.61 $ 15.00$ 4.96 2.94 6.10 5.03 3.81 3.00 3.73 3.40 2.36 1.68 2.60 3.81 5.50 4.96 5.16 13.00 11.50 4.13 3.65 3.67 2.33 3.33 3.73 5.54 5.11 6.38 5.83 3.52 2.64 2.01 2.32 3.73 7.91 5.67 3.13 $ 0.50$ 3.00 $ -$ <td< td=""><td>Wayne</td><td>8.75</td><td>1.67</td><td>3.33</td><td>1</td><td>3.17</td><td>2.43</td><td>1</td><td>1</td><td>ł</td><td>ı</td><td>I</td><td></td></td<>	Wayne	8.75	1.67	3.33	1	3.17	2.43	1	1	ł	ı	I	
ion $\begin{array}{cccccccccccccccccccccccccccccccccccc$	REGIONAL TOTALS	4.66	3.93	3.69	5.05	5.92	4.43	4.32	3.61		15.00	4.86	5.62
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Northeastern Region												
$ \begin{array}{l cccccccccccccccccccccccccccccccccccc$	Daggett	ı	ı	1	ł	I	ł	;	ı	ı	:	ı	
$ \begin{array}{l c c c c c c c c c c c c c c c c c c c$	Duchesne	2.94	6.10	5.03	3.81	3.00	3.73	3.40	2.36	1.68	2.60	3.81	
ALS 3.73 5.54 5.11 6.38 5.83 3.88 3.52 2.64 2.01 2.82 3.73 iou 7.91 5.67 3.13 - 0.50 3.00	Uintab	5.50	4.96	5.16	13.00	11.50	4.13	3.65	3.67	2.33	3.30	3.33	
iou 7.91 5.67 3.13 - 0.50 3.00	REGIONAL TOTALS	3.73	5.54	5.11	6.38	5.83	3.88	3.52	2.64	2.01	2.82	3.73	4.15
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	Southeastern Region					8							
3.97 2.56 2.93 3.75 4.17 5.15 6.63 6.42 3.60 3.50 5.00 - - - 5.50 -	Carhon	1.91	5.67	3.13	I	0:50	3.00	ł	:	I	:	ŀ	
- - 5.50 -	Emery	3.97	2.56	2.93	3.75	4.17	5.15	6.63	6.42	3.60	3.50	5.00	
- -	Grand	ı	ı	5.50	1	ł	1	1	I	1	I	1	
ALS 4.98 4.93 3.21 3.75 3.80 4.04 6.63 6.42 3.60 3.50 5.00 4.12 3.88 3.85 3.92 5.04 4.20 4.08 3.68 3.70 3.81	San Juan	1	'	1	1	;	ı	1	1	T	;	1	
4.12 3.88 3.85 3.92 5.04 4.20 4.08 3.68 2.95 3.70 3.81	REGIONAL TOTALS	4.98	4.93	3.21	3.75	3.80	4.04	6.63	6.42	3.60	3.50	5.00	4.49
	STATE TOTALS	4.12	3.88	3.85	3.92	5.04	4.20	4.08	3.68	2.95	3.70	3.81	3.94

Table 6. Trend of young per adult hen ratios found during summer roadside pheasant counts, 1981-91.

C,						rear						Average
County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1001	1981-90
Northern Region												AC-10/1
Box Elder	4.90	4.13	4.00	4.63	5.77	5.33	6.00	4.80	8.00	5.40	3.20	
Cache	5.93	6.50	1	3.40	3.00	ł	4.80	4.00	4.00	4.50	10.2	
Davis	3.64	2.00	5.40	3.33	3.50	5.12	4.40	6.60	4.50	4.20	6.00	
Morgan	ł	1	1	1	1	1	1	:	1	ļ		
Rich	ł	1	;	1	1	;	;	;	:	ſ		
Summit	:	1	;	;	I	1	4	ļ		I	I	
Weber	3.70	5.66	ł	6.00	6.33	. I	1	1 2	- T 20	:	: ;	
REGIONAL TOTALS	4.48	4.98	4 58	4 72	5 11	5 41	£ 10	2.20	964.3		<u>,</u>	
Central Region			0.011		1110		AFIC	04.0	1+ 'C	00.0	4.03	5.01
Juah	3.80	3.75	6.50	6.00	4.33	4.67	:	4.00	4.00	4.00	1	
Salt Lake	4.67	4,44	4.44	4.75	5.00	5.70	3.80	3.80	I	2 00	4 75	
Sanpete	7.24	5.93	6:39	6.38	8.28	5.10	4.80	5.80	4.20	4.40	00 5	
Tooele	3.67	3.50	ł	:	I	3.00	4.00	4.00	1	3.00		
Utah	5.38	4.99	4.02	2.95	I	4.75	4.90	4.80	5.10	5.00	5.13	
Wasatch	ł	:	1	ł	1	1	I	1	I	ł	1	
REGIONAL TOTALS	5.66	5.15	5.01	3.75	7.42	4.89	4.80	5.00	4.40	4.70	4.92	5.08
Southern Region												
Beaver	6.50	5.00	6.50	7.00	5.75	3.25	6.00	4.50	Ì	ł	. 1	
Garfield	ı	ł	ł	I	1	ł	1	1	ł	ı	1	
Iron	8.14	3,00	5.33	I	1	ł	1	1	ł	ı	ı	
Kane	I	1	ł	I	1	ı	ı	ł	1	ł	1	
Millard	6.30	6.30	6.40	6.00	40.63	3.72	5.30	4.90	ł	3.80	5.40	
Piute	ł	ł	ı	ł	1	ı	1	ł	I	1	I	
Sevier	5.00	4.56	5.14	5.10	5.17	5.69	5.80	5.60	I	1	:	
Washington	5.90	4.40	3.90	1	, 1	4.14	5.00	7.00	1	1	1	
Wayne	1.00	2.00	1	;	3.33	2.25	1	1	1	1	ł	
REGIONAL TOTALS	6.14	4.98	5.18	5.42	1.35	4.70	5.60	5.30	1	3.80	5.40	5.39
Northeastern Region												
Daggett	:	1	1	I	1	:	ł	1	ł	ł	1	
Duchesne	4.58	7.31	4.50	5.87	4.00	5.75	3.90	5.30	2.70	5.30	4.50	
Uintah	5.50	4.25	5.11	5.50	6.33	5.71	4.40	5.30	4.20	4.90	3.33	
REGIONAL TOTALS	4.89	5.84	4.87	5.72	4.78	5.74	4.10	5.30	3.50	5.10	4.18	4.98
Southeastern Region					-							
Carbon	7.67	6.00	3.00	1	1.00	1	ľ	1	ı	1	ł	
Emery	6.00	4.42	6.60	5.00	5.20	6.89	5.00	7.10	5.70	5.60	4.50	
Grand	1	1	5.50	ł	ı	I	1	:	1	ı	i	
San Juan	I	1	ı	1	1	1	I	ł	1	:	ł	
REGIONAL TOTALS	6.24	4.64	5.30	5.00	4.82	5.46	5.00	7.10	5.70	5 60	4 50	6 40
											200	

Table 9. Summary of pheasant hunter success and distribution of harvest and hunting pressure by region and county, 1991.

EGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	V OF PRESSURE	% OF HARVEST	
ORTHERN REGION							
BOX ELDER	331	16,004	8,472	0.53	10.66	11.67	
CACHE	248	13,778	7,028	0.51	9.18	9.68	
	191	9,463	3,183	0.34	6.31	4.38	
DAVIS		347	52		0.23	0.07	
MORGAN	8			0.00	0.02	0.00	
RICH	2	34	0			0.02	
SUMMIT	4	347	17	0.05	0.23		
WEBER	266	15,709	5,827	0.37	10.47	8.03	
REGIONAL TOTALS	1,050	55,686	24,581	0.44	37.10	33.85	<u> </u>
CENTRAL REGION						·	
JUAB	84	3,166	1,791	0.57	2.11	2.47	
SALT LAKE	123		1,617	0.32	3.41	2.23	
SALI LARE	166	7,306	4,314	0.59	4.87	5.94	
	69	2,870	1,252	0.44	1.91	1.72	
TOOELE	659	36,028	19,918	0.55	24.00	27.43	
UTAH			365	0.68	0.36	0.50	
WASATCH	12	539					
REGIONAL TOTALS	1,113	55,025	29,260	0.53	36.66	40.30	
SOUTHERN REGION							
BEAVER	19	922	504	0.55	0.61	0.69	
GARFIELD	1	17	0	0.00	0.01	0.00	
IRON	25	1,374	400	0.29	0.92	0.55	
	25	÷, 5, 4	0	0.00	0.00	0.00	
KANE	-		5,532	0.59	6.27	7.62	
MILLARD	185	9,411				0.02	
PIUTE	4	173	17	0.10	0.12		
SEVIER	142	7,289	2,626	0.36	4.86	3.62	
WASHINGTON	29	1,513	313	0.21	1.01	0.43	
WAYNE	2	34	17	0.50	0.02	0.02	
REGIONAL TOTALS	407	20,736	9,411	0.45	13.82	12.96	
NORTHEASTERN REG	ION						
DAGGETT	0	0	0	0.00	0.00	0.00	
DUCHESNE	130	6,332	4,157	0.66	4.22	5.73	
UINTAH	89	4,749	2,226	0.47	3.16	3.07	
REGIONAL TOTALS	219	11,081	6,384	0.58	7.38	8.79	
SOUTHEASTERN REG	ION						
CARBON	38	2,800	608	0.22	1.87	0.84	
EMERY	71	4,209	2,122	0.50	2.80	2.92	
GRAND	3	365	173	0.48	0.24	0.24	
SAN JUAN	6	191	69	0.36	0.13	0.10	
REGIONAL TOTALS	118	7,567	2,974	0.39	5.04	4.10	
UNKNOWN	0	0	0	0.00	0.00	0.00	
STATE TOTALS	2,907	150,096	72,612	0.48	100.00	100.00	

*Total hunter trips from questionnaire returns.

Region and				· .	Year	·		••
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region							<u>1990</u>	1991
Box Elder	0.81	0.66	0.52	0.62	0.49	0.40	0.58	0.53
Cache	0.66	0.42	0.44	0.52	0.47	0.32	0.46	0.51
Davis	0.56	0.46	0.36	0.43	0.32	0.28	0.26	0.34
Morgan	0.44	0.05	0.18	0.70	1.71	0.40	(0.67)	(0.15)
Rich	(0.80)	(0.17)	0.00	(1.00)		(0.17)	0.00	0.00
Summit	(0.80)	`0.00'	0.00	(0.67)	0.00	(0.67)	0.00	(0.05)
Weber	0.69′	0.55	0.39	0.40	0.34	0.29	0.34	0.37
REGIONAL TOTALS	0.68	0.53	0.42	0.49	0.40	0.32	0.42	0.44
Central Region							0.42	<u> </u>
Juab	0.86	0.70	0.64	0.66	0.49	0.38	0.39	0.57
Salt Lake	0.51	0.53	0.40	0.45	0.26	0.32	0.51	0.32
Sanpete	1.08	0.98	0.72	0.73	0.80	0.65	0.51	0.59
Tooele	0.58	0.60	0.44	0.56	0.31	0.29	0.36	0.44
Utah	0.82	0.65	0.64	0.68	0.64	0.58	0.53	0.55
Wasatch	(0.29)	(0,55)	(0.17)	(0.32)	(0.60)	(1.33)	0.00	0.68
REGIONAL TOTALS	0.79	0.69	0.60	0.65	0,5	0.54	0.51	0.53
Southern Region							<u> </u>	
Beaver	0.66	0.52	0.56	0.37	0.41	0.39	0.68	0.55
Garfield	0.52	0.17	0.58	0.14	2.75	0.71	0.00	0.00
Iron	0.43	0.49	0.32	0.28	0.23	0.34	0.34	0.29
Kane	(0.50)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	0.92	0.88	0.77	0.68	0.60	0.66	0.74	0.59
Piute	0.66	0.56	0.83	0.67	0.42	1.12	(0.50)	(0.10)
Sevier	0.87	0.71	0.68	0.65	0.57	0.45	0.42	0.36
Washington	0.24	0.42	0.40	0.21	0.39	0.33	0.38	0.21
Wayne	0.25	1.22	0.33	0.24	0.63	(0.46)	0.00	(0.50)
REGIONAL TOTALS	0.79	0.73	0.67	0.60	0.77	0.52	0.56	0.45
Northeastern Regio							·····	
Daggett	(0.00)	(0.50)	0.00	(0.50)	(0.20)	0.00	0.00	0.00
Duchesne	0.99	0.88	0.84	0.87	0.90	0.62	0.78	0.66
Uintah	0.86	0.62	0.79	0.80	0.64	0.42	0.57	0.47
REGIONAL TOTALS	0.92	0.75	0.81	0.83	0.56	0.53	0.69	0.58
Southeastern Regio								
Carbon	0.44	0.42	0.39	0.47	0.51	0.39	0.30	0.22
Emery	0.65	0.58	0.46	0.48	0.68	0.44	0.44	0.50
Grand	0.38	(2.00)	(0.50)	(0.86)	(0.20)	(0.33)	(0.33)	(0.48)
San Juan	2,50	0.40	0.58	1.64	1.50	(2.00)	0.00	<u>(0.36)</u>
REGIONAL TOTALS	0.57	0.51	0.44	0.53	0.63	0.43	0.39	0.39
Unknown Counties	0.47	1.00	0.40	0.63	0.54	0.60	0.00	0.00
STATE TOTALS	0.74	0.63	0.55	0.60	0.53	0.46	0.49	0.48

Table 10. Summary of pheasants bagged per hunter-day by region and county, 1984-91.

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

Table 11. Percentage distribution of pheasant harvest by region and county, 1984-91.

								······
egion and					Year		1000	1991
county	1984	1985 _	<u>1986</u>	1987	<u>1988</u>	1989	1990	1771
lorthern Region			-					11.67
Box Elder	10.02	9.84	8.16	9.00	8.30	7.65	12.70	
Cache	4.92	3.61	4.07	4.83	5.09	4.01	7.53	9.68
Davis	7.84	7.34	5.80	6.12	5.48	4.80	3.96	4.38
	0.08	0.01	0.05	0.14	0.20	0.15	(0.21)	(0.07)
Morgan	(0.04)	(0.01)	0.00	(0.02)	(0.03)	(0.03)	0.00	0.00
Rich	(0.13)	0.00	0.00	(0.04)	0.00	(0.05)	0.00	0.02
Summit	12.82	12.28	8.81	5.46	7.42	7.40	<u>8.39</u>	<u>(8.03</u>)
Weber	35.69	33.08	26.90	25.63	26.55	24.09	32.79	33.85
REGIONAL TOTALS	33.09	33.00						
Central Region	1.80	2.13	2.95	3.47	1.94	1.69	2.09	2.47
Juab	4.64	5.28	4.90	4.48	2.18	2.67	4.30	2.23
Salt Lake	4.84 9.11	10.25	10.32	9.53	10.63	10.76	7.92	5.94
Sanpete		2.61	2.63	2.79	2.20	2.03	2.19	1.72
Tooele	2.29	17.24	22.25	23.70	25.83	27.35	23.44	27.43
Utah	18.69		(0.02)	(0.12)	(0.15)	(0.51)_	0.00	0.50
Wasatch	(0.06)	(0.09)	43.07	44.12	42.96	45.02	39.94	40.30
REGIONAL TOTALS	36.52	37.52	_43.07	44.12	42.90	<u>. 40.02</u>		<u></u>
<u>Southern Region</u>			0.65	0.45	0.56	0.36	0.73	0.69
Beaver	0.58	0.51	0.65		0.18	0.13	0.00	0.00
Garfield	0.12	0.04	0.13	0.02		0.62	0.50	0.55
Iron	0.35	0.72	0.47	0.32	0.25 0.00	0.02	0.00	0.00
Kane	(0.04)	0.00	0.00	0.00			8.71	7,62
Millard	6.93	7.85	8.30	6.29	6.03	7.99 0.74	(0.08)	
Piute	0.24	0.13	0.18	0.24	0.18			3.62
Sevier	6.06	6.58	7.42	7.07	6.34	5.75	3.94	0.43
Washington	0.35	0.70	0.61	0.24	0.22	1.05	0.78	
Wayne	0.01	0.16	0.04	0.16	0.08	(0.15)	0.00	(0.02
REGIONAL TOTALS	14.74	1 <u>6.</u> 70	17.80	14.82	13.88	16.80	<u>14.73</u>	12.96
Northeastern Region			_			• ••	0 00	0.00
Daggett	0.00	(0.03)	0.00	(0.08)	(0.05)	0.00	0.00	5.73
Duchesne	4.64	5.04	4.11	5.26	6.34	5.86	5.71	
Uintah	4.87	3.72	4.16	4.74	<u>3.91</u>	3.16	3.15	3.07
REGIONAL TOTALS	9.74	8.76	8.27	10.09	10.30	9.01	8.86	8.79
Southeastern Region								
Carbon	1.01	1.26	1.37	1.37	1.48	1.90	0.76	0.84
Emery	2.13	2.44	2.32	3.00	3.93	2.88	2.76	2.92
Grand	0.05	0.06	0.11	0.37	(0.01)	(0.08)	(0.16)	
San Juan	0,05	0.03	0.13	0.47	0.10	(0.15)	0.00	(0.10
REGIONAL TOTALS	3.25	3.78	3.93	5.22	5,53	5.01	3.68	4.10
Unknown Counties	0.30	0.16	0.04	0.10	0.75	0.08	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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

				· ·				
Region and					Year			
County	1984	1985	1986	<u>1</u> 987	1988	1989	1990	1991
Northern Region								
Box Elder	9.26	9.38	8.60	8.67	8.91	8.77	10.67	10.66
っ と Cache	5.53	5.39	5.16	5.59	5.69	5.68	7.98	9.18
ን Davis	10.33	10.00	8.92	8.43	8.95	7.85	7.32	6.31
4 Morgan	0.14	0.20	0.17	0.12	0.06	0.18	(0.15)	
5 Rich	(0.04)	(0.05)	0.00	0.01	0.09	(0.07)	(0.01)	
6 Summit	(0.12)		(0.01)		0.09	(0.04)	(0.01)	(0.23
lWeber	13.93	14.05	<u>12.36</u>	8.19	11.42	11.59	12.13	_10.47
REGIONAL TOTALS	39.20	39.03	35.22	31.06	35.24	_34.17	38.29	37.10
Central Region								
8 Juab	1.55	1.91	2.54	3.15	2.11	2.02	2.61	2.11
9 Salt Lake	7.79	6.31	6.72	5.91	4.54	3.84	4.11	3.41
(b Sanpete	6.28	6.55	7.86	7.76	7.04	7.55	6.81	4.87
B Tooele	2.93	2.76	3.29	2.99	3.80	3.17	2.95	1.91
12 Utah	16.90	16.81	19.12	20.72	21.42	21.39	21.57	24.00
Wasatch	(0.17)	(0.10)	(0.06)				0.00	0.36
REGIONAL TOTALS	34.46	34.34	39.59		39.06	38.15		36.66
Southern Region		+ -					30.00	30.00
⁽⁴ Beaver	0.65	0.66	0.64	0.73	0.72	0.42	0.52	0.61
Garfield	0.17	0.17	0.12	0.08	0.03	0.08	(0.08)	0.01
d Iron	0.61	0.91	0.80	0.70	0.58	0.83	0.71	
Xane	(0.06)	(0.02)			0.00	(0.01)	0.00	0.92
-%Millard	5.61	5.60	5.95	5.49	5.29	5.52	5.74	6.27
14 Piute	0.28	0.15	0.12	0.22	0.23	0.30	(0.08)	
2º Sevier	5.17	5.83	6.00	6.48	5.91	5.79	4.58	(0.12 4.86
2) Washington	1.10	1.04	0.84	0.71	0.29	1.47	1.02	1.01
o'tWayne	0.31	0.08	0.06	0.41	0.07	<u>(0.</u> 15)	(0.06)	
REGIONAL TOTALS	13.89	14.39	14.56	14.85	13.16	14.58	12.80	
Northeastern Region	10.02	14.00	14.50			14.30	12.00	13.82
z ⁵ Daggett	(0.06)	(0 04)	(0.02)	(0.09)	(0.13)	(0.01)		0 00
z4 Duchesne	3.48	3.58	2.69	3.61	3.74	4.27		0.00
7 Uinta h	4.24	3.77	2.09	3.56	3.22	<u> </u>	3.55	4.22
REGIONAL TOTALS	7,72	7.34	5.62	7.27		7,70	2.71	3.16
Southeastern Region	/ ;./2	/	5.02	1.21	7.10		6.28	7.38
& Carbon	1.97	1.71	1.90	1.92	1 76	1 6 4	0.01	
Z Emery	2.51	2.43	2.66	2.79	1.76 3.71	1.54	2.21	1.87
<i>l'</i> Grand	0.04	0.10	0.02			3.05	2.99	2.80
29 San Juan				0.12	0.25	0.04	(0.11)	(0.24
REGIONAL TOTALS	0.02	0.05	0.12	0.17	0.03	(0.04)	(0.01)	(0.13
VEATONAP IOINPS	4.25	4.63	4.94	5.91	4.67	5.34	4.57	5.04
Unknown Counties	0.32	0.47	0.25	0.05	0.09	0.74	0.06	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00 :	100.00 1	100.00	.00.00

Table 12. Percentage distribution of pheasant hunting pressure by county hunted, 1984-91.

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

Table 13.	Statewide summary of	pheasant harvest statistics, 1948-91.

Table 13.	Statewide summa	ry of pheasa <u>nt h</u>	arvest statistics, 1	948-91.	
	Total	Total	Hunter-Days	Pheasants Per	Pheasants Per
Year	Hunters	Harvest	Afield	Hunter-Day	Hunter
1948	96,534	280,914			2.91
1949	88,369	263,340	189,453	1.39	2.98
1950	92,724	249,428	235,309	1.06	2.69
1951	76,576	246,575	171,233	1.44	3.22
1952	78,773	246,559	185,383	1.33	3.13
1953	82,595	245,307	176,480	1.39	2.97
1954	82,370	260,289	201,774	1.29	3.16
1955	78,793	196,195	178,359	1.10	2.49
1956	77,826	206,239	182,512	1.13	2.65
1957	83,025	228,319	170,387	1.34	2.75
1958	88,290	309,015	220,725	1.40	3.50
1959	86,268	243,276	202,730	1.21	2,82
1960	81,976	232,812	177,719	1.31	2.84
1961	83,493	238,439	243,305	0.98	2.86
1962	86,336	262,448	209,921	1.25	3.04
1963	87,647	297,873	198,582	1.50	3.40
1964	88,242	225,775	196,314	1.15	2.56
1965	77,409	211,876	186,215	1.14	2.74
1965	78,721	249,814	209,082	1.19	3.17
1960	85,664	284,000	257,033	1.10	3.32
1967	90,453	297,752	267,788	1.11	3.29
1968	90,433 90,573	250,241	277,887	0.90	2.76
1909	90,575 78,585	250,241	244,958	1.02	3.19
1970	78,383 87,878	259,189	294,618	0.88	2.95
			327,669	0.73	2.85
1972	84,311	240,573	278,033	0.73	2.58
1973	75,968	196,012			1.96
1974	85,252	167,408	282,294	0.59	1.90
1975	77,566	143,783	234,615	0.61	
1976	74,029	151,476	214,023	0.71	2.05
1977	67,195	148,168	191,142	0.78	2.21
1978	83,800	220,398	257,305	0.86	2.63
1979	87,462	216,700	266,245	0.81	2.48
1980	84,868	228,442	249,770	0.91	2.69
1981	83,408	234,217	265,381	0.88	2.81
1982	85,368	208,437	280,624	0.74	2.44
1983	77,847	220,074	265,731	0.83	2.83
1984	76,840	192,190	258,169	0.74	2.50
1985	69,889	146,807	233,328	0.63	2.10
1986	59,987	114,389	207,346	0.55	1.91
1987	57,118	119,236	199,470	0.60	2.09
1988	54,514	97,658	184,180	0.53	1.79
1989	50,382	80,769	177,364	0.46	1.60
1990	47,025	78,944	161,634	0.49	1.68
1991	42,813	72,612	150,096	0.48	1.70
Totals		-			
(1948-91)	3,454,762	9,314,471	9,562,186	<u> </u>	_
Averages					
(1948-90)	79,348	214,927	224,097	0.97	2.66
1989 1990 1991 Totals (1948-91) Averages	50,382 47,025 42,813 3,454,762	80,769 78,944 72,612 9,314,471	177,364 161,634 150,096 9,562,186	0.46 0.49 0.48	1.60 1.68 <u>1.70</u>

HIV			All Hants					Complete 1	Hunde		
Panion and	Tatal	Tatal	T	E F				31			
County County	Parties	1 otau Hunters	Hours	l otal Rirds	Burds/ 100 Hr	Complete Hunte	Total	Total	Total Diada	Birds/	Birds/
Northern Region						Chimit i		CINOTI		TUO III	Itunter
Box Elder	27	67	76	26	34		-	-	-	100	00.
Cache	33	25	105	8	502		• •	- 5		8	B. 1
Davis	15	27	25	; -	4	n ax	14	2 2	, c	₽	10.0
Morean	} 1	i	1	•	,	6	2	71	>	I	0.0
	:	1	ı	I	I	I	1	1	1	ł	ł
KUCIN	1	ł	:	1	ł	I	ł	1	1	:	ł
Summit	ı	:	ł	1	I	I	ł	ı	1	1	I
Weber	23	45	7 0	10	14	4	6	П	~	11	1 00
REGIONAL TOTALS	86	233	276	67	24	12	11	2	. ~	1	010
Central Region								5	-	5	ACIN
Inab	1	81	11	1	11						
alt I alto	I	7		3	CC CC	1	1	I	ı	ł	I
Saut Larke	1	1	I	ŧ	1	I	1	I	1	1	;
Sanpete	11	20	174	11	16	9	61	117	20	17	1.05
Tonele	ł	1	1	1	:	;	ı	ł	I	1	ł
Utah	130	259	600	67	11	21	88	231	30	13	9° 0
Wasatch	I	:	ł	t	1	:	ł	;	1	1	
REGIONAL TOTALS	147	357	807	105	13	5	107	348	9	1	
Southern Region								2	5		
Beaver	1	1	1	1	:	1	ł	1	ł	1	I
Garfield	1	ı	1	ł	1	ł	ı	4	1	;	I
Iroa	1	Ĭ	1	I	;	ł	1		:	I	I
Kane	1	I	1	1	t	1			I	1	1
Millard	1	1	I			ł	r	1	I	I	1
Bita			ł	1	I	I	ł	1	ł	1	ł
	I	1	ł	i	ł	1	:	1	ı	1	1
Sevier	ı	1	1	I	ı	1	ł	1	ł	ł	I
Washington	I	r	ı	ı	ł	ı	I	1	ł	I	ł
Wayne	1	I.	1	1	1	;	I	ł	;	۰I	1
REGIONAL TOTALS	1	1	1	1	1	1	1	1	,	1	
Northeastern Region											
Daggett	ı	1	ı	I	ł	1	1	1	1	1	ł
Duchesne	23	98	311	52	17	7	26	70	11	13	0 50
Uintah	31	89	186	22	12	1	-		•	; 1	
REGIONAL TOTALS	4	166	497	74	15	œ	27	8	2	1	0.40
Southeastern Region								2		2	
Carbon .	1	t	ł	ı	1	1	1	:	I	ı	I
Emery	43	100	161	33	20	28	56	8	20	22	0.36
Grand	1	ł	1	ł	ł	I	1	; 1	1	1	2
San Juan	I	1	1	I	- 1	í	ł	1	1	. 1	i
REGIONAL TOTALS	\$	8	161	33	20	28	5	9	1	1 2	
CTATE TOTAL C	227	OEC					8	6	3		00
	200				4				è		

Table 14. Pheasant field bag check summary, 1991.

Tahle 15. Pheasant hunder success froud as determined by field check, 1986-91.

	14%	IVXA		1987	-	19KK		1989		1061		1661	
	Region and =	Birds/		Birds/	Birds/	llirds/	Birds/	Birds/	Birds/	Birds/	Birds/	Birds/	Rirds/
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	STATE TOTALS	. 12	019	13	0.32	=	0.35	10	00	13	0.36	2	0.42

MIGRATORY UPLAND GAME BIRDS

SUMMARY

Mourning Doves

D O V E

&

PIGEONS

The breeding density index increased slightly in 1991, and remained well below average.

Harvest statistics derived from the questionnaire indicated a decrease in number of hunters and harvest compared to 1990. Hunter success for the season decreased slightly as well.

Field bag checks indicated a decrease in hunter success on opening day. Hunters who participated hunted more hours than the previous year.

Aging of wings indicated the juvenile per 100 adult ratio decreased to 116 compared to 127 in 1990. Juvenile per 100 adult ratio remains 2 percent below the long-term average.

Band-tailed Pigeons

A band-tailed pigeon hunting permit was required again in 1991 to obtain mailing addresses for a questionnaire. Nineteen hunters purchased permits and 15 went afield. A total of 31 pigeons were harvested. Hunter interest remains low.

MOURNING DOVE

Call Count Survey

Results of the 1991 call count survey are found in Table 1 of this section. The long-term trend of the state's breeding density index (average doves heard per route) is shown in Table 2. Indices shown in each of these tables are unweighted and consequently differ from those published in the annual <u>Mourning Dove Status Report</u> compiled by the U.S. Fish and Wildlife Service. However, indicated trends are similar (Figure 1). The following is a comparison of the results of the 1991 survey to 1990 and the average for the period 1968-1990:

	<u>1991</u>	<u>Percent</u> <u>1990</u>	<u>change from</u> <u>Average</u>
Average doves heard per route Average calls heard per route	10	+9	-22
Average doves seen per route	8	-35	

In 1991, the U.S. Fish and Wildlife Service eliminated the collection of total calls heard per route.

Coo count data indicated slightly increased breeding activity in late May compared to 1990, but was 22 percent below the long-term average of doves heard per route.

<u>Harvest</u>

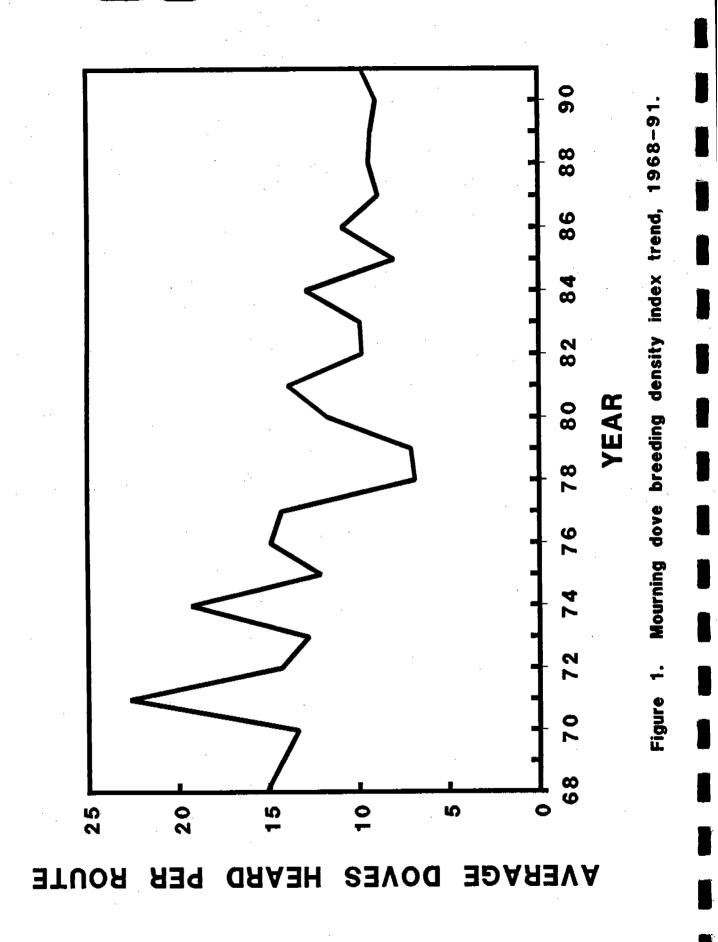
Hunter Questionnaire

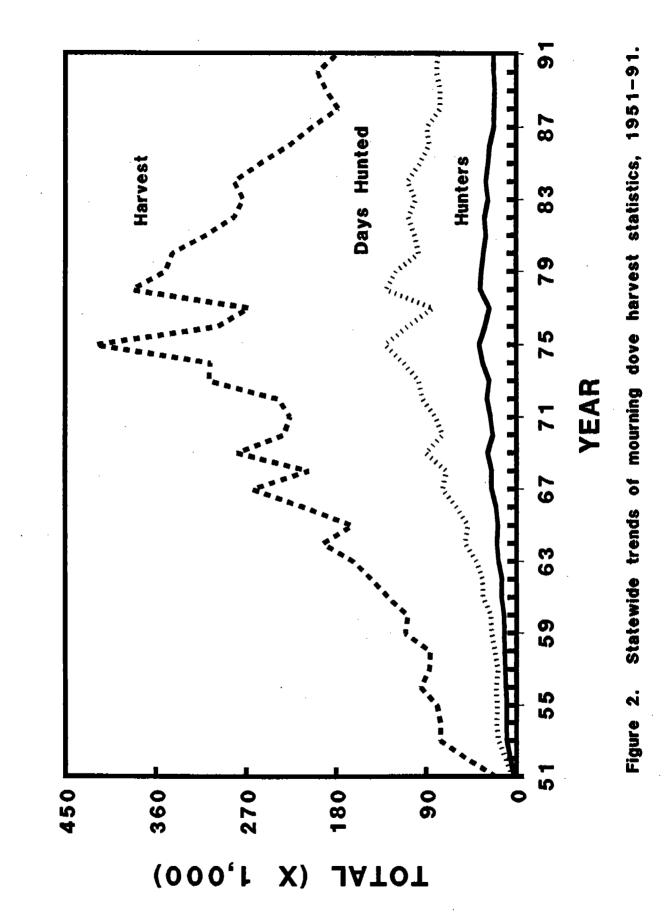
Information obtained from the hunter questionnaire for 1991 is summarized in Table 3. Long-term trends of mourning doves bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 4-6 and total statewide harvest statistics in Table 7 and Figures 2 and 3. The following is a comparison of the harvest statistics for 1991 compared to 1990 and the previous 40-year average:

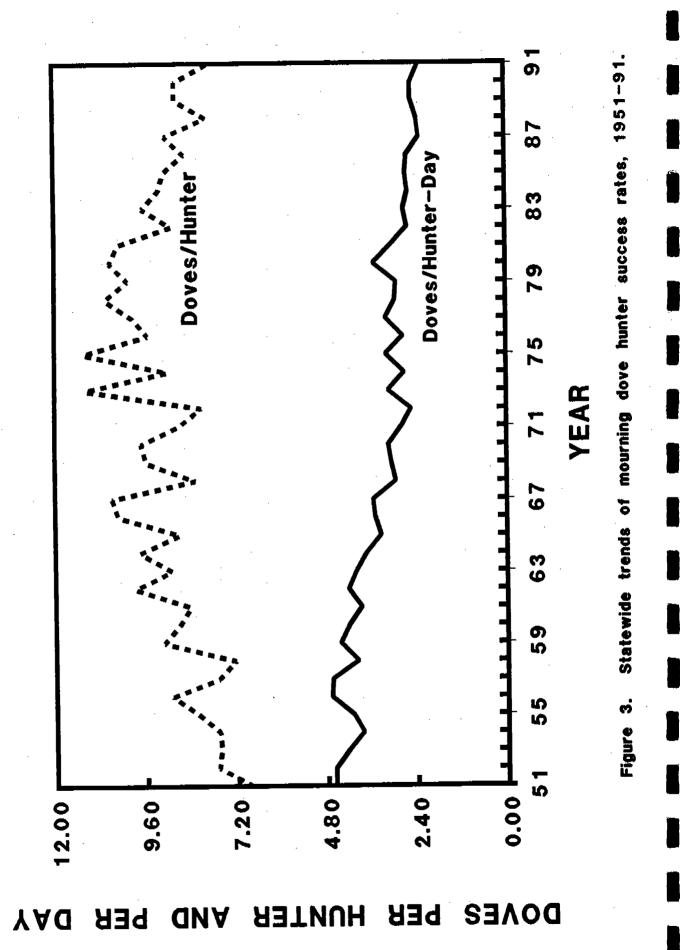
	<u>1991</u>	<u>Percen</u> 1990	t change from <u>Average</u>
Mourning dove hunters	22,632	0	- +2
Mourning doves harvested	178,853	-10	-14
Hunter-days afield	78,405	-2	+14
Mourning doves per hunter-day	2.28	-8	-32
Mourning doves per hunter	7.90	-10	-13

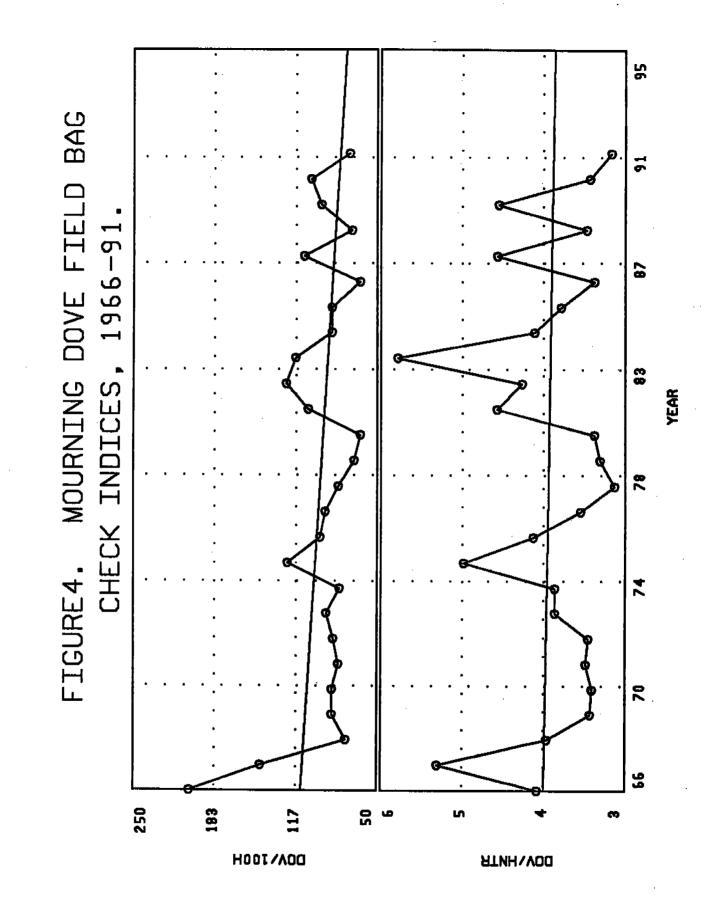
Dove hunter success was predicted to be similar to 1990 due to the second year of no significant change in the spring dove call count index and summer drought. Hunter success dropped slightly from 1990. Total harvest decreased 10 percent compared to 1990. Numbers of dove hunters, hunter-days afield and doves per hunter-day all decrease slightly. August temperatures and precipitation were above normal in 1991.

Long-term harvest trends are depicted in Figure 2.









Field Bag Checks

A summary of field bag check data for 1991 is shown in Table 8. Hunter success trends determined via this method are shown in Table 9. Results of the 1991 survey compared to 1990 and the 10-year average (1981-90) follow:

	<u>1991</u>	<u>Percent</u> 1990	<u>change from</u> <u>Average</u>
Total hunters checked Total hours hunted	1,027 3,800	-23 -21	-39 -40
Doves per hunter (complete hunts) Doves bagged per 100 hours (complete hunts)	2.70 73	-10 -30	-31 -21
Average hours per hunter-day (complete hunts)	3.70	+28	-6
Hours hunted per dove bagged (complete hunts)	1.37	+37	+31

This year's hunt opened on Monday, September 2, 1991. Hunter participation could have been off a bit because of the weekday opening. Field bag checks indicated a decrease in hunter success. The total number of hunters checked was down 23 percent from 1990. Dove hunters spent more time afield per hunter-day than in 1990, and slightly more time was spent per dove bagged, according to field bag check data.

Age Composition of the Harvest

A summary of the age composition of harvested mourning doves from 1981 through 1991 is contained in Table 10. Hatching dates for immature doves harvested in the Northern Region since 1982 are shown in Table 11. Hatching dates for immature doves harvested in Utah in 1991 are shown in Table 12. Following is a comparison of data collected in 1991 compared to 1990 and long-term averages (1966-90):

	<u>1991</u>	<u>Percent</u> 1990	<u>change from</u> <u>Average</u>
Sample size Immatures/100 adults Percent of immatures hatched on:	1,855 116 (N. Region)	-37 -10	-42
August 3 or later	· · · · · ·		
July 25 or later Before July 25	·		

Sample size decreased 37%. The 116 immatures per 100 adults in the harvest was down 10 percent from the previous year and 2 percent below the 25-year average.

Region and	Route	Total Doves	Total Doves
County	Number	Heard / Route	Seen / Route
Northern Region	· .		
Box Elder	R1500	· 1	16
Summit	R1020	3	0
REGIONAL TOTALS	· · · · · ·	4	16
Central Region			
Juab	R2830	38	10
REGIONAL TOTALS		38	10
Southern Region	·		
Beaver	R3820	ROUTE NOT RUN	
Garfield	R1090	0	0
Iron	R4000	15	5
Millard	R3640	8	0
Sevier-Sanpete	R0370	2	13
Washington	R4310	14	7
Wayne-Sevier	R0660	0	0
REGIONAL TOTALS		39	25
Northeastern Region			
Duchesne	R0080	7	5
Unitah	R0220	3	1
REGIONAL TOTALS		10	6
Southeastern Region	<u> </u>	· · · · · · · · · · · · · · · · · · ·	
Emery	R0540	5	17
San Juan	R1171	38	31
San Juan	R1450	3	2
REGIONAL TOTALS		46	50
		<u></u>	
STATE TOTALS		137	107
STATE AVERAGES		10	8
PERCENT CHANGE			
(from previous year)		+9	-35

Table 1. Summary of the mourning dove call-count survey for 1991.

Table 2. Regional and county summary of mourning dove breeding population trend as indicated by the number

Country	Route					Number	of Dove	s Heard	Number of Doves Heard Per Route	<u>م</u>						
COUNTY	Number	1977	8791	6261	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1661
Northern Region					1			i								
Box Elder	R1500	4	7	•	4	90	I	l	0	0	T	4	¢	•	T	-
Summit	R1020	10	ŝ	Ŷ	ŝ	4	5	ł	-	4	N	3	ŝ	•	6 0	. 🕶
REGIONAL TOTALS		14	L	15	6	12	s	-	-	4	.0	v.	S	5	4	4
Central Region																
Juah.	R2830	25	31	15	ЭІ	ដ	6	25	19	20	19	16	53	13	36	8
REGIONAL TOTALS		25	31	15	ы	n	6	25	19	20	61	16	ส	13	36	8 8
Southern Region																
Beaver	R3820	Đ	•	ŝ	6	7	13	••	9	9	4	17	13	14	•	I
Garfield	R1090	1	•	0	ð	•	7	Ċ	15	÷	T		0	16	c	Ċ
Iron	R4000	27	12	14	40	36	21	19	31	41	26	ន	20	10	13	15
Millard	R.3640	29	œ	4	7	.01	6	ŝ	14	7	7	••	N)	4	Vo	œ
Sevier-Sanpete	R0370	7	•	•	6	0	•	e	s	4	4	•	•	ы	9	7
Washington	R4310	15	1	4	e	Ŷ	•	14	1	0	9	۲	Ŧ	9	12	14
Wayne-Sevier	R0660	8	. 1	2	S	14	4	:	17	•	7	¢	••	۲	s	•
REGIONAL TOTALS		82	22	29	62	82	49	47	68	59	4S	54	45	59	6	6
Northeastern Region																
Duchesne	R0080	14	7	7	~	13	٢	0	-	œ	m	4	80	61	11	5
Unitah	R0220	7	4	I	49	19	l	¢	10	N	20	12	9	•	7	3
REGIONAL TOTALS		21	9	7	50	32	œ	٩	H	13	53	16	14	13	13	≘
Southeastern Region																
Emery	R0540	4	10	•	٢	22	7	11	10	ę	01	11	15	90	1	Ś
San Juan	R1170	67	24	78	14	38	26	Œ	57	25	60	IC .	37	8	н	38
San Juan	R1450	1	3	1	3	0	24	\$	٢	7	0	l	7	-	. •	m
REGIONAL TOTALS		11	37	38	24	60	57	46	74	Ŕ	70	43	54	52	33	\$
STATE TOTALS		214	103	66	176	208	128	128	194	126	163	134	141	140	135	137
STATE AVERAGES		14.27	6.87	6.60	11.73	13.87	8.53	8.53	12.93	8.40	10.87	8.93	9.40	9.33	9.00	9.79
PERCENT CHANGE			1		.											
(Irom previous year)		7	-52	4	*	18		-	23	-35	29	-18	5	7	7	-

hunting	pressur	e by region	and count	y, 1991.			
REGION AND COUNTY	SIZE*	HUNTER-DAYS AFIELD	BAGGED		PRESSURE	% OF HARVEST	
NORTHERN REGION BOX ELDER CACHE	161	7,550	17,170 9,915		9.63 6.43	9.60	
DAVIS	78 34	2,418	4,279	1.77	3.08	2.39	
MORGAN	15 11	504 504 156	1,165	2.31	0.64	0.65	
RICH	11	504	1,739	3.45	0.64	0.97 0.16	
SUMMIT WEBER	51	156 3,287	4,279	1.30	4.19	2.39	
REGIONAL TOTALS	353	19,466	38,828	1.99	24.83	21.71	
CENTRAL REGION							
JUAB	134 84	4,714 4,418	15,709	3.33	6.01	8.78	
SALT LAKE	84	4,418	8,941	2.02	5.64 4.10	5.00	
SANPETE TOOELE	60 126 277	3,218 6,697	15,308	2.29	8.54	4.84 8.56	•
UTAH	277	15,482	29.278	1.89	19./5	10.3/	
WASATCH	17	800	1,687	2.11	1.02	0.94	
REGIONAL TOTALS	698	35,332	79,588	2.25	45.06	44.50	
SOUTHERN REGION							
BEAVER	19	1,043	3,461	3.32 2.40	1.33	1.94	
GARFIELD IRON	5	260 1,965	626	2.40	0.33 2.51	0.35 3.07	
KANE	52	539	3,49/ 1 635	2.00	0.69	0.91	
MILLARD	112	5,305	1,635	3.03 3.13	6.77	9 29	
PIUTE	2	487	1,217	2.50	0.62	0.68	
SEVIER	58	4,105	8,576	2.09	5.24	4.80	
WASHINGTON	45	2,539	9,220	2.09 3.63	3.24	5.16	
WAYNE	2	69	52	0.75	0.09	0.03	
REGIONAL TOTALS	288	16,317	46,900		20.81	26.22	
NORTHEASTERN REG	;ion						
	1	17	17	1.00	0.02	0.01	
DUCHESNE UINTAH	29	2,104 2,035	4,662 2,157	2.21	2.68 2.60	2,61 1,21	
REGIONAL TOTALS			6,836	1.64	5.30	3.82	
SOUTHEASTERN REG CARBON	FION 24	1,026	2,209	2.15	1.31	1.24	
EMERY	24	1,235	2,070	1.68	1.58	1.16	
GRAND	5	278	313	1.13	0.36	0.18	
SAN JUAN	9	591	2,104	3.56	0.75	1.18	*
REGIONAL TOTALS	62	3,131	6,697	2.14	3.99	3.74	
UNKNOWN	0	0	0	0.00	0.00	0.00	
STATE TOTALS	1,463	78,405	178,853	2.28	100.00	100.00	
+							-

Table 3. Summary of mourning dove hunter success and distribution of harvest and hunting pressure by region and county, 1991.

* Total hunter trips from questionnaire returns.

		1			Vaar		·····	
Region and	1004	1005	1986	1987	<u>Year</u> 1988	1989	1990	1991
County	1984	1985	1990	1901	1900	1909	1990	7227
Northern Region Box Elder	3.19	2.18	3.18	3.46	3.41	2.83	2.73	2.27
	2.05	2.34	1.92	1.79	1.92	2.83	1.67	1.97
Cache	2.05	2.34	1.24	1.18	1.51	1.31	1.53	1.77
Davis	1.88	1.55	2.04	3.00	2.36	1.03	1.73	2.31
Morgan	6.69	2.28	3.72	0.00	2.63	1.26	1.95	3.45
Rich	3.89		1.08	2.50	2.03	1.61	7.00	1.78
Summit	3.89 1.55	1.92	1.63	1.15	1.21	1.88	1.48	1.30
Weber				2.19		2.20	2.02	1.99
REGIONAL TOTALS	2.27	1.92	2.26		2.09		_2.02	1.99
<u>Central Region</u>	4.44	5.16	4.54	2.95	3.25	4.45	3.70	3.33
Juab Salt Lake				2.95	1.84	4.45	2.37	2.02
	1.95	1.91	1.95 3.51	1.88	2.75	2.10	2.37	2.69
Sanpete	2.98 2.90	2.71 2.55	2.87	2.17	2.75	2.88	1.90	2.29
Tooele	2.90		2.87	2.30	1.97	2.08	2.05	1.89
Utah		2.50						
Wasatch	2.20	1.50	1.97	0.82	1.20	1.22	2.42	2.11
REGIONAL TOTALS	2.60	2.71	2.72	2.11	2.23	2.55	2.41	2.25
Southern Region	5 4 F	- 4-	~ ~~					
Beaver	3.45	3.43	2.02	1.72	3.50	4.35	1.71	3.32
Garfield	1.80	0.60	0.20	1.67	3.86	2.27	2.34	2.40
Iron	3.07	4.99	3.54	3.10	3.71	2.91	4.38	2.80
Kane	5.76	2.54	1.06	3.06	1.71	3.11	1.00	3.03
Millard	4.25	4.30	3.58	2.83	3.01	3.54	4.42	3.13
Piute	1.94	1.60	1.62	1.67	4.17	0.00	1.45	2.50
Sevier	2.11	2.33	1.82	2.15	2.03	2.70	2.18	2.09
Washington	2.62	3.17	3.90	2.68	3.37	2.12	2.81	3.63
Wayne	2.00	2.47	2.57	5.65	2.29	3.53	0.61	0.75
REGIONAL TOTALS	3.22	3.53	2.85	2.62	2.90	3.01	3.20	2,87
Northeastern Region								
Daggett	1.48	0.00	1.20	0.83	0.00	0.25	2.00	1.00
Duchesne	1.83	2.50	2.70	2.46	2.83	1.42	1.85	2.21
Uintah	2.61	2.39	1.91	2.82	2.68	2.33	3.17	1.06
REGIONAL TOTALS	2.20	2.39	2.05	2.55	2.68	1.82	2.46	1.64
Southeastern Region								
Carbon	2.13	2.76	2.76	1.94	2.06	0.75	1.18	2.15
Emery	2.24	3.28	1.62	2.41	2.87	1.77	2.04	1.68
Grand	2.46	2.00	4.28	2.41	2.00	2.18	4.04	1.13
San Juan	3.51	3.38	3.26	4.08	2.91	4.22	1.69	3.56
REGIONAL TOTALS	2.41	3.01	2.54	2.76	2.56	1.85	2.07	2.14
Unknown Counties	0.00	0.00	0.00	1.93	1.30	2.86	0.00	0.00
STATE TOTALS	2.71	2.59	2.65	2.61	2.28	2.49	2.49	2.28

Table 4. Summary of mourning doves bagged per hunter-day by region and county, 1984-91.

Region and					Year			····
County	1984	1985	<u> 1986 </u>	<u>1987</u>	1988	1989	1990	1991
<u>Northern Region</u>	•						_	
Box Elder	9.96	5.48	10.36	11.51	10.31	12.06	9.95	9.60
Cache	4.71	3.85	2.46	2.99	2.94	4.87	3.34	5.54
Davis	3.35	2.91	2.08	1.93	3.27	2.01	2.57	2.39
Morgan	0.30	0.76	0.44	0.18	0.61	0.44	0.59	0.65
Rich	0.77	0.55	1.08	0.00	0.66	0.26	0.38	0.97
Summit	0.25	0.84	0.12	0.18	0.65	0.32	0.51	0.16
Weber	. 3.57	4.21	2.71	2.12	3.67	3.54	3.54	2.39
REGIONAL TOTALS	22.92	18.61	19.26	18.92	22.15	23.50	20.88	21.71
<u>Central Region</u>								
Juab	9.42	10.97	11.09	8.36	8.09	9.79	9.45	8.78
Salt Lake	7.90	5.59	5.50	5.39	4.37	3.56	5.71	5.00
Sanpete	3.49	4.08	5.54	2.88	4.30	4.34	3.23	4.84
Tooele	8.67	7.42	11.39	8.55	10.92	8.58	6.37	8.56
Utah	13.94	17.75	14.38	20.06	16.17	16.27	12.83	16.37
Wasatch	0.86	0.98	0.52	0.61	0.90	0.54	1.08	0.94
REGIONAL TOTALS	44.27	46.79	48.42	45.87	44.78	43.08	38.67	44.50
Southern Region						· · · · · ·		
Beaver	2.31	1.55	1.82	1.67	1.76	2.28	1.29	1.94
Garfield	0.26	0.02	0.01	0.12	0.25	1.09	0.92	0.35
Iron	1.68	4.05	3.82	3.24	3.22	3.07	6.20	3.07
Kane	1.41	0.28	0.30	0.66	0.33	0.64	0.07	0.91
Millard	10.20	10.25	9.42	9.80	11.73	9.92	13.35	9.29
Piute	0.45	0.56	0.19	0.24	0.46	0.00	0.57	0.68
Sevier	3.98	3.24	3.50	4.67	3.59	6.11	4.05	4.80
Washington	2.37	2.44	3.26	2.28	1.10	2.62	4.99	5.16
Wayne	0.11	0.35	0.33	1.35	0.14	0.73	0.11	0.03
REGIONAL TOTALS	22,77	22.75	22.64	24.05	22,63	26.46	31.57	26.22
Northeastern Regio							-	
Daggett	0.42	0.00	0.16	0.12	0.00	0.02	0.06	0.01
Duchesne	0.99	1.42	1.05	0.76	1.27	0.85	1.62	2.61
Vintah	2.66	2.78	1.92	2.81	2.46	1.70	2.46	1.21
REGIONAL TOTALS	4.07	4,20	3.14	3.70	3.73	2.57	4.15	3.82
Southeastern Regio								
Carbon	2.39	2.93	1.65	0.74	1.67	0.44	0.41	1.24
Emery	1.45	3.35	1.83	2.66	3.70	2.23	2.85	1.16
Grand	0.88	0.27	1.24	0.84	0.18	0.26	0.96	0.18
San Juan	1.24	1.10	1.81	2.54	0.59	1.24		1.18
REGIONAL TOTALS	5.97	7.65	6.54	6.80	6.16	4.17	4.74	3.74
Unknown counties	0.00	0.00	0.00	0.64	0.53	0.22	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 5. Percentage distribution of mourning dove harvest by region and county, 1984-91.

Region and					Year		,	
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region					_			
Box Elder	8.10	6.68	8.50	7.59	7.07	10.62	9.07	9.63
Cache	5.97	4.37	3.34	3.81	3.59	5.43	4.96	6.43
Davis	5.24	5.04	4.38	3.75	5.08	3.80	4.19	3.08
Morgan	0.41	1.18	0.57	0.13	0.61	1.06	0.85	0.64
Rich	0.30	0.64	0.76	0.00	0.59	0.52	0.49	0.64
Summit	0.17	1.15	0.28	0.16	0.70	0.49	0.18	0.20
Weber	5.97	6.66	4.35	4.22	7.11	4.70	5.94	4.19
REGIONAL TOTALS	26.16	25.74	22.17	19.69	24.77	26.62	25.67	24.83
Central Region								
Juab	5.50	5.64	6.37	6.47	5.82	5.49	6.35	6.01
Salt Lake	10.51	7.75	7.36	9.02	5.52	4.07	5.99	5.64
Sanpete	3.04	4.00	4.12	3.51	3.65	4.51	2.62	4.10
Tooele	7.76	7.73	10.36	8.99	11.08	7.41	8.33	8.54
Utah	16.38	18.88	17.53	19.93	19.18	19.53	15.52	19.75
Wasatch	1.01	1.73	0.69	1.70	1.77	1.11	1.11	1.02
REGIONAL TOTALS	44.21	45.73	46.43	49.64	47.09	42.12	39.91	45.06
Southern Region								
Beaver	1.74	1.20	2.34	2.22	1.18	1.30	1.88	1.33
Garfield	0.37	0.11	0.12	0.16	0.15	1.20	0.98	0.33
Iron	1.42	2.15	2.82	2.38	2.03	2.63	3.52	2.51
Kane	0.63	0.29	0.73	0.49	0.46	0.52	0.18	0.69
Millard	6.23	6.33	6.86	7.89	9.11	6.98	7.50	6.77
Piute	0.60	0.93	0.31	0.32	0.26	0.05	0.98	0.62
Sevier	4.89	3.69	4.99	4.96	4.14	5.65	4.63	5.24
Washington	2.35	2.04	2.18	1.94	0.76	3.07	4.42	3.24
Wayne	0.15	0.38	0.33	0.54	0.15	0.52	0.46	0.09
REGIONAL TOTALS	18.38	17.12	20.68	20.95	18.26	21.92	24.54	20.81
Northeastern Regio		_ +/ • +2	20.00	20.95	10.20	21.72		20.01
Daggett	0.75	0.07	0.35	0.32	0.06	0.22	0.08	0.02
Duchesne	1.40	1.51	1.02	0.71	1.05	1.49	2.18	2.68
Vintah	2.65	3.09	2.63	2.27	2.14	1.82	1.93	2.60
REGIONAL TOTAL	4.80	4.66	4.00	3.31	3.26	3.53	4.19	5.30
Southeastern Regio		. 4.00	4.00	. 3.31	J.20		4.12	
Carbon	2.91	2.82	1.56	0.87	1.90	1.44	0.87	1.31
	1.68	2.82	2.96	2.52	3.02	3.15		1.51
Emery	0.93	0.35		2.52		0.30	3.47	0.36
Grand			0.76		0.21		0.59	
San Juan	0.91	0.87	1.44	1.42	0.48	0.73	0.75	0.75
REGIONAL TOTALS	6.44	6.75	6.72	5.62	5.62	5.62	5.68	3.99
Unknown counties	0.02	0.00	0.00	0.76	0.96	0.19	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 6. Percentage distribution of mourning dove hunting pressure by region and county, 1984-91.

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**		Total	Hunter-Days	Doves Per	Doves Per
Year	Hunters	Harvest	Afield	Hunter-Day	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
956	10,744	95,729	20,411	4.69	8.91
.957*	11,298	86,769	18,620	4.66	7.68
1958	11,853	85,934	21,591	3.98	7.25
959	12,142	110,856	24,911	4.45	9.13
.960	12,440	108,477	25,766	4.21	8.72
.961	15,192	128,001	33,434	3.89	8.42
962	14,663	144,826	34,281	4.23	9.89
963	18,258	162,769	40,490	4.02	8.91
964	19,829	193,538	51,671	3.75	9.76
.965	18,710	164,087	48,835	3.36	8.69
966	20,594	212,696	60,608	3.51	10.33
967	25,161	263,949	74,171	3.56	10.49
968	25,105	207,922	70,186	2.96	8.28
969	29,131	279,311	90,965	3.07	9.59
970	23,908	232,469	73,984	3.14	9.72
971	26,064	226,645	81,271	2.79	8.70
972	29,341	238,354	94,046	2.53	8.12
973	27,435	307,062	97,788	3.14	11.19
974	34,021	306,076	112,967	2.71	9.00
975	37,378	420,308	131,312	3.20	11.24
976	31,293	298,505	108,780	2.74	9.54
977	26,905	267,487	83,218	3.21	9.94
978	35,985	383,696	130,173	2.95	10.66
979	34,903	351,161	120,459	2.92	10.06
980	32,627	343,851	97,644	3.52	10.54
981	30,060	310,068	101,728	3.05	10.31
982**	31,756	282,188	107,728	2.62	8.89
983	28,258	272,979	100,568	2.71	9.66
984	30,573	282,307	108,793	2.59	9.23
985	28,183	256,045	96,507	2.65	9.09
986	26,583	226,985	87,084	2.61	8.54
987***	22,553	204,030	89,378	2.28	9.05
988	22,457	178,469	76,219	2.34	7.95
989	21,696	190,328	76,372	2.49	8.77
990	22,700	199,007	80,076	2.49	8.77
991	22,632	178,853	78,405	2.28	7.90
`otals	, ~~ _				
1951-91)	911,299	8,502,704	2,822,482		_
verages			-,,		
······································		208,096	68,602	3.36	9.08

**Bag limit increased to 15.

***Bag limit reduced to 10.

			All Hunts					Complete Hunts	lunts		
Posion and	Tatal	Tatat	Total	Total	Birds/	Complete	Total	Total	Total	Birds/	Birds/
County	Parties	Hunters	Hours	Birds	100 Hr	Hunds	Hunters	Hours	Birds	100 Hr	Hunter
Northern Region											
Box Edder	23	147	142	291	20S	L .	15	11	Ř	200	17.1
Cache	9	12	œ	16	200	1	1	;	ł	;	1
Davis	14	28	ŧ	41	137	e	16	19	8	158	1.88
Morgan	ł	1	;	1	I	I	1	1	;	I	1
Rich	1	1	ł	١	1	1	I	ı	ł	1	1
Sunnit	1	1	1	I	I	I	1	1	1	t	ł
Welter	12	20	22	30	120	ا م	11	15	11	13	1.00
RECIONAL TOTALS	78	207	205	378	184	81	4	51	75	147	1.79
Central Region											
	143	312	1.142	614	54	88	183	711	456	64	2.49
Salt Lake	2	8	106	28	26	Ę	÷	28	4	14	0.50
Sannete	1	t	1	1	I	I	;	I	ł	1	1
Toolo	1	ı	:	ł	1	ı	1	1	ł	1	1
Utah	189	427	1.574	1,076	89	131	302	1,141	865	76	2.86
Westerh	I	1	I	ļ	ł	I	ı	ı	1	:	1
RECIONAL TOTALS	342	769	2.822	1.718	61	222	403	1,880	1,325	70	2.69
Southern Region				,							
Beaver	ł	:	1	1	ı	ı	L	ı	1	ł	ł
Garfield	I	:	ł	;	I	I	:	1	;	ł	;
Iron	I	ı	:	1	ı	I	1	1	1	I	I
Kane	t	1	:	ł	1	1	ı	:	ł	1	:
Millard	ı	:	1	1	1	I	I	1	1	I	I
Piute	t	ı	1	ł	:	1	1	1	ı	1	I .
Sevier	1	I	;	ł	I	ł	1	ı	ł	1	ł
Washington	1	ı	I	ı	ı	I	1	I	I	1.	I
Wayne	1	1	1	. I	ı	1	,	1	t	•	1
REGIONAL TOTALS		:	1	l	r	I	,	1	1	+	1
Northeastern Region											
Daggett	:	ı	ı	I	I	I	1	1	ł	1	1
Duchesne	I	1	I	1	1	1	1	:	1	1	I
Uintah	1	1	1	1	;	1	•	"	1	,	
REGIONAL TOTALS	I	;	1	1	,	1	1	•	:	:	•
Southeastern Region											
Carbon	•••	v a	9	0	I j	1	1 1	1	: 1	1 9	
Emery	17	20	ŝ	6	281	m	•	15	ŧ	000	hc.
Grand	ı	ı	I	ı	1	t ·	1 •	1 •	1 1	: 5	
San Juan	•	-	11	5	28 20	-	-	7	~ i		
REGIONAL TOTALS	19	32	51	9 <u>1</u>	208	4	-	=	8	294	
LEHI CHECK STATION	189	427	1.574	1,076	89	131	302	1,141	885	2	7.82
NEPHI CHECK STATION	143	312	1,142	614	54	88	1 <u>8</u> 3	11	456	64	5- 6 9
THIOKOL CHECK STATION	2	681	831	370	\$	1	t	1	1		1
	3										

	L Yard		Š				1020					
Region and	Birds/	Birds/	Birds/	Birds/	Rirds/	Reds/	Rirde/	Rirde/	Itimdo/	Diada		
County	100 Hr	Hunter	100 Hr	Hunter	100 Hr	Hanter	Hunter	100 11r	Hunter	100 Hr	Bunder	Ibrds/
Northern Region												IT AAT
Box Elder	131	5.98	143	5.52	81	3.21	110	4.55	38	2.20	-200	766
Cacke	163	5.33	ł	1	1	1	1	l I	ŝ		007	-
Davis	8	2.74	64	1.20	33	0.50	160	5.00	110	- 11	: 12	: 6
Morgan	ł	ł	:	I	1	I	I	I	1	1		00'1
Rich	ł	1	1	1	1	1	1	1	1			1
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LEHI CHECK STATION	50	2.39	78	3.23	50	2.19	91	3.47	65	2.43	76	2.86
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Table 9. Mourning dove hunter success trend as determined by field bag chec

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P = Last primary molted.

BAND-TAILED PIGEON

Banding

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

<u>Harvest</u>

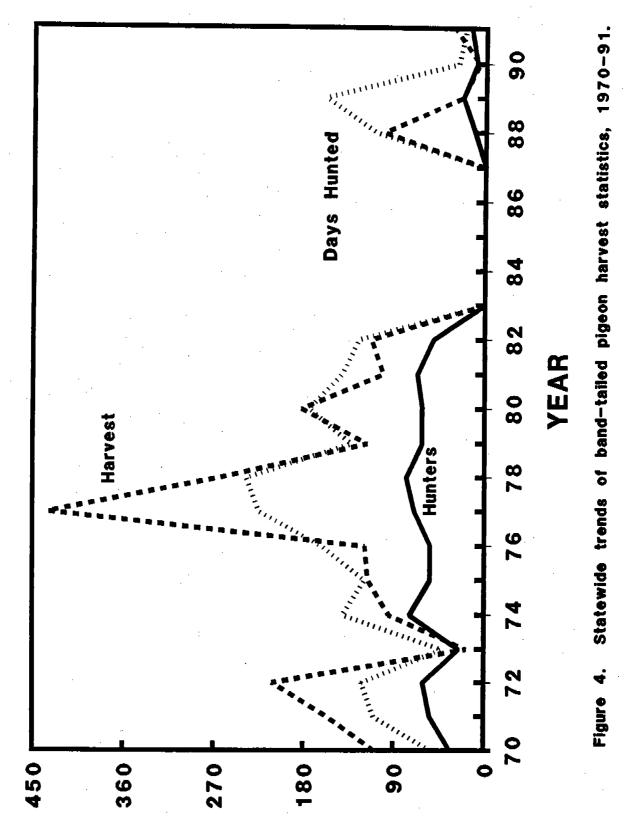
Results of the 1991 band-tailed pigeon harvest is in Table 13. Permits were required in 1991 and a questionnaire was sent to participants. Only 19 hunters purchased the \$3.00 band-tailed pigeon permit in 1991. Harvest trends since 1970 are shown in Figures 4 & 5 and Table 14.

		Percent	<u>change from</u>
	<u>1991</u>	1990	Average
Band-tailed pigeon hunters	15	+67	-62
Band-tailed pigeon harvest	31	+343	-71
Hunter-days afield	20	-29	-81
Pigeons per hunter-day	1.50	+477	+93
Pigeons per hunter	2.10	+163	· -5

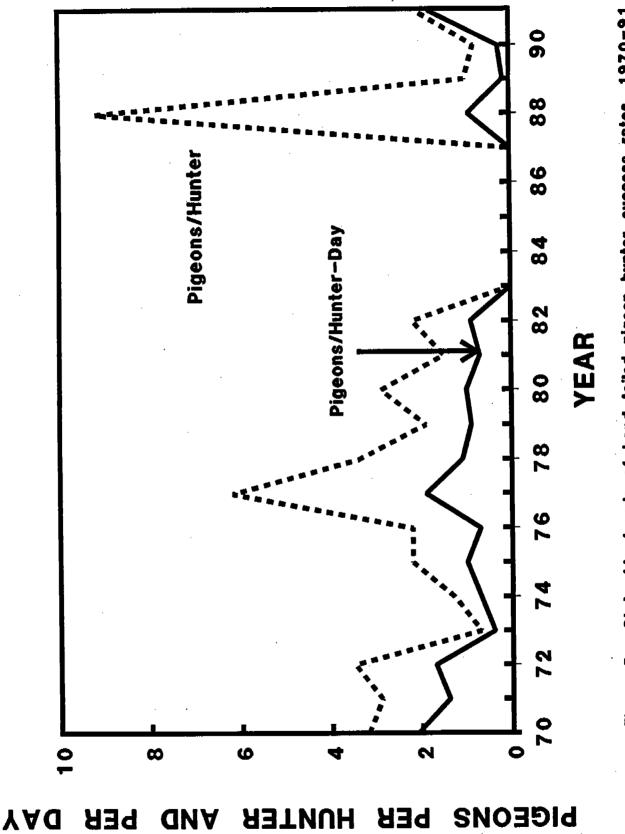
Band-tailed pigeon hunters afield increased slightly from 1990, but remains 62 percent below the long-term average. Hunter success rates increased substantially from 1990, however, only 31 birds were harvested. Pigeon harvest was reported in Beaver, Millard and Washington counties. Most of the harvest for 1991 was reported in Beaver County.

	Participating	Hunters	Hunter Days	Days	llarvest	st			
	•						Pigeons/	Percent of	Percent of
Area Hunted	Reported	Calc.	Reported	Calc.	Reported	Calc.	Hunter-Day	Pressure	Harvest
Beaver County	4	9	s	6	10	15	2.0	40	48
Blue Mountain-Elk Ridge	¥	*	*	•	•	•	¥	•	¥
Carbon County	¥	*	*	¥	*	*	¥	*	*
Garfield County	•	*	•	÷	*	*	÷	*	¥
Iron County	•	*	•	•	¥	•	*	*	*
Kane County	*	*	¥	•	+	•	*	*	ŧ
LaSal Mountain	*		.*	•	÷	*	·	*	*
Millard County	4		7	10	9	6	0.9	40	29
Piute County	•	•	*		*	÷	¥	ŧ	*
Utah County	*	•	*	ŧ	*	•	¥	*	*
Washington County	2	£	7	, eo	o.	L	2.5	20	24
Wayne County	•		*	•	*	*	÷	*	¥
Mixed Counties								¥	*
(Washington and Iron)	•	•	•	*	÷	•	*	•	*
Totals	10	15	14	20	21	31	1.50	100	100

Projection Factor = 1.4615385 (19 permits issued/13 questionnaires returned)



ΤΟΤΑΓ





Year	Total Hunters	Total Harvest	Hunter-Days Afield	Pigeons/Hunter-Day	Pigeons/Hunter	
970	34	109	53	2.10	3.20	
971	54	156	110	1.40	2.90	
972	61	211	122	1.70	3.50	
973	25	18	42	0.40	0.70	
974	74	95	141	0.70	1.30	
975	54	116	119	1.00	2.20	
976	54	119	162	0.70	2.20	
977	70	435	225	1.90	6.20	
978	78	264	238	1.10	3.40	
979	62	117	133	0.90	1.90	
980	62	182	175	1.00	2.90	
981	67	101	142	0.70	1.50	
982	51	113	125	0.90	2.20	
983		_	-	-		
984	_		_	_	-	
985	-	-	-	-		
986	-	-	-	· <u> </u>	_	
987		_		·		
988	11	101	109	0.93	9.20	
989	23	24	159	0.15	1.00	
990	9	7	28	0.26	0.80	
991	15	31	20	1.50	2.10	
otals						• •
970-91)	804	2,199	2,103		-	·
verages		······································	,			
970-90)	39	108	103	0.78	2,22	

CHUKAR PARTRIDGE

SUMMARY

The statewide breeding population of chukars decreased in 1991 following the sixth straight year of drought over much of Utah. Late winter and early spring precipitation, critical to successful chukar production, was below average.

Results of the brood survey indicated that brood production was above average. Chukar density increased during 1991, and was below average.

Harvest statistics from mail questionnaires reflected a decrease in harvest. Hunter success (chukars per hunter-day) increased slightly from 1990. Chukar hunters and time afield decreased slightly from the year before. Hunting success on opening weekend, as measured by field bag checks, indicated decreased hunter success.



Brood Counts

Results of the annual random brood survey for 1991 are shown in Table 1 of this section. Long-term trends of young per adult ratios, mean brood size and chukars observed per 100 hours are found in Tables 2-4 and Figure 1. Following are the survey results for 1991 compared to 1990 and the 10-year (1981-90) average:

	<u>1991</u>	<u>Percent</u> <u>1990</u>	<u>change from</u> <u>Average</u>
Total chukars observed	. 76	-75	-89
Young per 100 adults	533	+87	+24
Mean brood size	7.33	+33	+4
Chukars observed per 100 hours	267	+9	-49
Total hours effort	29	-77	-78

Harvest data for 1990 indicated breeding populations for 1991 were still significantly below statewide averages. The 1990-91 winter weather was drier than normal October through February and colder than normal December through January. Late winter and early spring precipitation (January-April) was below average over the entire state (Figure 4). Drought continued over most of Utah for the sixth straight year.

Effort on chukar brood counts decreased significantly in 1991 and remained below average.

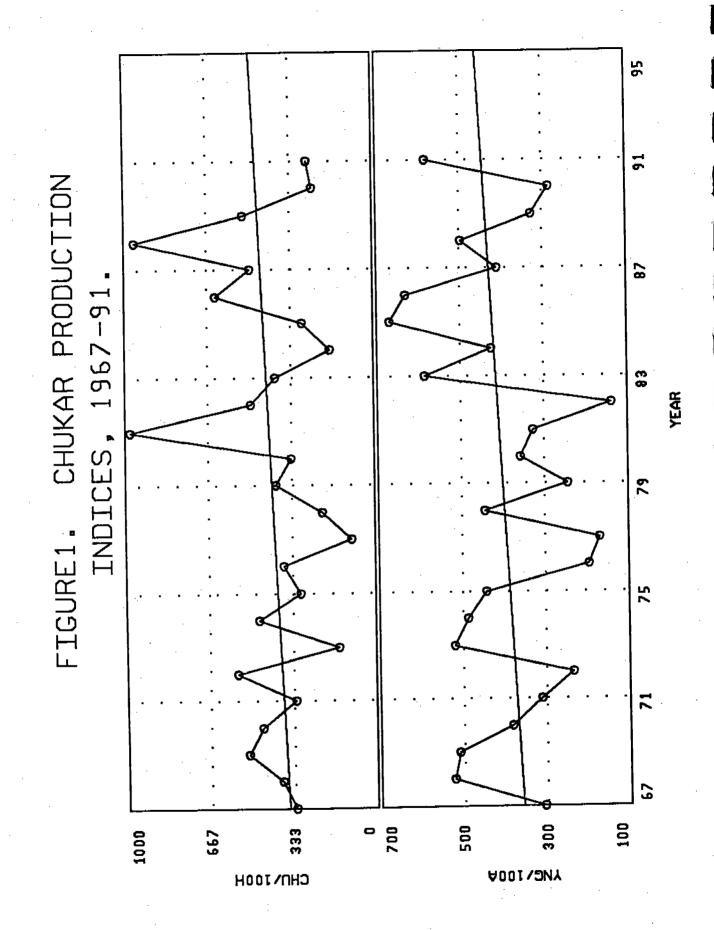
Brood count sample sizes were again small or nonexistent for all regions except the Central region. Chukar density was below the 10-year average and production was up from 1990.

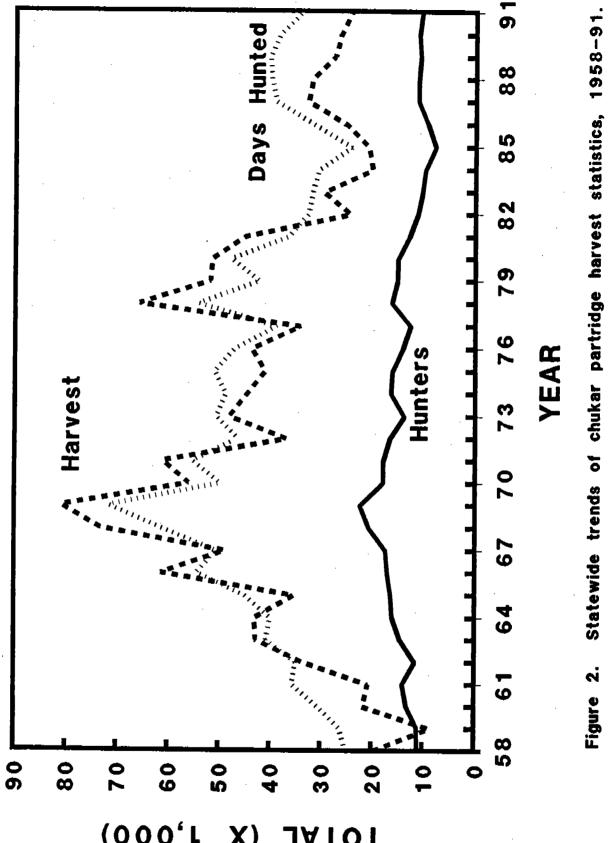
Harvest

<u>Hunter Questionnaire</u>

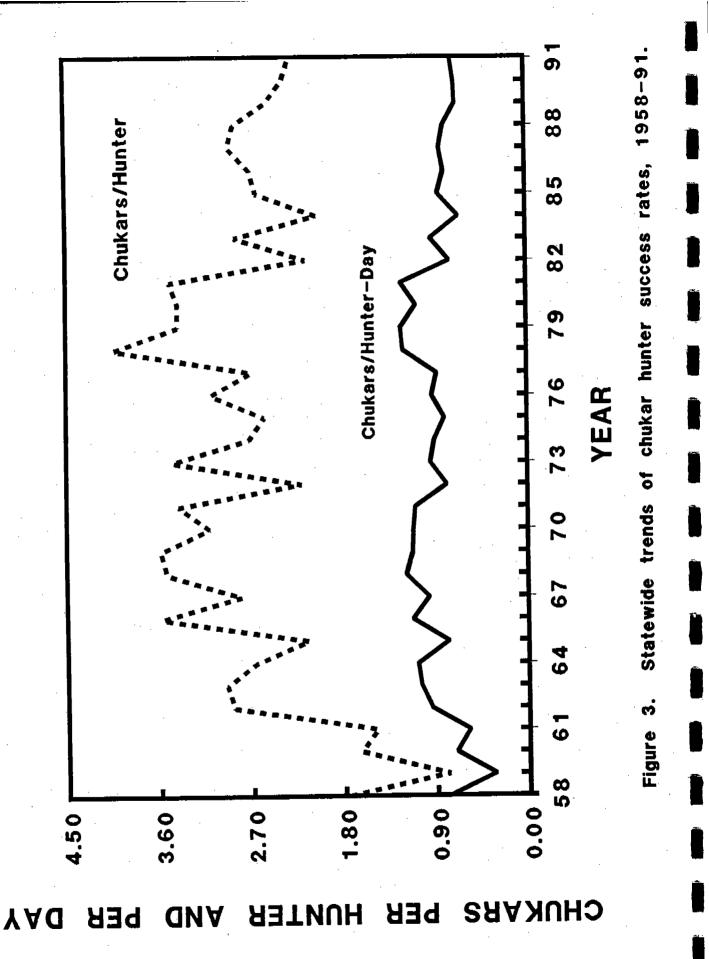
Results of the hunter questionnaire survey for 1991 are shown in Table 5. Long-term trends of chukars bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 6-8 and total statewide harvest statistics in Table 9 and Figures 2 and 3. Following is a comparison of 1991 harvest statistics to 1990 and the previous 33-year

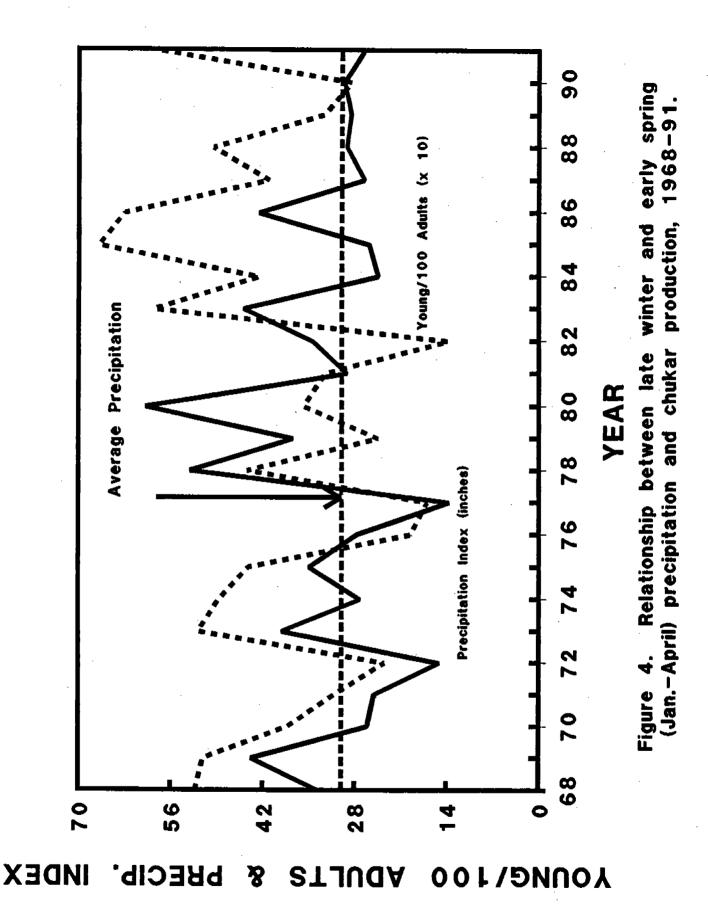
	<u>1991</u>	<u>Percent</u> 1990	<u>change from</u> <u>Average</u>
Chukar hunters	10,577	-6	-25
Chukars harvested	24,355	-8	-39
Hunter-days afield	34,010	-12	-20
Chukars per hunter-day	0.72	+4	-21
Chukars per hunter	2,30	-3	-16

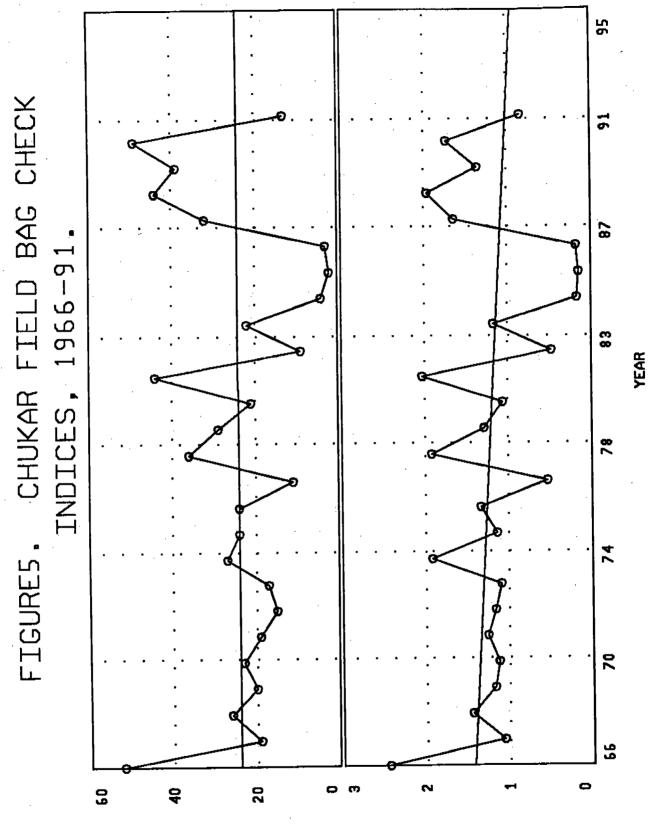




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ЯТИН\UHЭ

Chukar hunters and hunter effort decreased slightly from 1990. Chukars per hunter-day increased slightly from 1990, but remains 21 percent below the statewide average. Total harvest declined 8 percent. The Central Region again had the highest percentage of the harvest (50%) in 1991, and also had the highest percentage of hunter pressure (46%).

Field Bag Checks

A summary of field bag check data for 1991 is shown in Table 10. The hunter success trend determined by field bag checks since 1986 is shown in Table 11 and Figure 5. Data for the 1991 season compared to 1990 and the 10-year (1981-90) average follow:

		Percent	change from
	<u>1991</u>	<u>1990</u>	Average
Total hunters checked	27	-37	-89
Total hours hunted	145	-6	-87
Chukars per hunter (complete hunts)	0.70	-51	-23
Chukars bagged per 100 hours (complete hunts)	13	-73	-49
Average hours per hunter-day			
(complete hunts)	5.37	+85	+26
Hours hunted per chukar bagged (complete hunts)	7.63	+282	-48

Field bag checks indicated hunter success on opening weekend was down from 1990 and was below average (23%). This may be the result of higher vulnerability of birds as they congregated around water sources. However, sample sizes were extremely small.

During and																
		Broods		Mean	& Adults		Adults w/o	Total	Total	Young/.	Vehicle		Hours of Effort	LEffort		Birds/
County	*	Adults	Уонлд	Brood	Adults	Adults Young	Young	Adults	Young	100 Adults	Miles	Vehicle	Horse	Walk	Total	100 IIr
Northern Region							-									
Box Elder	ľ	_ 1	1	:	ł	ł	١	1	ł	1	ł	1	1	1	1	ł
		1	ł	:	ł	;	ļ	1	;	1	I	I	1	ł	1	ł
ache	:	ł	I					:	1	I	۱	ı	1	I	ı	1
Davis	ł	ł	1	ł	1	1	ł						;	ł	1	1
Morgan	1	ł	1	ı	ł	ł	1	1	:	I	1	ł	ł	I		
Rich	1	;	ł	ł	1	1	ł	ł	:	ł	ł	ł	1	1	ł	ł
Summit	1	I	1	1	;	1	:	ł	1	1	ł	ł	1	ł	1	1
					ł	1	;	1	1	ł	ł	1	;	ł	. 1	I
Weber	1	:	'	•										;		1
REGIONAL TOTALS	1	;	:	;	1	:	;	:		1		:	•	•		
Central Region															ı	00.0
- daul	1	ł	1	ł	ę	П	ł	•	Π	367	102	r-	ł	ł	Ŀ	2007
Salt Laka	I	1	1	Í	ł	1	1	1	1	I	I	1	۱	I	;	1
	-	-	10	10.00	1	ł	I	Ţ	10	1,000	24	~1	1	ł	17	713
Surpere	• •		; ;	05 5	"		_	ŀ	31	443	160	٢	ł		×	475
4)	• •	• •	1 :		•		. 1	-	12	1.200	25	1	1	:	-	1,300
Utah	-	-	4	0.44	ŀ		;	. 1	l	<u>,</u> 1	1	1	1	ł	ł	ł
Wasatch	, -	, ,	:				-	5	. 13	113	311	11	1	-	8	434
REGIONAL TOTALS	•	-	4	1.33		107				200						
Southern Region															1	I
Reaver	ł	I	I	1	;	I	1	1	;	I [.]	1	1	1			
Garfield	1	l .'	ł	4.	ł	1	ł	1	:	;	1	I	ł	1	ļ	ł
lron .	1	ł	I	t	I	1	1	ł	1	I	1	Ľ	1	1	1	ļ
Kane	ł	1	1	1	١	I	ł	1	1	1	1	I	ł	ŀ	I,	1
Millard	1	I	1	1	1	1	ı	ł	1	ł	;	1	1	I	1	ł
Piute	ł	ł	1	1	ł	I	ł	1	1	ł	ł	1	ł	l	1	l
Sevier	ł	I	1	1	1	:	I	1	ł	ł	I	I	1	1	I	ł
Washington	1	ł	I	I	ł	1	ŀ	Ì	ł	1	•	:	ł	1	1	ł
Wavne	1	1	1	1	1	1	1	;	1	1	,	1	1	1	:	•
REGIONAL TOTALS	1	1	:	ł	1	1	1	1	:	:	+	t	1		ł	1
Northeastern Region																
Daggett	1	1	ł	Í	I	ł	I	ł	:	1	1	I	1	1	I	1
Duchesne	ł	ł	ł	1	ł	ł		;	1	:	1	L.	1	1	1	1
tintah	ł	ł	ł	1	:	1	:	:	- 1 -	1	1	Ŧ	1	1	1	1
REGIONAL TOTALS	1	:	1	1	1	1	1	1	:	:		1	1	;	-1	1
Southeastern Region														·		
Carhon	I	ł	ł	I	I	I	1	1	ł	:	1		1	;	•	1
Етегу	I	ł	1	I	l	1	I	1	1	1	\$	1	:	1 -	4	;
Grand	I	ł	1	1	ł	ł	1	1 ,	1	:	120	Q	1	• 1	¢	I
San Inan	I	I	1	ł	1	I	1	I	I	1	8	1	1	-	~i	1
REGIONAL, TOTALS	1	1	1	1	1	1	1	ı	1	1	225	10	1	-	Ξ	1
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Dominant and												
	1001	1001	1001	1001	1006	1007	Year	0001	0001	0000		Average
Northern Region	10/1	1204	1703	1 Jut	CUAL	1960	INI	1988	19,89	1996	1661	06-1861
Box Pader	126	120	ł	;	4 200	. 002	102	116				
المرابه			90,	ł	00712	-	010		1	1	I	
Darie	1	: •	1100	1	:	1	(ISN	300	;	848	ł	
SIAPO	50	ŀ	ł	ł	ł	1	24	1	:	400	ı _.	
Мограц	1	1	750	I	;	ł	ł	;	I	ł	;	
Rich	1	:	I	ł	1	1	1		ł	;	ł	
Summit	ł	750	;	1	1	ł	;	:	:	1	I	
Weber	1	:	1	I	1	:	1	1	ł	ł		
REGIONAL TOTALS	101	17	362		1 200	CEN	115	5		107	1	. 002
Central Region	2	5	707	:	11177**	nic	C71		:	6/0	-	1,092
Juab	315	600	:	800	I	710	600 6	462	120	587	167	
Salt Lake	400	5					A 00	4	071	100	100	
Connede		20 99	I	1	I	1	ł	ł	;	1	1	
	1	400	ł	1	1	1	;	J	I	1	1,000	
Tonele	359	585	ł	436	550	566	535	484	263	157	443	
Utah	1	ı	1	ł	300	1	875	ł	472	ł	1,200	
Wasatch	1	ł	800	1	1	ł	1	I	1	1	ุ่า	
REGIONAL TOTALS	348	512	800	481	457	642	591	468	240	266	115	481
Southern Region												
Beaver	ı	ł	1	1	ł	ſ	ı	ı	1	ł	1	
Garfield	ı	122	ł	ł	ł	125	1	1	1	1	1	
Iron	I	ł	ł	I	1	I	1	1	1	;	1	
Kane	I	ı	1	ı	1	I	ł	1	I	ı	1	
Millard	200	:	1	1	ł	1	1	550	927	;	1	
Piute	938	642	ł	ì	1	I	370	;	:	;	I	
Sevier	800	:	I	I	. I	ł	1	:	1	:	;	
Washington	1	ł	ł	1	I	I	1	1	1	:	1	
Wayne	1	600	737	1	ł	ı	I	1	1	1	1	
REGIONAL TOTALS	410	389	737		•	125	370	550	927		1	S01
Northeastern Region												
Daggelt	ł	1	ı	ı	:	r	0	1		:	1	
Duchesne	163	ł	!	1	ł	ł	0	;	ł	:	1	
Uintah	ŀ	t	ł	1	:	1	267	1	i	1	1	
REGIONAL TOTALS	78			1		1	267	1	1	1	:	173
Southeastern Region												
Carbon	:	ł	1	359	I	1,300	1,014	600	1	1	I	
Emery	ł	220	1	ł	;	ł	500		ļ	243	1	
Grand	577	518	617	775	730	730	573	621	64	0	:	
San Juan	533	1	ł	337	ł	I	;	1	200	:	I	
REGIONAL TOTALS	575	426	617	392	408	287	631	620	93	131	1	418
STATE TOTALS	326	138	586	426	670	631	411	496	327	285	533	430

Donion and						Year						
region and County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1981-90
County 												
Northern Kegion		5	10.00		0.00	;	8.50	7.50	1	۱	I,	
Box Elder	1	5.5	01.21	1				6 00	1	13.50	I	
Cache	1	1	6.00	;	ł	I	1	00.0	00.11	00 61		
Davis	1	1	١	ł	1	ł	1	í	14.00	14.41	ł	
Morean	:	1	7.50	1	ł	1		1	00.7	I	1	
		1	١	1	ł	ł	1	ł	1	١	ł	
Kich	:						1	I	ì	ł	I	
Summit	ł	7.50	1	;	۰ ۱	ł	l			ł	1	
Weber	ł	1	1	;	;	:	1			44.44		010
RECIONAL TOTALS	8.33	3.00	7.00	;	9.00	;	8.50	7.00	10.50	13.00	•	67-0
Control Region												
	2 45	6.00	1	8.00	ł	7.45	8.00	6.75	5.50	4.30	ł	
Juab	6					ł	ł	۱	1	ł	ł	
Salt Lake	4.00	ł	1	I	ł					1	10.00	
Sannete	1	1	ł	ł	I	1	I	:	ı [‡]			
	8.92	10.60		6.00	8.43	7,86	8.00	7.43	6.40	5.40	00.0	
		1	۱	;	10.00	ł	10.50	1	3.00	I	12.00	
				1	ł	1	ļ	1	I	1	1	
Wasatch	1			00 \	67.0	7 60	8.71	7 07	5.00	3.60	7.33	7.14
REGIONAL TOTALS	7.13	10.14	1	0.00	60.0	Care I	2400					
Southern Region									ł	ł	1	
ßeaver	ł	1	1	1	ł	١	1	1	1	1		
Garfield	1	ł	ł		1	2.00	;	1	1	;	I	
lean	;	ł	ı	1	:	1	1	I	1	I	ł	
	:	1	1	1	ł	ł	1	ł	I	1	ł	
		1	;	:	1	I	1	7.75	7.50	ł	ł	
Millard		00 0			ł	ł	5.00	ł	ł	I	;	
Piute .	05.01	00.0	1	l				1	I	1	1	
Sevier	8.00	:	I	ł	:	ł	l			I	1	
Washington	I	ł	I	1	I	ł	1	Ι.	I		. 1	
Wavne	ł	9.00	ł	,	1	;	;	1				7 20
REGIONAL TOTALS	9.67	7.00	1	1	:	1	5.00	7.75	7.50	:	1	00.1
Northeastern Region												
Daggett	00.6	1	1	ł	ł	1	;	:	1	I	1	
	1	;	ł	:	I	ł	ł	1	ł	t	1	
	1	1	10.00	ł	1	1	10.00	;	;	;	1	
	000	'	10.00	1	1	1	10.00	1	1	,	:	6.33
KERTUNAL TUTALO												
Southeastern Kegunt			ł	5.50	1	12.50	9.67	6.00	ł	ł	1	5
Carbon	I .				5.00	1	5.00	. 1	ł	8.50	1	
Emery		:	16.0		00 8	ł	8 57	9.11	1.00	I	:	
Grand	ł	06.11	C7.8	C1-1	A.V	ł	2		4 00	I	;	
San Juan	1	5.33	•		:	1	1 0	200	02 6	0 50		8.09
REGIONAL TOTALS	1	11.30	8.25	1.00	7.67	10.40	C7.8	6.9	0.0.7		202	1 53
CONTROL OF CONTROL	0 13	04.0	8 00	6.01	8 46	8.13	7.93	×.00	5.05	00.0		(C) 1

Table 4. Trend of chukars observed per 100 hours, 1981-91

												AVELAN
County	1981	1982	1983	1984	1985	1986	1987	1988	1000	1900	1001	1001
Northern Region								1700	1202	1770	1661	06-1961
Box Elder	645	8	ł	;	239	168	40	326	1			
Cache	;	ł	700	;	1	1	2	2	I	101	1	
Davis	810	1,127	100	1	:	22	313	3 99	150	., 	:	
Могдан	;	. :	850		1		2 · · ·		002		:	
Rich	1					ł	1	1	M	1	I	
Summit	1	I	ł	1	I	1	I	I	t	t	ł	
	ł	ł	1	:	1	ł	1	:	ł	;	1	
Weber	;	'	1	;	1	ł	1	1	I	1	1	
REGIONAL TOTALS	502	479	227	1	155	102	91	Ξ	135	295	'	122
Central Region												
Juab	692	363	:	200	1	2.611	850	913	500	220	000	
Salt Lake	500	(1	1	I	1	1	(Ì		
Sanpete	1	R S7	ł	:	I	;	l	}	ł	1	1	
Tonete	985	1,013	:	441	197	1 046	1 133	: 5		1	8	
Utah	' 1	8	;		570		1 050	(CC)	2 100	202	C/ F	
Wasatch		2		ļ	010	1	UCKI	;	2,100	1	1,300	
DECTONAL TOTAL		:	ı	φ.	;	;	;	1	:	:	1	
Southern Region	771	eic	104	167	542	1,424	844	822	623	281	434	629
Beaver	1	ı	ł	ł	;	1	1					
Garfield	I	S00	1	ł	1	;		I		ł	I	
lron	ł	;	:	;	:	ł		 	I	ł	I	
Kane	I	ł	;	:	:	1		.	I	1	1	
Millard	1,467	1	1	1	1	1		1 496	1 506	Ļ	I	
Piute	1,660	433	1	I	1	1	1 567	1		I	I	,
Sevier	906	17	:	:	ł				1	:	ł	
Washington	.1	1	I	ł			I	ł	ł	I	1	
Wayne	1	700	3.350	I	I		I	I	;	1	i	
REGIONAL TOTALS	1.436	266	3.350				1 567	1 405		•	1	
Northeastern Region							Threat	1440	14220	,	•	110.1
Daggett	;	1	I	I	ł	;						
Duchesne	300	790	1	· 1		1	ł	I	1	:	1	
Uintah	614	454	3 8	1			0ek	ł	:	1	1	
REGIONAL TOTALS	533	348	17				141	•	:	•	1	949
Southeastern Region							147	:	:	•	1	730
Carbon	ł	1	1	420	ł	I	7,800	350	1	ı	ł	
Emery	ł	;	ł	ı	833	ł	171	1	ł	480	;	
Grand	2,891	1,167	2,871	291	424	2,075	1,167	3,983	240	67	1	
San Juan	1,120	;	1	1,750	;	ł	, I	1	225	1	;	
REGIONAL TOTALS	2,338	1,578	2,871	858	530	2.075	1,335	3.293	225	150		1 636
											1	

EGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	* OF PRESSURE	<pre>% OF HARVEST</pre>
ORTHERN REGION		,			01 50	23.43
BOX ELDER	139	7,323	5,706	0.78	21.53	1.93
CACHE	32	1,269	469	0.37	3.73	
DAVIS	14	504	382	0.76	1.48	1.57
MORGAN	16	608	330	0.54	1.79	1.36
RICH	9	487	156	0.32	1.43	0.64
SUMMIT	4	243	34	0.14	0.72	0.14
WEBER	13	556	469	0.84	1.64	1.93
REGIONAL TOTALS	227	10,994	7,550	0.69	32.33	31.00
ENTRAL REGION						
	44	2,400	2,087	0.87	7.06	8.57
JUAB	12	434	730	1.68	1.28	3.00
SALT LAKE	33	1,791	1,478	0.83	5.27	6.07
SANPETE		5,340	3,722	0.70	15.70	15.29
TOOELE	. 106		4,105	0.79	15,24	16.86
UTAH	102	5,184 452	226	0.50	1.33	0.93
WASATCH	6	494 				
REGIONAL TOTALS	303	15,604	12,351	0.79	45.88	50.71
SOUTHERN REGION				0.67	3.22	3.00
BEAVER	11	1,095	730	0.67	0.10	0.36
GARFIELD	2	34	86	2.50		0.14
IRON	2	191	34	0.18	0.56	
KANE	l	34	52	1.50	0.10	0.21
MILLARD	35	1,426	782	0.55	4.19	3.21
PIUTE	8	243	243	1.00	0.72	1.00
SEVIER	42	1,948	1,409	0.72	5.73	5.79
WASHINGTON	1	69	· 0	0.00	0.20	0.00
WAYNE	2	86	156	1.80	0.26	0.64
	104	5,131	3,496	0.68	15.09	14.36
REGIONAL TOTALS						
NORTHEASTERN REG		0	O	0.00	0.00	0.00
DAGGETT	· 0	539	104	0.19	1.59	0.43
DUCHESNE	9 7	243	191	0.79	0.72	0.79
UINTAH						
REGIONAL TOTALS	16	· 782	295 	0.38	2.30	1.21
SOUTHEASTERN RE			200	0.46	1.33	0.86
CARBON	10	452	208	0.46	1.89	1.14
EMERY	14	643	278	0.43	0.66	0.36
GRAND	6		86			
SAN JUAN	1	173	86	0.50	0.51	0.36
REGIONAL TOTALS	31	1,496	661	0.44	4.40	2.71
UNKNOWN	0	0	0		0.00	0.00
STATE TOTALS	- 	34,010	24,355	0.72	100.00	100.00

Table 5. Summary of chukar hunter success and distribution of harvest and hunting pressure by region and county, 1991.

*Total hunter trips from questionnaire returns.

Table 6. Su 19	mmary of 84-91.	chukars	bagged	per	hunter-day	by	region	and	county,	
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Region and	<u></u>				Year	· · · · · · · · · · · · · · · · · · ·		
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region		<u> </u>			<u> </u>	1909		1291
Box Elder	0.30	0.55	0.49	0.62	0.63	0.54	0.89	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
Cache	0.43	0.13	0.14	0.85	0.58	0.73	0.89	0.78
Davis	0.53	0.43	0.50	0.20	1.65	0.42		0.37
Morgan	0.10	0.30	0.00	1.33			0.79	0.76
Rich	0.80	0.00	0.00	1.00	1.08	0.56	0.71	0.54
Summit	0.67	0.00	0.00	1.25	1.43	0.70	1.67	0.32
Weber	2,46	0.18	0.00		0.68	0.20	2.14	0.14
REGIONAL TOTALS	0.41	0.46		0.44	0.45	1.07	0.73	0.84
<u>Central Region</u>	<u> </u>	0.40	0.39	0.64	0.69	0.58	0.82	0.69
Juab	0.92	1 6 7	0 07					
Salt Lake		1.63	0.87	1.10	0.90	0.66	0.73	0.87
	1.59	0.96	1.08	1.16	0.69	1.05	1.16	1.68
Sanpete	1.14	1.28	0.88	0.58	1.26	1.06	1.35	0.83
Tooele	0.95	1.12	0.90	0.84	0.82	0.69	0.77	0.70
Utah	0.62	0.71	0.65	0.71	0.64	0.78	0.67	0.79
Wasatch	0.07	0.07	0.00	0.83	1.00	0.60	0.67	0.50
REGIONAL TOTALS	0.88	1.06	0.84	0.86	0.83	0.78	0.81	0.79
Southern Region								
Beaver	1.60	0.00	0.13	0.63	0.35	0.50	0.42	0.67
Garfield	1.83	0.00	0.33	0.40	1.13	0.63	0.00	2.50
Iron	2.00	0.00	0.00	0.00	0.00	0.00	0.25	0.18
Kane	0.67	0.00	0.00	0.00	0.00	0.00	0.00	1.50
Millard	0.80	1.55	1.88	1.09	0.95	0.57	0.62	0.55
Piute	0.50	0.71	0.13	0.81	0.30	0.54	0.29	1.00
Sevier	0.37	0.21	0.48	0.57	0.67	0.47	0.51	0.72
Washington	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wayne	0	1.00	0.00	2.00	1.83	0.27		
REGIONAL TOTALS	0.63	0.72	0.92	0.82	0.72		0.00	1.80
Northeastern Region				0.02	0.72	0.50	0.45	0,68
Daggett		0.00	0.00	3.00	0 00	0 00	<u> </u>	
Duchesne	0.22	2.00	0.00	0.20	0.00	0.00	0.00	0.00
Uintah	1.45	1.00			2.12	0.73 .	0.27	0.19
REGIONAL TOTALS	0.90		<u>0.00</u>	1.68	0.69	2.14	0.09	0.79
Southeastern Region	0.90	1.09	0.00	1.44	1.42	1.81	0.17	0.38
Carbon	0 40	~						
Emery	0.42	0.42	0.89	0.87	1.29	0.42	0.16	0.46
	0.44	0.62	0.74	0.90	0.95	0.29	0.50	0.43
Grand	0.37	1.31	1.57	1.19	1.26	0.92	0.56	0.38
San Juan	0.25	0.00	0.86	1.67	0.50	0.00	0.00	0.50
REGIONAL TOTALS	0.40	0.65	1.05	1.07	1.03	0.50	0.39	0.44
Unknown Counties	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
STATE TOTALS	0.66	0.86	0.80	0.84	0.80	0.68	0.69	0.72

Table 7.	Percentage	distribution	of	chukar	harvest	рλ	region	and	county,
	1984-91.								

Region and					Year			1001
County	1984	1985	1986	1987	<u>1988</u>	1989	1990	1991
Northern Region								
Box Elder	6.64	8.39	7.64	10.59	10.15	13.21	18.42	23.43
Cache	1,81	0.20	0.24	1.64	2.29	4.05	4.43	1.93
Davis	1.61	0.61	0.16	0.07	1.71	0.83	0.85	1.57
Morgan	0.30	0.31	0.00	0.29	0.67	1.43	0.93	1.36
Rich	0.41	0.00	0.00	0.07	0.52	0.53	1.17	0.64
Summit	0.20	0.00	0.00	0.37	0.88	0.08	1.17	0.14
Weber	3.22	0.41	0.00	0.59	0.26	<u>1.13</u>	1.48	1.93
REGIONAL TOTALS	14.18	9.92	8.04	13.65	16.51	21.25	28.44	31.00
Central Region								
Juab	7.24	11.67	7.89	12.68	7.18	5.33	5.13	8.57
Salt Lake	7.04	5.12	3.33	4.32	1.87	3.15	2.87	3.00
Sanpete	2.51	8.90	4.72	2.83	7.96	9.83	8.08	6.07
Tooele	26.66	32.85	27.07	20.44	24.63	19.67	28.21	15.29
Utah	11.97	10.75	9.02	9.77	9.06	15.09	10.26	16.86
Wasatch	0.10	0.10	0.00	0.37	0.20	0.23	0.16	0.93
REGIONAL TOTALS	55.53	69.40	52.03	50.44	50.93	53.30	54.70	50.71
Southern Region							_	
Beaver	0.80	0.00	0.16	1.41	1.09	1.05	2.18	3.00
Garfield	1.11	0.00	0.24		0.46	0.75	0.00	0.36
Iron	0.20	0.00	0.00	0.00	0.00	0.00	0.31	0.14
Kane	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Millard	10.96	10.64	18.78	13.13	8.22	4.65	3.11	3.21
Piute	3.22	1.53	0.40	1.26	0.52	1.13	0.85	1.00
Sevier	3.72	0.72	5.93	5.67	8.80	5.26	4.74	5.79
Washington	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wayne	0,00	0.31	0.00	0.14	0.57	0.30	0.00	0.64
REGIONAL TOTALS	20.32	13.20	25.53	21.79	19.68	13.14	11.19	<u>14.36</u>
Northeastern Region								
Daggett	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00
Duchesne	0.20	0.20	0.00	0.07	1.87	0.60	0.78	0.43
Uintah	1.61	1.02	0.00	2.38	0.57	5.78	0.16	0.79
REGIONAL TOTALS	1.81	1.23	0.00	2.68	2.44	6.38	0.93	1.2
Southeastern Region								
Carbon	2.51	1.33	2,60	0.97	0.93	1.13	0.62	0.86
Emery	2.72	3.17	4.15	3.20	7.18	1.35	3.73	1.14
Grand	2.81	1.74	7.15	6.86	2.23	2.70	0.39	0.36
San Juan	0.10	0.00	0.49	0.37	0.05	0.00	0.00	0.36
REGIONAL TOTALS	8.15	6.24	14.39	11.41	10.41	5.18	4.74	2.7
KEGIONAL IOTAPS	<u> </u>	0.24						
Unknown Counties	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Region and					Year			
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region			· · · · ·					
Box Elder	14.54	13.02	12.36	14.35	12.95	16.59	14.18	21.53
Cache	2.77	1.04	1.43		3.16	3.80	5.94	3.73
Davis	1.98	1.23	0.26	0.31	0.83	1.34	0.75	1.48
Morgan	1.98	0.88	0.91	0.18	0.49	1.75	0.91	1.79
Rich	0.33	0.09	0.07	0.06	0.29	0.51	0.48	1.43
Summit	0.20	0.09	0.07	0.25	1.04	0.26	0.37	0.72
Weber	0.86	1.93	1.50	1.12	0.45	0.72	1.39	1.64
REGIONAL TOTALS	22.67	18.66	16.59	17.93	19.24	24.96	24.02	32.33
Central Region								
Juab	5.15	6.16	7.22	9.65	6.41	5.55	4.87	7.06
Salt Lake	2.91	4.58	2.47	3.13	2.16	2.05	1.71	1.28
Sanpete	1.45	5.98	4.29	4.13	5.03	6.37	4.12	5.27
Tooele	18.44	25.26	24.14	20.50	24.07	19.62	25.25	15.70
Utah	12.62	13.02	11.13	11.53	11.32	13.20	10.59	15.24
Wasatch	0.99	1.32	0.20	0.37	0.16	0.26	0.16	1.33
REGIONAL TOTALS	41.57	56.34	49.45	49.34	49.18	47.05	46.71	45.88
<u>Southern Region</u>								
Beaver	0.33	1.85	0.98	1.88	2.49	1.44	3.53	3.22
Garfield	0.39	0.97	0.59	0.31	0.33	0.82	0.59	0.10
Iron	0.07	0.00	0.00	0.00	0.00	0.36	0.86	0.56
Kane	0.20	0.89	0.26	0.06	0.00	0.00	0.05	0.10
Millard	8.99	5.89	8.00	10.09	6.95	5.60	3.48	4.19
Piute	4.23	1.85	2.47	1.31	1.37	1.44	2.03	0.72
Sevier	6.61	2.99	9.95	8.33	10.53	7.60	6.37	5.73
Washington	0.13	1.06	0.00	0.12	0.00	0.00	0.27	0.20
Wayne	0.20	0.26	0.00	0.06	0.24	0.77	0.05	0.26
REGIONAL TOTALS	21.14	15.76	22.25	22.19	21.94	18.03	17.23	15.09
Northeastern Region		~ ~~						
Daggett	0.00	0.00	0.00	0.06	0.00	0.00	0.59	0.00
Duchesne	0.59	0.09	0.00	0.31	0.70	0.56	1.98	1.59
Uintah	0.73	0.88	0.78	1.19	0.66	1,85	1.18	0.72
REGIONAL TOTALS Southeastern Region	1.32	0.97	0.78	1.56	1.37	2.41	3.75	2.30
Carbon		0 7 7	• • • •	0.04	0 50		a	
Emery	3.90 4.10	2.73 4.40	2.34	0.94	0.58	1.85	2.68	1.33
Grand	4.10		4.49 3.64	3.00	6.03	3.18	5.14	1.89
San Juan	0.26	1.14 <u>0.</u> 00		4.82	1.41	2.00	0.48	0.66
REGIONAL TOTALS	13.28		0.46	0.18	0.08	0.00	0.00	0.51
MEGIONAL IOTALS	13.20	8,27	10.93	8.96	8.11	7.04	8.29	4.40
Unknown Counties	0.00	0.00	0.00	0.00	0.12	0.51	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 8. Percentage distribution of chukar hunting pressure by region and county, 1984-91.

	Total	Total	Hunter-Days	Chukars Per	Chukars Per
Year	Hunters	Harvest	Afield	Hunter-Day	Hunter
.958	11,124	19,578	25,100	0.78	1.76
1959	11,154	8,700	26,364	0.33	0.78
1960	13,252	21,733	30,610	0.71	1.64
1961	14,046	20,821	35,675	0.58	1.48
1962	11,638	33,500	35,010	0.95	2.88
1963	14,532	42,806	40,824	1.05	2.95
1964	16,090	42,974	39,971	1.08	2.67
1965	16,431	35,335	45,067	0.78	2.15
1966	17,133	61,370	54,448	1.13	3.58
1967	17,485	48,906	50,671	0.97	2.80
1968	20,744	73,218	61,402	1.19	3.53
1969	22,529	80,917	71,674	1.13	3.59
1970	18,013	56,053	49,911	1,12	3.11
1971	17,917	61,151	55,378	1.10	3.41
1972	16,685	36,925	46,502	0.79	2.21
1973	13,888	48,135	50,677	0.95	3.47
1974	16,412	44,658	48,856	0.91	2,72
1975	16,156	41,151	51,083	0.81	2.57
1976	14,171	43,726	47,143	0.93	3.09
1977	12,691	34,155	38,873	0.88	2.69
1978	16,291	65,747	54,239	1.21	4.04
1979	15,210	51,918	42,254	1.23	3.41
1980	15,100	51,511	47,778	1.08	3.41
1981	12,907	44,983	36,662	1.23	3.49
1982	11,326	24,460	32,691	0.75	2.16
1983	10,418	29,649	31,904	0.93	2.85
1984	9,846	20,179	30,715	0.66	2.05
1985	7,930	20,938	24,346	0.86	2.64
1986	9,397	25,346	31,672	0.80	2.70
1987	11,276	32,848	39,099	0.84	2.91
1988	11,237	32,057	40,088	0.80	2.85
1989	10,910	27,628	40,384	0.68	2.53
1990	11,195	26,486	38,463	0.69	2.37
1991	10,577	24,355	34,010	0.72	2.30
Totals		_			•
(1958-91)	475,711	1,333,917	1,429,544		
Averages				0.91	2.74

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		All Ha	nts	•				Complete	Unnfe		
Region and	Total	Total	Total	Total	Rirds/	Complete	Total	Tatal	Totol	0:	
County	Parties	Hunters	liours	Rirds	100 Mr	limts	Hunters	liours	1 OGU Rirde	100 Hr	liturior.
Northern Region											
Box Elder	7	ED	ý	н	17	ı	ł	;	1	:	
Cache	ł	1	1	1	1	ł	ł	;	. 1		t I
Davis	ł	1	ł	1	;	1	•	;	ł	l	I
Morgan	;	1	1	ł	;			ł	ł	1	1
Rich	ł					ł	ł	1	ł	1	1
Summit	I	:	1	ł	ł	1	:	1	;	;	I
	1	;	I	1	ł	I	ł	ł	ł	;	I
Weber	1	;	1	1	1	1	1	1	1	1	I
REGIONAL TOTALS	2	••	9	1	17	:		1		1	1
Central Region											
Juah ·	ŝ	14	28	0	0	T	7	y.	4	67	2.00
Salt Lake	1	;	;	1	I	1	1	, ,	• •	5	
Sanpete	9	14	11	13	48		œ	01	10	5	
Tooele	17	37	209	1		a ve	; <u>r</u>	114	2 -	3 -	57.1
Utah	1	1		1	•	-	3 6			- 5	10.0
Wasatch	I	ì	۱.	ł	ł	• •	• 1	-	•	5	10.7
REGIONAL TOTALS	28	8	264	26	9	=	11	145	2	1	0.0
Southern Region											
Beaver	ł	ł	1	ł	:	1	:	;	1	ł	1
Garfield	:	1	1	ł	:	ł	I	:	ł	1	1
Iron	1	1	ł	ı	;	:	ł	ł	;	ł	ł
Kane	1	ł	I	Ŧ	;	I	;	I	1	ı	1
Millard	ı	ł	ł	I	:	ł	ł	I	ł	I	I
Piute	1	ł	1	ł	:	;	;	1	I	I	I
Sevier	t	1	I	1	;	I	I	1	I	1	1
Washington	ı	:	1	1	:	I	1	;	. I	I	1
Wayne	1	1	1	;	ł	ł	ł	I	I	₽	I
REGIONAL TOTALS	1	1	1	1	:	ł	;	:	.	1	•
Northeastern Region											
Daggett	:	1	ı	1	:	ł	1	ļ	:	ł	I
Duchesne	ł	1	;	ł	1	ł	1	;	ł	1	I
Uintah	:	1	1	;	ł	1	ť	1	1	1	ł
REGIONAL TOTALS	ı	1	1	1	1	:	:	+	1		;
Southeastern Region											
Carbon	:	1	ı	I	i	1	Ļ	1	;	1	1
Ешету	ł	:	1	1	ł	i	ł	:	ł	ł	I
Grand	ł	:	ı	1	I [*]	ı	1	1	ł	;	, ! .
San Juan	1	1	1		1	ł	;	:	;	:	1
REGIONAL TOTALS	ł	:	:	1	:	1		:	:	;	:
										;	

1 486 1 987	1986		1987		1 y X X		1989		19961		1661	
-		Derdol	Divilef	Binde/		Birde/	Rinde/	Birdel	Rirde/	Rirde/	Rinde/	Rirds/
Kegnon and County	100 JIr	Bunter Hunter	100 Hr	Hunter	100 JIr	flunter	100 Hr	Hunter	100 Br	llunter	100 Hr	Hunter
Northern Region												
Box Filder	•	0.27	31	1.41	EI	0.43	20	2.50	133	4.00	ł	1
Carla	. 1		38	1.37	12	2.00	1	1	;	:	ł	1
Darie	1	;	25	1.00	:	1	I	;	1	ł	1	
	I	}	2							1		1
Morgan	:	I	ł	1	ł	ł	ł	!	1	ł	ł	3
Rich	1	ł	ł	1	ł	:	1	1	;	¦ ,	;	l
Summit	!	:	ł	· ,	1	:	;	ł	۱	ł	ı	1
Weber	I	1	I	ł	1	.1	1	1	1	1	1	1
REGIONAL TOTALS	F	0.27	33	1.39	23	0.82	2 0	2.50	133	4.00	1	:
Central Region												
	I	1	ł	1	75	2.57	<u> 3</u> 2	1.90	116	7.00	67	2.00
			1	;	· •	1		1	1	!	ĺ	I
	I .	l					;	ł	;	1	ĩ	1.25
Sarpete	l	ł	: ;	: .	1 5	; ;	•	1 00 0	I	ł	3 -	0.07
Tooele	1	1	77	00.2	10	1.11	4 i	40°.	1		- 5	10.0
Utah	1	ł	1	1	ł	ł	20	1.00	9	Z.00	67	MI'Z
Wasatch	1	1	1	1	;	1	I.	1	;	1	t	1
REGIONAL TOTALS	ſ	1	22	2.00	73	2.29	31	1.00	8	1.36	13	0.70
Southern Region												
Веачет	I	;	1	1	ı	ł	ł	1		ł	t	I
Garfield	ı	:	ł	I .	ł	1	ł	1	1	Ì	1	I
Iron	1	ł	;	;	ł	:	ł	ł	;	I	I	I
Kane	ł	I	1	ł	ł	ł	1	ł	1	I	I	1
Millard	I	ł	1	ł	1	1	1	:	1	I	ł	1.
Piute	ł	ł	ł	:	ł	ł	1	1	1	;	1	I
Sevier	1	;	.	:	1	ł	ł	ł	ł	1	ł	I
Washington	1	I	. 1	1	1	ł	ł	ł	:	;	I	I
Wayne	I	I	1	1	1	:	ł	1		'	1	1
REGIONAL TOTALS	ľ	;	1	1	1	1	1	;	;	ł	3	1
Northeastern Region												
Daggett	I	:	ł	I	1	1	I	1	1	1	1	ł
Duchesne	i	1	I	I	1	1	1	ł	38	1.50	1	ł
Lintah	ł	1	1	1	87	3.71	1	I	ł	I	1	I
REGIONAL TOTALS		1	1	1	87	3.71	1	1	38	1.50	1	1
Southeastern Region												
Carbon	ł	ł	ł	:	:	ł	ł	I	ł	ł	ł	ł
Emery	100	3.00	ł	1	ł	1	133	4.00	33	1.00	1	ł
Grand	4 5	1.52	17	0.67	49	2.54	75	1.50	1	ł	ł	1
San Juan	ı	I	:	:	1	ł	ı	1	1	1	1	;
REGIONAL TOTALS	51	1.69	11	0.67	49	2.54	100	2.30	33	1.00	ì	1
									4		÷	0.00

SUMMARY

SAGE GROUS

Harvest data for 1990 indicated above average breeding populations of sage grouse for 1991. Strutting ground surveys indicated a decrease in the average male grouse attendance from 1990. ほうがたい

GROLORE

Brood surveys showed decreased production throughout the state. Birds observed per 100 hours remained about the same as in 1990, and was 14 percent below average. The ratio of young to adults decreased 33 percent compared to 1990 and was 21 percent below average.

The decrease in production, as indicated from brood counts, in 1991, was apparent in harvest statistics collected from questionnaires and from field bag checks. Hunter success rates decreased. Harvest was above the 37-year average. Age ratios derived from wings indicated a 40 percent decrease in young per 100 adults and was 45 percent below average.

Strutting Ground Counts

The status of the sage grouse breeding population for 1991, as indicated by strutting ground counts, is shown in Table 1 and Figure 1 of this section. Results of this survey for 1991 compared to 1990 and the 1967-90 average follow:

		Percent	<u>change from</u>
	<u>1991</u>	1990	<u>Average</u>
Number of grounds counted	71	-45	-35
Total male grouse counted	574	-78	-72
Average male grouse per ground Percent change from previous year	8	~ 60	-58
(comparable grounds)	-11		

Access for spring 1991 strutting ground counts was generally good in most regions of the state. The numbers of male grouse observed decreased statewide. Harvest data for 1990 indicated average populations going into the winter of 1990-91, but the numbers of juvenile birds observed during the summer indicated decreased production compared to 1990. Loss of habitat continues to be the trend in many areas of the state.

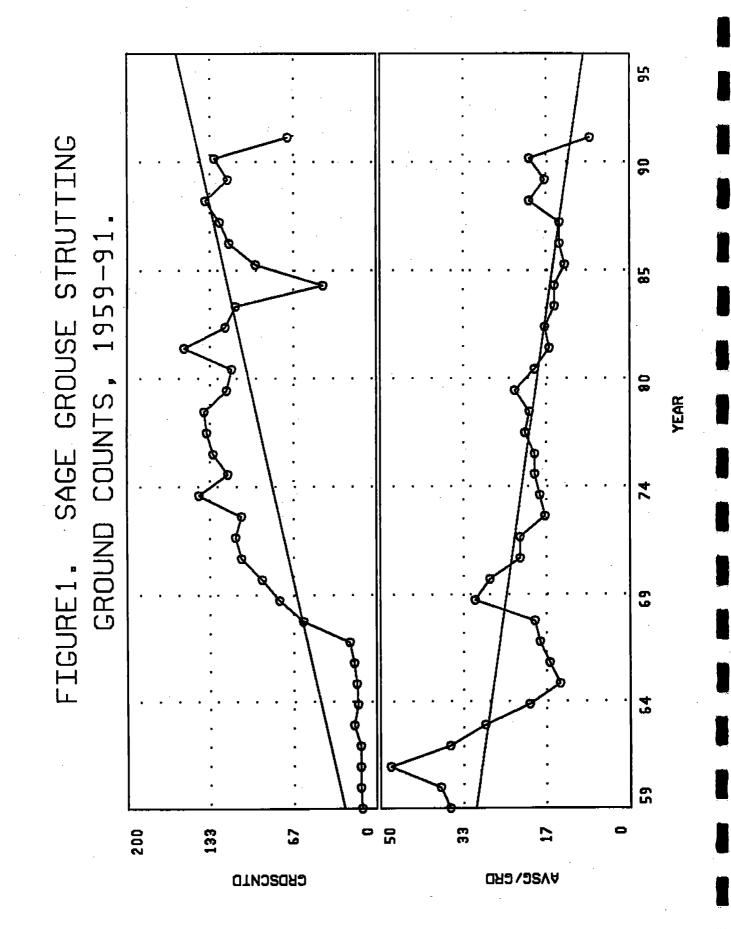
Brood Counts

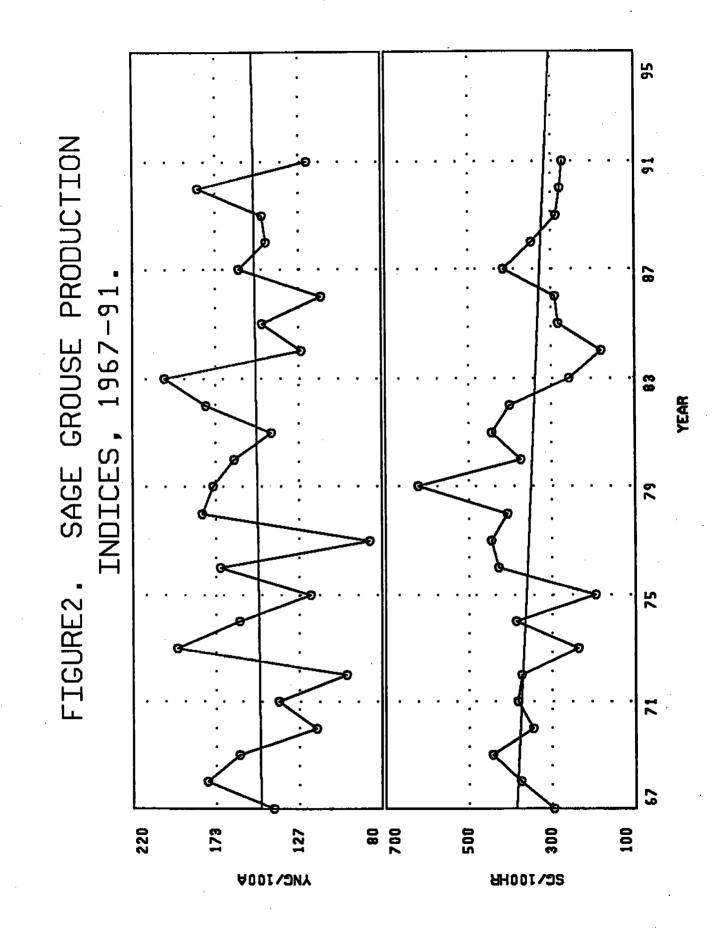
Results of the summer inventory survey for 1991 are found in Table 2. Long-term trends of young per adult ratios, mean brood size and sage grouse observed per 100 hours are shown in Tables 3-5 and Figure 2. Indices for 1991 are compared to 1990 and the previous 10-year (1981-90) average as follows:

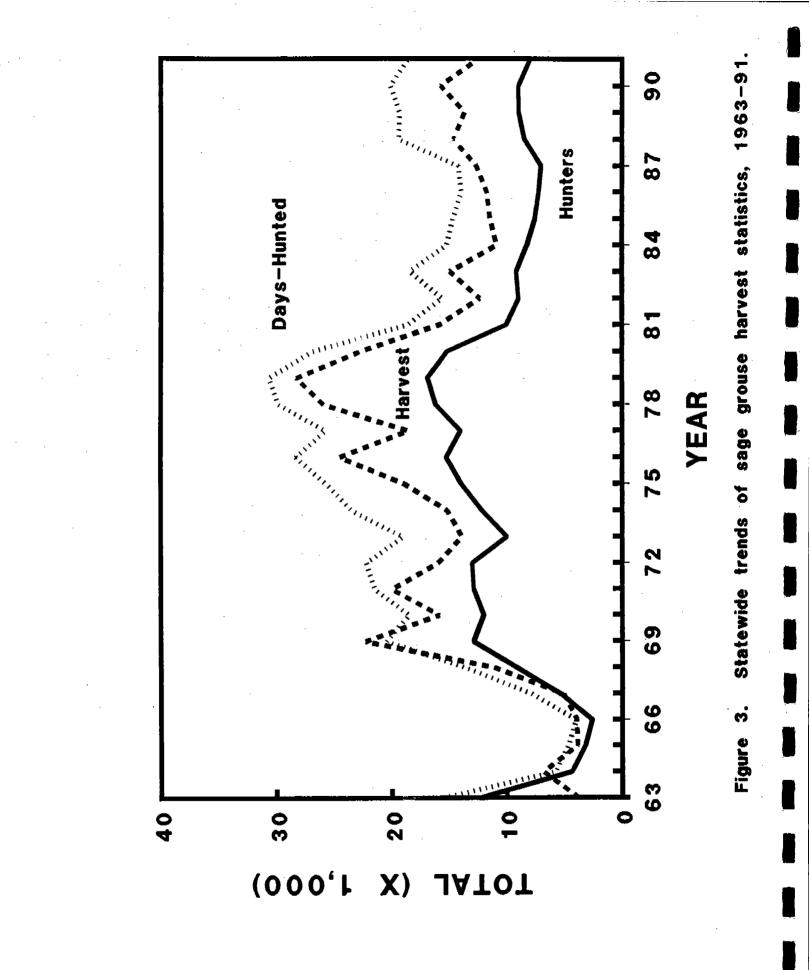
	1991	<u>Percent</u> 1990	<u>change from</u> <u>Average</u>
·			
Total sage grouse counted	547	-28	-60
Young per 100 adults	122	-33	-21
Mean brood size	3.70	-21	-17
Sage grouse observed per 100 hours	273	-2	-14
Total hours effort	201	-17	-52

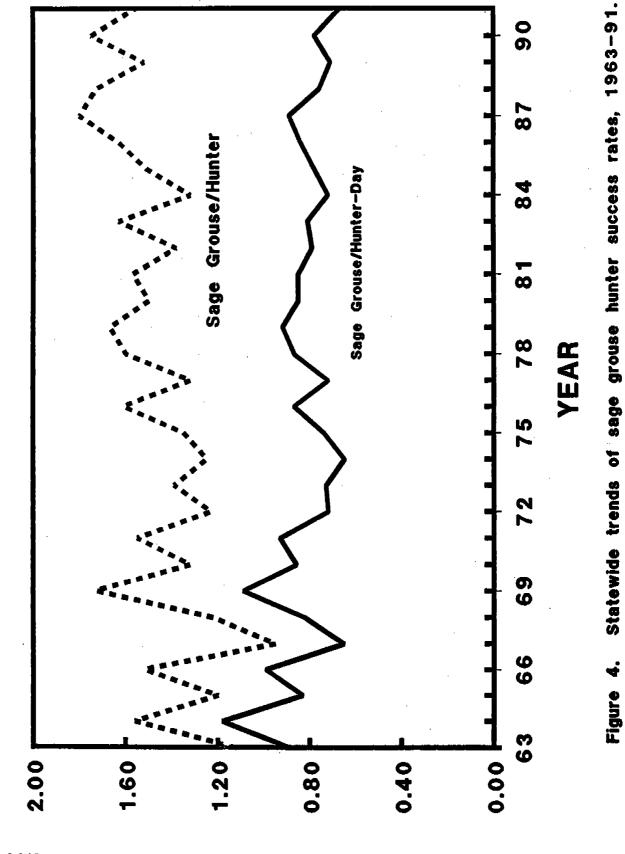
The effort devoted to sage grouse brood counts was 52 percent below average, and the total number of grouse counted was 60 percent below average.

Sage grouse density remained about the same as in 1990, production of young per 100 adults decreased 33 percent. The average brood size was 17 percent below the 10-year average. Continued drought conditions may have negatively influenced brood survival or caused an earlier dispersal of broods.

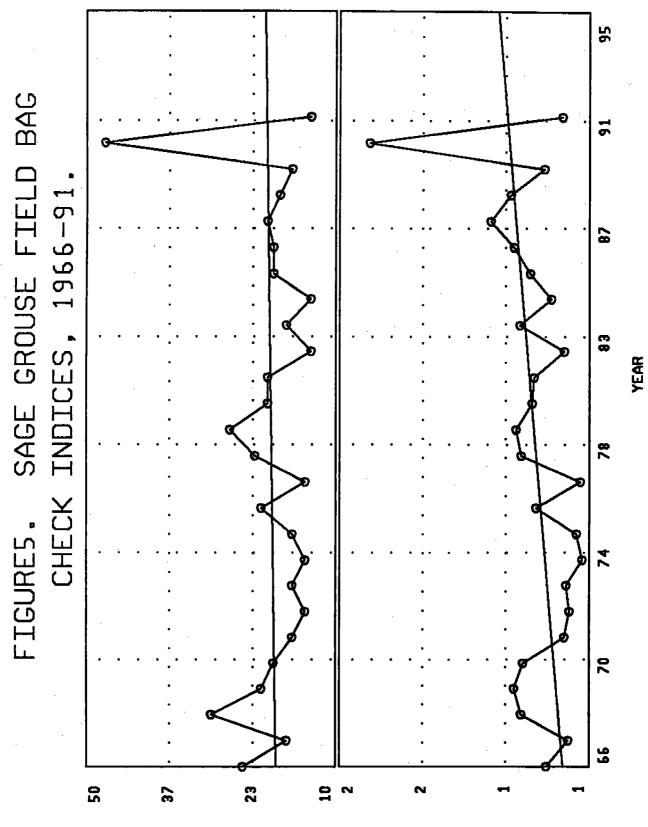








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Harvest

Hunter Questionnaire

Results of the 1991 hunter questionnaire are shown in Table 6. Long-term trends of sage grouse bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 7-9 and total statewide harvest statistics in Table 10. The results of the 1991 hunting season compared to 1990 and the previous 28-year average follow:

		<u>Percent_</u>	change from
	<u>1991</u>	1990	Average
Sage grouse hunters	8,018	-11	+8
Sage grouse harvested	12,542	-21	+14
Hunter-days afield	18,596	-8	+4
Sage grouse per hunter-day	0.67	-14	-20
Sage grouse per hunter	1.56	-11	-16

Sage grouse per hunter-day success rate decreased 14 percent in 1991. Total statewide harvest decreased 21 percent, and there was a slight decrease in total sage grouse hunters. Forty-seven percent of the harvest and 48 percent of the hunting pressure still occurred in the Northern region.

Long-term sage grouse harvest trends are shown in Figures 3 and 4.

Field Bag Checks

A summary of field bag check data for 1991 is shown in Table 11. Hunter success trends determined via this method are shown in Table 12 and Figure 5. Results of the 1991 survey compared to 1990 and the 10-year (1981-90) average follow:

		Percent	<u>change from</u>
	<u>1991</u>	<u>1990</u>	<u>Average</u>
Total hunters checked	948	+105	-20
Total hours hunted	4,981	+204	-10
Sage grouse per hunter			
(complete hunts)	0.75	-59	-27
Sage grouse bagged per 100 hours	14	-70	-31
Average hours per hunter-day			
(complete hunts)	5.25	+35	· +4
Hours hunted per grouse bagged (complete hunts)	7.04	+232	+31

Much of Utah was again dry with birds concentrated around available water. Hunter success rates from field bag checks showed decreased success for 1991 compared to 1990 and the long-term average.

Sex and Age Composition of the Harvest

A summary of the sex and age composition of harvested sage grouse in 1991 is found in Table 13 and the trend from 1988-91 in Table 14.

Following are data derived from wing surveys in 1991 compared to 1990 and the 1973-90 average:

	<u>1991</u>	<u>Percent</u> <u>1990</u>	<u>change from</u> <u>Average</u>
Sample size	943	0	-17
Percent males	42	0	+2
Percent females	58	0	-2
Young per 100 adults	81	-40	-45
Young per 100 hens (adult)	136	-34	-39

Analysis of wings collected at checking stations during the 1991 season indicates that statewide production was down compared to 1990, and was below the previous 18-year average. This corresponds with brood counts.

Table 1. Summary of sage grouse strutting ground counts by region and county, 1981-91.

LAUNE L. JUILLING VI SARE GOULS SULURING ROUTIN DE COULUS D			1701			Voar					
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1661
Northern Region											
Box Elder											ļ
No. Strutting Grounds Counted	35	15	17	80	32	10	18	15	11	20	16
Total Male Grouse Counted	711	384	322	216	309	288	314	419	343	327	I
County Average (all strutting grounds)	20	26	19	27	10	29	18	28	31	53	21
% Change From Previous Year - Comparable Grounds	-35	-24	-29	8-	7	17	-12	33	3	-17	-11
Cache											
No. Strutting Grounds Counted	ė	1	0	-	•	7	-	-	7	ł	I
Totaf Male Grouse Counted	18	19	•	S	:	œ	ò	6	15	1	1
County Average (all strutting grounds)	9	19	1	s	ł	4	•	•	œ	I	1
% Change From Previous Year - Comparable Grounds	££-	58	1	I	ł	ł	1	100	40	1	1
Morgan											
No. Strutting Grounds Counted	•	•	••	l	e,	5	7	1	1	I	ł
Total Male Grouse Counted	57	65	31	7	33	22	26	19	ł	I	ł
County Average (all strutting grounds)	19	22	10	7	11	٢	13	19	1	1	I
% Change From Previous Year - Comparable Grounds	-51	16	-31	16 -	1000	-33	18	-21	I	I	1
Rich											
No. Strutting Grounds Counted	13	٢	•	9	81	11	12	Ð	9	19	ដ
Total Male Grouse Counted	259	153	188	103	399	296	431	319	281	863	710
County Average (all strutting grounds)	20	77	21	17	22	27	36	8	47	41	32
% Change From Previous Year - Comparable Grounds	s	-21	7	?	49	-28	53	-10	S		-18
Summit								1			
No. Strutting Grounds Counted	٢	7	7	1	•	1	٢	10	I	I	I
Total Male Grouse Counted	6	II	46	16	ł	83	25	17	I	I	ł
County Average (all strutting grounds)	•	9	- 1	16	1	5	4	6	1	I	I
% Change From Previous Year - Comparable Grounds	13	-50	6-	78	1	1	-65	-32	1	I	ł
REGIONAL TOTALS											
No. Strutting Grounds Counted	61	28	36	17	8	33	40	33	19	6 E	38
Total Male Grouse Counted	1,105	632	587	342	741	637	806	783	639	1,190	710
Average Grouse Per Ground (all strutting grounds)	18	23	16	20	14	19	20	24	34	31	27
% Change From Previous Year - Comparable Grounds	-27	-20	-22	6	27	œ	16	Ξ	s		-15

Table 1 (continued)

Region and				•		Year					
County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Central Region											
Juab											
No. Strutting Grounds Counted	ł	I	1	1	1	ł	-	-	I	1	I
Total Male Grouse Counted	ł	ł	1	;	1	ł	6	14	11	4	15
County Average (all strutting grounds)	1	1	ł	1	1	1	•	14	11	4	15
% Change From Previous Year - Comparable Grounds	1	I	1	1	ł	;	•	56	-21	-63	1
Sanpete											
No. Strutting Grounds Counted	7	2	7	7	1	6	4	7	7	7	7
Total Male Grouse Counted	6	Ξ	œ	Đ	•	•	Ó	0	•	0	Ō
County Average (all strutting grounds)	v,	Ŷ	4	I	ł	l	1	•	0	•	ŀ
% Change From Previous Year - Comparable Grounds	0	22	-27	-100	0	0	0	0	0	0	;
Toorle											
No. Strutting Grounds Counted	v)	s	9	9	9	9	ŝ	Ŵ	S	ŝ	ŝ
Total Male Grouse Counted	46	28	28	53	55	82	96	8	4	16	82
County Average (all strutting grounds)	6	9	S	4	6	16	19	18	. IS	18	16
% Change From Previous Year - Comparable Grounds	-64	-64	•	-18	139	149	17	Ŷ	-12	20	-15
Wasatch											
No. Strutting Grounds Counted	5	1	7	7	1	7	7	7	7	7	7
Total Male Grouse Counted	45	18	54	57.	63	117	54	- 23	4	51	H
County Average (all strutting grounds)	ส	6	27	29	32	59	27	26	ដ	26	9
% Change From Previous Year - Comparable Grounds	0	-60	200	6	11	205	-54	-4	-19	18	-75
REGIONAL TOTALS											
No. Strutting Grounds Counted	ė	9	10	10	10	10	Ľ	10	10	10	10
Total Male Grouse Counted	100	57	96	80	118	199	150	155.	132	146	108
Average Grouse Per Ground (all strutting grounds)	11	9	6	œ	12	18	17	16	13	15	12
% Change From Previous Year - Comparable Grounds	-51	64	58	-11	48	170	-25	-3	-16	11	-45

Kegion and											
	1981	1982	1983	1984	1985	1986	1987	1988	6861	1990	<u>6</u>
Southerst Region											
Reaver											
No. Strutting Grounds Counted	٢	~	٢	4	÷	4	4	en.	v n	7	1
Total Male Grouse Counted	140	131	117	8	\$	55	23	\$	11	33	1
County Average (all strutting grounds)	50	61	17	13	15	14	13	15	14	16	4
% Change From Previous Year - Comparable Grounds	9	-6	11-	78	;	22	Ņ	1	5	1	1
			-								
No. Strutting Grounds Counted	Π	0	œ	۲	ł	80	•	œ	÷	10	I
Total Male Groute Counted	298	359	197	133	ł	152	175	251	126	244	1
County Average (all structing grounds)	11	39	25	19	ł	61	19	31	16	24	35
% Change From Previous Year - Comparable Grounds	114	78	-17	-46	1	13	0	24	-50	ł	1
Irou											
No. Strutting Grounds Counted	٢	•	4	ı	Ś	9	4	÷	9	en	l
Total Male Cronse Counted	101	111	105	1	81	131	64	111	127	50	1
County Average (all strutting grounds)	14	12	26	1	16	22	16	19	21	20	23
% Chunge From Previous Year - Comparable Grounds	20	ę	27	;	I	4 9	H-	-13	14	1	1
Kane							. ⁻				
No. Strutting Grounds Counted	I	1	1	1	1	ł	ı	I	1	I	ł
Total Male Grouse Counted	1	1	ł	I	1	1	ł	1	41	1	I
County Average (all strutting grounds)	1	1	I	1	1	ı	1	I	17	1	14
% Change Fram Previous Year - Comparable Grounds	:	I	I	1	1	1	1	1	ı	1	1
No. Strutting Grounds Counted	T		:	1	-	1	1	ï	I	I	ł
Total Male Grouse Counted	77	22	ł	4	7	¢,	ŧ	ł	I	ł	ł
County Average (all strutting grounds)	11	77	ł	4	1	6 2	1	1	ł	ł	I
% Change From Previous Year - Comparable Grounds	I	0	1	I	I	33	1	t	;	1	1
No. Strutting Grounds Counted	7	4	I	ł	1	1	I	61	ł	I	
Total Male Grouse Counted	e	ŝ	ł	I	I	•	I	¢	1	Ĺ	30
County Average (all strutting grounds)	0	1	1	I	I	I	1	ł	ł	I	20
% Change From Previous Year - Comparable Grounds	1	1	1	ı	ı	1	1	•	1	:	1
Wayne								:		ŝ	;
No. Strutting Grounds Counted	14	14	1	(12)•	ł	1	13	13	1	2	<u>e</u> ;
Total Male Grouse Counted	284	300	123	(68)	I	120	182	326	268	259	19 <u>6</u>
County Average (all strutting grounds)	20	21	123	ε	;	đ	14	52	21	56	7
% Change From Previous Year - Comparable Grounds	:	ł	1	'	1	-15	79	-18	;	:	1
REGIONAL TOTALS								1	2	į	ļ
No. Strutting Grounds Counted	4	4	73	13	71	34	R	5	5	9 j	
Total Male Grouse Counted	84S	928	563	185	391	461	473	134	5	%	5
Average Gronse Per Ground (all strutting grounds)	20	. 21	24	15	19	14	16	23	5	34	E
		Ş	•	Ę		:	Ş	ą	ģ		1

1982 1983 1984 1985 6 6 6 5 3 7 - 5 3 7 - 5 3 7 - 5 3 7 - 5 3 7 - 55 15 15 - 43 15 17 - -29 15 17 - -29 16 17 - -29 15 17 - -29 16 17 - -29 20 17 - -29 21 17 - -29 21 17 - -29 21 17 - -29 21 17 - -21 40 -21 - -190 33 37 - - 336 - 336									
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ge From Previous Year - Comparable Grounds 20 -57 56 - -43 ting Grounds Counted 112 156 178 - 121 Vverage (all strutting grounds) 7 10 12 - - Vverage (all strutting grounds) 7 10 12 - - - Vverage (all strutting grounds) 7 10 12 -	•••	7			4	80	4	٢	ł
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ge From Previous Year - Comparable Grounds 0 15 17 - -29 titing Grounds Counted - - - - - - Ale Grouse Counted - - - - - - Average (all strutting grounds) - - - - - - ge From Previous Year - Comparable Grounds - - - - - - ge From Previous Year - Comparable Grounds 17 242 273 - 190 Average (all strutting grounds) 17 20 17 - - Be From Previous Year - Comparable Grounds 56 40 -21 - Average (all strutting grounds) - - - - - Be From Previous Year - Comparable Grounds - - - - - Average (all strutting grounds) - - - - - - Average (all strutting grounds) - - - - - - Average (all strutting grounds) - - - - - - Average (all strutting grounds) - - - - - - <td></td> <td>12</td> <td></td> <td></td> <td>7</td> <td>I</td> <td>7</td> <td>12</td> <td>1</td>		12			7	I	7	12	1
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tting Grounds Countedale Grouse CountedAverage (all strutting grounds)ge From Previous Year - Comparable Groundsge From Previous Vear - Comparable Grounds101216190Average (all strutting grounds)174242273190Average (all strutting grounds)174242273190Average (all strutting grounds)177201716ge From Previous Year - Comparable Groundsdroug Groundsdring Groundsdring Groundsdring Groundsdring Grounds </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td> .</td>									.
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ge From Previous Year - Comparable Grounds - 12 13 13 13 130 - 190 - 11 100 - 11 11 100 - 11 11 100 - 11 11 100 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - -	ł	I			1	ŝ	ł	I	1
ting Grounds Counted 10 12 16 12 ale Grouse Counted 174 242 273 190 Average (all strutting grounds) 17 20 17 16 ge From Previous Year - Comparable Grounds 56 40 -21 -21 ting Grounds Counted -21 ale Grouse Counted Average (all strutting grounds) Average (all strutting grounds) Average (all strutting grounds) Average (all strutting grounds) Average from Previous Vear - Comparable Grounds At TOTALS ale Grouse Counted	I	I			I	•	ł	I	ł
tring Grounds Counted 10 12 16 12 ale Grouse Counted 174 242 273 190 Average (all strutting grounds) 17 20 17 16 Average (all strutting grounds) 17 20 17 16 ge From Previous Year - Comparable Grounds 56 40 -21 ting Grounds Counted ale Grouse Counted Average (all strutting grounds) Average (all strutting grounds) Average (all strutting grounds) Average (all strutting grounds) Atom Previous Year - Comparable Grounds Atom Previous Vear - Comparable Grounds Atom Previous Vear - Comparable Grounds <									
ale Grouse Counted 174 242 273 190 Average (all strutting grounds) 17 20 17 16 ge From Previous Year - Comparable Grounds 56 40 -21 21 tting Grounds Counted		16			14	น	20	20	ł
Average (all strutting grounds)17201716ge From Previous Year - Comparable Grounds5640-2121ting Grounds Counted21ale Grouse CountedAverage (all strutting grounds)ge From Previous Year - Comparable GroundsAt TOTALS31373730ale Grouse Counted364416396336		573			6 159	468	266	321	1
ge From Previous Year - Comparable Grounds 56 40 -21 -1 tting Grounds Counted ale Grouse Counted Average (all strutting grounds) Average (all strutting grounds) Arenge (all strutting grounds) Arenge (all strutting grounds) Arenge (all strutting grounds) At TOTALS At Grouse Counted 32 33 37 36		17			11	21	13	16	I
tting Grounds Counted		-21			-26	£6	ş	•	1
tting Grounds Counted									
unted	:	1	•	•	1	7	7	I	1
trutting grounds)	I	I			1	77	22	I	;
ious Year - Comparable Grounds	1	1			1	Π	11	ł	1
s Counted 32 33 37 30 nuted 364 416 396 - 336	1	1			1	120	0	1	ł
s Counted 32 33 37 30 nuted 364 416 396 - 336									
364 416 396 - 336		37			34	37	40	41	ł
		396	- 3			550	389	536	ł
Average Grouse Per Ground (all strutting grounds) 11 13 13 11 10		13			•	15	10	13	ł
		•	-		-18	37	-37	6	I

ahle 1 (continued)

Table 1 (continued)										l	
Region and		1				Year					
County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Southeastern Region											
Carbon											
No. Strutting Grounds Counted	¢	1	-	;	1	1	٢	10	10	6	80 .
Total Male Grouse Counted	7	•	16	ł	ł	32	55	196	181	146	103
County Average (all strutting grounds)	6	1	16	ł	1	16	œ	20	18	16	13
% Change From Previous Year - Comparable Grounds		ł	100*	1	ı	1	-27	142	Ŷ	- 38	Ŧ
Emery											
No. Strutting Grounds Counted	I	7	ł	I	-	-	7	7	7	2	7
Total Male Grouse Counted	I	•	ł	ł	12	11	10	12	28	Ś	٢
County Average (all strutting grounds)	ł	s	ł	ł	12	11	Ŵ	¢	14	••	4
% Change From Previous Year - Comparable Grounds	ł	1	1	:	1	Ŷ	-18	50	167	-82	6
San Juan											
No. Strutting Grounds Counted	4	4	9	4	4	4	4	4	4	4	4
Total Male Grouse Counted	3	47	2 0	57	6 E	29	35	32	6 €	41	32
County Average (all strutting grounds)	16	12	10	14	10	۲	6	œ	10	01	œ
% Change From Previous Year - Comparable Grounds	65	-25	52	-14	-29	-26	28	<u>6</u>	22	2	<u>;</u>
REGIONAL TOTALS											
No. Strutting Grounds Counted	10	٢	٢	4	4	-	13	16	16	15	•
Total Male Grouse Counted	65	56	75	51	ŝ	2	100	240	248	192	47
Average Grouse Per Ground (all strutting grounds)	7	8	Π	14	10	9	ee	15	16	13	œ
% Change From Previous Year - Comparable Grounds	58	-28	34	-14	-29	-26	•	74	•	-35	7
STATE TOTALS											ł
No. Strutting Grounds Counted	154	121	113	43	97	118	126	137	119	130	Ц
Total Male Grouse Counted	2,469	2,089	1,711	664	1,234	1,708	1,818	2,734	2,041	2,660	574
Average Grouse Per Ground (all strutting grounds)	16	17	15	15	13	14	14	50	17	20	3 0
% Change From Previous Year - Comparable Grounds	¢,	7	œ	-18	-1	5	2	રા	14	5	÷
										ľ	

		Distinct			Mixed Young											
Region and		Broads		Mean	& Adults		Adults w/o	Total	Total	Young/	Vehicle		Hours of Effort	f Effort		Birds/
County	-	Adults Youn	Young	Brood	Adults Young		Young	Adults	Young	100 Adults	Miles	Vehicle	Horse Walk	Walk	Total	100 IIr
Northern Region																
Box Elder	17	17	3	3.71	7	Π	27	46	74	161	213	30	69	20	119	101
Cache	:	ł	I	ł	ł	1	ł	1	:	I	:	I	1	I	ı	I
Davis	:	ł	1	ı	I	ł	1	ł	I	ı	I	ľ	1	ł	1	1
Morgan	I	I	1	ł	ł	I	1	ł	1	1	1	ł	I	I	I	1
Rich	16	16	8	3.00	12	34.	94	122	8	61	341	8	4	ł	67	304
Summit	1	ł	ł	I	1	ł	1	ł	1	ł	1	25	. 1	I	25	1
Weber	I	I	I	ı	ł	1	;	ł	ı	1	ł	1	ł	I	I	ł
REGIONAL TOTALS	33	3	III	3.36	14	45	121	168	156	93	554	118	73	8	211	154
Central Region																
Juab	I	I	1	1	ł	1	1	ł	1	I	8	9	I	I	9	i
Salt Lake	1	1	I	ł	I	:	•	1	1	I	ł	I	ł	I	ł	I
Sanpete	I	:	I	1	I	1	:	1	I	ł	1	I	ı	I	Ì	ł
Tooele	¢	φ	23	3.83	7	20	7	15	43	287	155	● `	Ĺ	ŝ	14	414
Utah	1	1	12	12.00	l	I	1	-	12	1,200	22	1	ł	I	-	1,300
Wasatch	I	;	1	1	i	ı	!	1	I	I	1	1	:	I	I	I
REGIONAL TOTALS	-	1	35	5.00	1	20	2	16	55	344	270	16	I	S	21	338
Southern Region			0													
Beaver	I	ł	1	1	ł	1	ł	ı	1	I	1	ï	I	I	I	I
Garfield	•••	m	18	6.00	I	1	11	14	18	129	I	ŝ	IN .	1	10	320
Iron	-	-	S	5.00	1	¢	H	14	14	100	ı	1	٢	1	-	400
Kane	ł	ţ	1	ı	ł	ł	ł	ł	:	:	1	I	ł	I	1	1
Millard	:	I	I	ı	ł	I	1	;	ł	1	1	I	I	I	ł	1
Pinte	I	1	I.	ı	1	ŧ	1	I	1	:	ł	I	1	I	I	I
Sevier	T	-	Ś	ı	ł	1	ł	1	ŝ	500	30	4	I	ŧ	4	150
Washington	1	1	ł	ł	ł	I	I	1	1	ł	1	I	I	1.	ı	ł
Wayne	1	1	1	5.00	1	I	ł	1	:	478	1	:	I	I	1	511
REGIONAL TOTALS	S	S	28	5.60	2	9	22	29	37	128	30	¢	12	1	12	314
Northeastern Region																
Daggett	2	7	4	2.00	ł	9	ł	7	13	650	ŝ	7	:	1	6	1,000
Duchesne	17	7	•0	4.00	ł	I	•	Ś	œ	160	50	2	1	4	16	81
Uintah	3	3	6	2.00	8	18	10	21	24	114	35	9	I	1	÷	1,500
REGIONAL TOTALS	7	1	18	2.57	æ	27	13	28	45	161	60	17	I	4	21	356
Southeastern Region																
Carbon	-	-	Ŷ	6.00	1	ı	•	6 0	9	200	SS	10	1	ì	10	8
Emery	I	l	ł	1	1	I	ł	ł	1	ł	I	I	I	ı	1	I
Grand	ł	;	ł	1	ł	ł	1	1	1	I	1	I	1	I	I	1
San Juan	-	1	2	2.00	I	1	1	1	2	200	31	9	1	T	Ð	100
REGIONAL TOTALS	7	2	8	4.00	I	1	3	5	8	160	86	13	1	1	13	100

Table 3. Trend of sage grouse young per 100 adults, 1981-91	trouse youn	g per 100 ad	ults, 1981-91	_								
Region and						Year						Average
County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1661	1981-90
Northern Region												
ikax Elder	8	127	135	75	365	178	94	108	167	267	191	
Cache	122	I	ı	1	1 :	ł	ı	ı	1	S0	1	
Davis	1	ı	I	:	I	:	ł	1	1	ł	1	
Morgan	120	1	240	ł	300	:	500	;	117	ł	1	
Rich	85	8	1	164	96	16	116	153	. 1	100	67	
Summit	114	80	67	ı	400	167	59	;	;	t	I	•
Weher	ł	I	ł	1	;	1	ı	1	1	1	1	
REGIONAL TOTALS	82	2	145	126	130	- 103	115	135	156	235	8	132
Central Region												
Juab	245	ł	1	ł	ł	1	:	380	250	196	1	
Salt Lake	;	ļ	ı	:	I	:	1	I	1	4	ł	
Sourpete	348	314	305	ł	1	ł	:	1	;	;	1	
Tonele	101	107	176	100	125	901	207	100	194	110	287	
Utah	1	I	;	I	- 1	:	1	150	1	1	1.200	
Wasatch	236	166	157	175	43	200	209	300	:	667	. 1	
REGIONAL TOTALS	171	509	214	155	3	120	209	135	177	166	344	162
Southern Region												
Beaver	104	32	ı	400	43	ı	35	1	ı	1	ł	
Garfield	8	128	133	140	229	125	144	144	40	16	129	
Iron	113	148	150	83	ı	250	198	146	155	264	100	
Kane	I	1	1,000	I	ł	ł	400	I	ł	ł	1	
Millard	I	t	:	ı	1	1	:	ł	I	ł	I	
Piute	I	ł	:	ı	I	1	38	I	1	I	1	
Sevier	I	1	I	:	ł	ł	1	1	525	I.	500	
Washington	ł	ı	I	1	1	;	1	ı	ł	1	I	
Wayne	263	193	104	411	152	44	455	86	t	168	478	
REGIONAL TOTALS	154	130	98	92	137	105	216	127	135	154	128	135
Northeastern Region												
Daggedt	230	369	82	250	170	190	124	181	433	233	650	
Duchesne	235	305	240	145	297	180	137	288	217	609	160	
Uintah.	253	183	375	67	261	127	192	164	148	352	114	
REGIONAL TOTALS	242	237	265	126	255	131	159	172	155	374	161	212
Southeastern Region												
Carthon	64	1	I	238	400	133	150	1	56	33	200	
Emery	ł	ł	1	I	ł	:	:	ł	ł	ł	ı	
Grand	ı	ł	1	ı	1	1	ı	1	1	1	I	
San Juan	350	1	51	500	88	60	:	200	50	50	200	
REGIONAL TOTALS	83	. 1	57	267	122	81	150	200	55	88	160	110
STATE TOTALS	142	179	202	125	147	114	160	145	147	183	122	154

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Table 4. Trend of average brood size for sage grouse, 1981-91.

County	1981	1982	1983	1984	1985	1986	1987	1988	1989	0661	1991	1981-90
Northern Region												
Box Elder	3.97	3.92	5.00	5.75	5.31	3.57	3.88	33.80	3.80	4.25	3.71	
Cache	3.50	I	ł	. 1	ł	ł	1	I	1	5.00	ı	
Davis	ł	1	ı,	T	I	ł	1	;	1	1	ı	
Могдал	5.14	I	4.20	1	3.00	1	5.00	ı	7,00.	1	;	
Rich	3.67	4.4S	I	3.92	3.96	5.08	5.00	4.27	ı	2.00	3.00	
Summit	3.67	2.67	3.33	;	1	4.00	5.00	4.00	t	1	ł	
Weber	1	ł	ł	I	ł	1	1	ł	ł	1	1	
REGIONAL TOTALS	3.94	4.00	4.25	4.36	4.39	4.74	4.82	4.17	4.30	3.67	3.36	4.26
Central Region												
Juab	2.00	I	ı	:	1	I	:	6.33	4.00	4.75	ı	
Salt Lake	1	1	ı	1	1	I	I	I		1	1	
Sanpete	4.80	6.36	5.93	ı	:	ł	1	ł	I	ı	1	
Tooele	3.00	3.33	4.33	3.33	3.29	3.25	3.60	3.50	3.00	3.13	3.83	
Utah	1	1	1	ł	1	I	:	ı	;	I	12.00	
Wasatch	3.83	4.81	3.14	4.90	2.00	5.00	6.94	6.00	I	6.67	1	
REGIONAL TOTALS	3.44	5.32	4.37	4.54	2.56	3.60	5.42	4.29	3.40	4.27	5.00	4.12
Southern Region												
Beaver	5.50	4.00	1	4.00	5.00	1	5.00	1	ı	ł	I	
Garfield	4.50	3.43	3.43	4.00	4.50	2.00	4.00	4.60	ı	4.00	6.00	
Iron	3.57	6.40	3.00	3.50	ł	4.00	4.64	3.67	4.66	6.00	S.00	
Kane	I	ł	5.00	1	1	ı	4.00	I	1	I	I	
Millard	t	ı	1	1	;	1	ı	ı	ı	1	ı	
Piute	I	I	ı	ł	ł	;	1	;	I	ł	ı	
Serier	I	1	I	ł	1	ŀ	1	7.00	1	I	ı	
Washington	I	t	ł	ł	1	ł	ł	ı	I	ı	I	
Wayne	3.96	4.43	3.67	5.00	3.57	6.00	6.14	6.29	1	4.30	5.00	
REGIONAL TOTALS	3.93	4.52	3.62	4.27	4.00	4.29	4.89	4.89	4.66	4.82	S.60	4.39
Northeastern Region												
Daggett	4.11	5.13	5.80	4.63	3.00	1.00	4.00	4.45	4.30	6.00	2.00	
Duchesne	3.91	5.32	4.59	3.77	4.73	4.29	3.54	3.60	2.17	00.9	4.00	
Ciotab	5.27	4.95	5.13	3.00	5.00	5.44	5.55	4.05	5.15	5.60	2.00	
REGIONAL TOTALS	4.50	5.10	5.00	3.96	4.43	4.94	4.59	4.09	4.58	5.63	2.57	4.68
Southeastern Region												
Carbon	ſ	I	1	4.33	4.00	4.00	1.50	ł	4.50	1	6.00	
Emery	1	ł	ı	ł	1	1	1	;	1	:	I	
Grand	ł	ł	1	1	;	1	ı	:	- 1	1	ł	
San Juan	3.50	1	4.00	5.00	3.50	3.00	I	1	2.00	1	2.00	
REGIONAL TOTALS	3.50	1	4.00	4.50	3.67	3.40	1.50		3.67		4.00	3.03

Average 06-1861 564 13 318 182 521 272 1,300 1,000 1,500 273 356 8 8 338 1991 414 314 155 2 511 ŝ ł ł ខ្ម Ξ 8 I. 102 ŝ 1 1 ı 1 1 386 1990 <u>8</u> 585 350 566 8 8 20 ŝ ŧ 2 3 8 1 33 Т t Ř 1 I. I ŧ ł 1,000 1,191 1989 168 123 288 휘집 : 502 1 1 1 2 741 3 3 227 ł 8 1 13 ł. 1 I 31 ł I. 1 ł 1,517 15 1988 125 542 23 5 50 118 : Ŝ 417 30 271 I. t 2 Т ł 1 5 t 1 ł 1 1 Т 1 ≈ \$ 1987 1.331 5 2 38 5 E 575 275 8 382 742 렳 83 ł 8 1 Ĩ 251 1 I t 1 t I. 1 1 I. ł 1 8 2 2 1986 813 474 Year 344 18 165 8 198 746 : 2 2 316 ž Ł 225 466 ŧ I 1 t Š. 282 21 1 ł - F L ł 1985 1 22 22 2 325 **88** 358 342 267 244 28 288 186 242 ŝ 262 ł ł 1 28 ŝ t 1 1984 · 5 3 월 314 364 122 304 415 1 ŝ 118 381 308 **\$**54 28 5 S 2 ł 5 1 1 I. 1 1 Т Table 5. Trend of sage grouse observed per 100 hours, 1981-91. 1983 1 8 8 8 63 866 631 612 392 203 III <u>5</u> 214 275 2 Ł 33 18 3 - 4 F 1 1 1 1 8 I 1,036 1982 845 808 니를 - 원충 8 144 - 28 30 202 1 1 88 춯 I 5 ÷ F 1 L 1 8 1 t 1 ,085 1981 **538** : 814 £8 135 8 627 3 4 1 513 239 8 ŧ 8 ł ł. 1 E 32 E ÷ 88 I I 1 **REGIONAL TOTALS REGIONAL TOTALS REGIONAL TOTALS** REGIONAL TOTALS **REGIONAL TOTALS** Northenstern Region Southeastern Region STATE TOTALS Region and Southern Region Northern Region County **Central Region** Washington Duchesne Salt Lake San Juan **Box Elder** Wasatch Carbon Garfield Sanpete Wayne Daggett Morgan Emery Beaver Grand Millard Uimtah Snmmit Weber Tooele Sevier Cache Juab Davis Kane Piute Rich Utah 2

Table 6. Summary of sage grouse hunter success and distribution of harvest and hunter pressure by region and county, 1991.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	も OF PRESSURE	% OF HARVEST
NORTHERN REGION	· · · · ·					
BOX ELDER	81	2,818	1,548	0.55	15.16	12.34
CACHE * *	32		330	0.32	5.61	
DAVIS**	4	191	34	0.18	1.03	2.64
MORGAN * *	6	243	226	0.93		0.28
RICH	85	3,061	3,079	1 01	1.31	1.80
SUMMIT**	8	417	278	1.01	16.46	24.55
WEBER**	17	1,078	365	0.67 0.34	2.25 5.80	2.22 2.91
REGIONAL TOTALS	233	8,854	5,862	0.66	47.62	46.74
CENTRAL REGION						
JUAB**	7	226	121	0.54	1.22	0.97
SALT LAKE**	4	173	121	0.70	0.94	0.97
SANPETE * *	6	278	121	0.44	1.50	0.97
TOOELE * *	10	347	121	0.35	1.87	0.97
UTAH * *	9	243	208	0.86	1.31	1.66
WASATCH**	11	330	156	0.47	1.78	1.25
REGIONAL TOTALS	47	1,600	852	0.53	8.61	6.80
SOUTHERN REGION						
BEAVER	4	121	34	0.29	0.65	0.28
GARFIELD	19	574	295	0.52	3.09	2.36
IRON	9	260	243	0.93	1.40	1.94
KANE	3	52	34	0.67	0.28	0.28
MILLARD**	8	260	330	1.27	1.40	2.64
PIUTE	10	347	347	1.00	1.87	2.04
SÉVIER	20	991	382	0.39	5.33	3.05
WASHINGTON * *	1	34	69	2.00	0.19	
WAYNE	36	1,235	1,269	1.03	6.64	0.55
REGIONAL TOTALS	110	3,879	3,009	0.78	20,86	24.00
NORTHEASTERN REGI						
DAGGETT	9	365	173	0.48	1.96	1.39
DUCHESNE	17	521	347	0.67	2.81	2.77
UINTAH	64	2,661	1,878	0.71	14.31	14.98
REGIONAL TOTALS	90	3,548	2,400	0.68	19.08	19.14
SOUTHEASTERN REGI						
CARBON	11	452	226	0.50	2.43	1.80
EMERY * *	4	139	121	0.80	0.75	0.97
GRAND	0	0	0	0.00	0.00	0.00
SAN JUAN**	3 	121	69	0.57	0.65	0.55
REGIONAL TOTALS	18	713	417	0.59	3.84	3.33
UNKNOWN	0	0	0	0.00	0.00	0.00
STATE TOTALS	498	18,596	12,542	0.67	100.00	100.00

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* Total hunter-trips from questionnare returns. **Closed to sage grouse hunting in 1991.

Region and				· <u> </u>	Year			<u> </u>
<u>County</u>	1984	1985	1986	1987	1988	1989	1990	1991
<u>Northern Region</u>								
Box Elder	0.80	0.73	0.94	1.05	0.78	0.94	0.92	0.55
Cache	0.54	0.21*	0.18*	0.38*	0.47*	0.45*	0.58	0.32*
Davis	0.18*	0.25*	0.25*	0.00*	0.00*	0.72*	0.25*	0.18*
Morgan	0.32	0.25*	0.47*	1.25*	0.36*	0.50*	0.33*	0.93*
Rich	0.50	0.30	0.58	0.88	0.81	0.63	0.85	1.01
Summit	0.23	0.20*	0.50*	0.55*	0.57*	0.71*	0.77*	0.67*
Weber	0.67	0.43*	0.57*	0.56*	0.64*	0.27*	0.43*	0.34*
REGIONAL TOTALS	0.55	0.49	0.67	0.76	0.66	0.69	0.75	0.66
Central Region		-						
Juab	0.33*	4.00*	3.00*	0.60*	0.88*	0.22*	0.20*	0.54*
Salt Lake	0.25*	0.08*	2.54*	0.00*	0.50*	0.30*	0.00*	0.70*
Sanpete	0.64*	0.44*	0.38*	0.62*	0.23*	0.61*	1.00*	0.44*
-	0.53*	0.23*	1.54*	1.10*	0.27	0.41*	1.15*	0.35*
Tooele	0.77*	0.45*	0.42	0.62	0.42	0.33	0.39	0.86*
Utah	0.28	0.19	0.42	0.58	0.48*	1.50*	0.55*	0.47*
Wasatch			0.85	0.70	0.36	0.42	0.52	0.53
REGIONAL TOTALS	0.51	0.46	0.05	0.70	0.30	0.42		
Southern Region			0.00	1 00	0.76	0 40	0.38	0.29
Beaver	1.29	0.33	0.90	1.08	0.76	0.42	•	
Garfield	1.33	0.78	0.68	1.50	1.17	1.14	0.74	0.52
Iron	1.00	1.85	0.82	1.29	0.61	0.62	0.58	0.93
Kane	0.00	0.50	0.13	0.00	1.00	0.75	0.54	0.67
Millard	0.67*	2.00*	0.50*	1.00*	0.00*	0.09*	3.14*	1.27*
Piute	1.44	0.95	0.50	0.58	0.95	1.87	0.50	1.00
Sevier	0.67	0.40	0.43	1.00	0.67	0.39	1.08	0.39
Washington	0.00*	0.50*	0.00	0.00*	0.00*	0.00*	1.63*	2.00*
Wayne	1.25	1.19	1.19	0.60	1.30	1.05	1.04	1.03
REGIONAL TOTALS	1.19	0.92	0.75	0.99	0.91	0.86	0.92	0.78
Northeastern Reg:	ion							-
Daggett	0.16	0.92	0.45	1.00	1.20	0.33*	0.73	0.48
Duchesne	0.50	0.67	1.00	0.91	1.00	1.14	1.19	0.67
Uintah	0.98	1.08	1.30	1.25	1.12	0.98	0.87	0.71
REGIONAL TOTALS	0:76	0.95	1.16	1.17	1.11	0.93	0.89	0.68
Southeastern Reg.								
Carbon	0.33*	0.60	1.24	1.09	1.04	0.44	0.29	0.50
Emery	1.50*	0.63	2.71	1.00	0.77	0.95	0.20*	0.88*
Grand	0.00	1.00	0.40	2.00	0.00	1.50	1.11	0.00
San Juan	<u>0.00*</u>	0.00	1.33	0.00	10.00	0.00*	0.00*	0.50*
	0.90	0.60	1.44	1.13	1.40	0.63	0.47	0.59
REGIONAL TOTALS	0.90	0.80	4.44.44		1.40	0.05	0.4/	
Unknown counties	7.50	5.67	2.00	0.00	1.63	0.00	0.00	0.00
Closed areas	(29.95)	(9.04)	(10.58)	(6.06)	(3.25)	(4.65)	(9.65)	(10.52)
STATE TOTALS	0.72	0.78	0.84	0.89	0.76	0.71	0.78	0.67

Table 7. Summary of sage grouse bagged per hunter-day by region and county, 1984-91.

*Closed season.

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					Vos~			
Region and County	1984	1985	1986	1987	<u>Year</u> 1988	1989	1990	
Northern Region			<u>_</u> 00	1301	1700	1903	1990	1991
Box Elder	18.95	14.20	19.61	16.63	16.47	22.39	17.21	10 74
Cache	4.83	1.31*	0.88*		4.77*			12.34
Davis	0.92		0.35*		0.00*	2.72*		2.64*
Morgan	2.60	0.37*	2.45*			2.72*		
Rich	3.90	2.80	4.90	8.12	1.36*	1.06*		
Summit	1.86	0.37*	0.88*		12.04	11.65*		24.55
Weber	3.34	1.12*	2.80*		1.81*	0.76*		
REGIONAL TOTALS			31.87		2.61*	2.12*		
<u>Central Region</u>	<u> </u>	5 20.51	.31.0/		39.09	43.42	42.24	46.74
Juab	0.37	* 2.98*	2.10*	0.58*	0.79*	0.30*	0.39*	0 07+
Salt Lake	0.18		5.78*		0.11*		+	
Sanpete	1.30		1.58*	3.48*	1.25*	0.45*		
Tooele	1.48		3.50*	4.25*		2.57*		
Utah	5.02				1.81	2.27	1.96*	
Wasatch			3.85	4.64	2.15	3.18	2.09	1.66*
REGIONAL TOTALS	<u>1.86</u> 10.22	0.75	2.63*		1.81*	0.91	0.78*	<u> </u>
Southern Region	10.22	10.05	19.44	14.31	7.95	9.68*	6.39_	6.80
Beaver	1.67	1.12	1.58	E 43	1 01	0 - 6		
Garfield	9.66	6.54	4.38	5.41	1.81	0.76	0.65	0.28
Iron				4.64	3.86	8.62	7.17	2.36
Kane	1.30	4.48	2.45	3.48	1.59	2.42	1.43	1.94
	0.00	0.18	0.18	0.00	0.11	0.45	0.91	0.28
Millard	0.74		0.18*	0.38*	0.00*	0.15*	2.87*	2.64*
Piute	4.27	3.36	0.35	1.35	2.04	4.24	0.65	2.77
Sevier	1.48	1.12	1.75	2.32	5.00	1.97	6.78	3.05
Washington	0.00,		0.00*	0.00*	0.00*	0.00*	1.69*	
Wayne	7.44	8.03	6.65	2.32	8.40	6.51	<u>6.39</u>	10.13
REGIONAL TOTALS	26.58	27.10	17.50	19.92	22.84	25.11	28.55	24.00
Northeastern Rec								
Daggett	0.55	2.24	0.88	2.32	2.04	0.76*	3.78	1.39
Duchesne	2.60	5.23	3.68	4.06	2.61	3.63	4.82	2.77
Uintah _	<u>15.98</u>	<u>19.43</u>	18.21	23.21	17.61	12.41	11.8	14.98
REGIONAL TOTALS	19.15	26.91	22.78	29.59	22.27	16.79	20.47	19.14
Southeastern Rec								
Carbon	0.92*		3.68	2.32	2.95	1.66	0.91	1.80
Emery	3.90*		3.33	0.19	1.13	2.87	0.13*	0.97*
Grand	0.00	0.18	0.35	0.77	0.00	0.45	1.30	0.00
San Juan _	0.00*		0.70	0.00	2.27	0.00*	0.00*	0.55*
REGIONAL TOTALS	4.83	2.24	8.06	3.28	6.36	4.99	2.35	3.33
Unknown counties	2.78	12.71	0.35	0.00	1.47	0.00	0.00	0.00
Closed areas	(14.83)	(11.47)	(23.09)	(16.79)	(14.51)	(14.52)	(13.81)	(21.36)
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 8. Percentage distribution of sage grouse harvest by region and county, 1984-91.

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

Region and <u>County</u> Northern Region Box Elder	1984	1985	1006	1003	Year			
Northern Region	1984	1985				1989	1990	1991
			1986	1987	1988			
Box Elder				14.11	15.99	16.81	14.71	15.16
	16.89	15.15	17.53		7.65*	4.28*	7.05	5.61*
Cache	6.38	4.71*	4.12*	11.87*			0.82*	1.03*
Davis	3.72*	0.58*	1.18*	0.34*	1.63*	2.68*	1.84*	1.31*
Morgan	5.85	1.16*	4.42*	0.68*	2.83*	1.50*		16.46
Rich	5.58	7.28	7.07	8.26	11.26	13.17	13.89 1.33*	2.25*
Summit	5.71	1.46*	1.47*	1.89*	2.40*	0.75*		
Weber	3.59	2.04*	<u>4.12*</u>	<u> 1.54* </u>	<u> </u>	5.57	4.49*	5.80*
REGIONAL TOTALS	47.74	32.51	<u>39.91</u>	<u>38.72</u>	44.88	44.75	44.13	47.62
Central Region								
Juab	0.79*	0.58*	0.59*	0.86*	0.68*	0.96*	1.53*	1.22*
Salt Lake	0.53*	1.75*	1.91*	0.17*	0.17*	1.07*	0.51*	0.94*
Sanpete	1.46*	2.62*	3.53*	4.99*	4.12*	3.00*	0.92*	1.50*
Tooele	1.99*	1.89*	1.91*	3.44*	5.07	3.96	1.33*	1.87*
Utah	4.65*	8.01*	7.81	6.71	3.86	€.85	4.19	1.31*
Wasatch	4.78	3.06	3.39*	2.06	2.83*	0.43*_	1.12*	1.78*
REGIONAL TOTALS	14.23	17.93	19.15	18.24	16.76	16.27	9.60	8.61
Southern Region	47.23	1,1,1,0						
	0.93	2.62	1.47	4.47	1.80	1.28	1.33	0.65
Beaver	5.18	6.56	5.45	2.75	2.49	5.35	7.56	3.09
Garfield	0.93	1.89	2.50	2.40	1.97	2.78	1.94	1.40
Iron	0.00	0.29	1.18	0.00	0.08	0.43	1.33	0.28
Kane			0.29*	0.34*	0.00*	1.18*	0.72*	1.40*
Millard	0.79*	0.73*			1.63	1.61	1.02	1.87
Piute	2.12	2.77	0.59	2.06	5.67	3.53	4.90	5.33
Sevier	1.59	2.18	3.39	2.06			0.82*	0.19*
Washington	0.13*		0.00	0.34*	0.42*	0.00*	4.80	6.64
Wayne	4.25	5.24	4.71	3.44	4.90	4.39		20.86
REGIONAL TOTALS	15.96	22.88	19.59	17.89	18.99	20.56	_24.41_	20.00
Northeastern Req	<u>ion</u>							1.06
Daggett	2.25	1.89	1.62	2.06	1.28	1.61*	4.09	1.96
Duchesne	3.84	6.12	3.09	3.95	1.97	2.25	3.17	2.81
Uintah	11.70	13.99	<u>11.78</u>	<u>16.52</u>	11.95	8.99	10.73	14.31
REGIONAL TOTALS	17.95	22.01	16.59	22.54	15.21	12.85	<u>17.98</u>	<u>19.08</u>
Southeastern Reg	ion	•						
Carbon	1.99*	1.46	2.50	1.89	2.14	2.68	2.45	2.43
Emery	1.86*	1.16	1.03	0.17	1.11	2.14	0.51*	0.75*
Grand	0.00	0.14	0.74	0.34	0.00	0.21	0.92	0.00
San Juan _	0.00*	0.14	0.44	0.17	0.17	0.54*	0.00*	
REGIONAL TOTALS	3.85	2.91	4.71	2.57	3.43	5.57	3.88	3.84
Unknown counties	0.26	1.75	0.15	0.00	0.68	0.00	0.00	0.00
Closed areas	(17.91)	(26.21)	(26.90)	(26.46)	(25.82)	(23.57)	(15.94)	(26.29)
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 9. Percentage distribution of sage grouse hunting pressure by region and county, 1984-91.

Ŷ

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

	Total	Total	Hunter-Days	Sage Grouse	Sage Grouse Pe
Year	Hunters*	Harvest*	Afield	Per Hunter-Day	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	8 61	2,246	-	-	2.61
961**	1,078	1,918	<u> </u>	-	1.78
1962***	2,382	5,352	5,097	1.05	1.89
1963	12,366	3,793	15,564	0.89	1.12
1964	4,362	6,827	5,807	1.18	1.56
965	3,243	3,881	4,673	0.83	1.20
966	2,612	3,962	4,006	0.99	1.52
967	5,336	5,089	7,860	0.65	0.95
968	9,115	11,109	13,601	0.82	1,22
969	12,894	22,282	20,466	1.09	1,73
970	12,036	15,877	18,506	0.86	1.32
971	12,893	20,013	21,509	0.93	1.55
972	13,040	15,983	22,232	0.72	1.33
973	10,017	13,926	19,049	0.73	1.39
974 ·	12,214	15,215	23,516	0.65	1.25
975	13,996	18,916	25,720	0.74	1.35
976	15,283	24,541	28,342	0.87	1.53
977	14,078	18,615	25,759	0.72	1.32
978	16,231	25,938	29,861	0.87	1.60
979	16,927	28,280	30,682	0.92	1.67
980	15,219	22,770	26,893	0.85	1.50
981	10,083	15,857	18,617	0.85	
982	8,997	12,383	15,663	0.79	1.57
983	9,201	14,949	18,467	0.81	1.38
984	8,283	10,921	15,266		1.63
985	7,586	11,466	13,200	0.72	1.32
986	7,233	11,766	13,992	0.78	1.51
987 ·	7,060	12,673		0.84	1.63
88	8,499		14,242	0.89	1.80
989 189	9,002	14,692	19,418	0.76	1.73
990	9,002 9,014	13,710 15,784	19,373	0.71	1.52
991			20,147	0.78	1.75
otals	8,018	12,542	18.596	0.67	1.56
951-91)	305 194	451 144			
verage	305,184	451,147	537,626	<u> </u>	
951-90)	7 470	10.0/5	18 000		
/24-70)	7,429	10,965	17,898	0.84	1.85

Table 10. Statewide summary of sage grouse harvest statistics, 1951-91.

* The number of sage grouse hunters and consequently harvest was limited

by permits available from 1951 through 1962.

** Estimated.

*** Totals and indices based on indiscrete data.

		Ĩ	All Hunts					Complete Hunts	lunts		
Region and	Total	Total	Total	Total	Birds/	Complete	Total	Total	Total	Bards/	Birds/
	Parties	Ilunters	Hours	Birds	100 FLr	Hunts	Ilunters	Roors	Birds	-100 EF	Hunter
Northern Region											
Dax Elder	28	15	133	24	18	139	361	2,716	301	=	0.83
Cache	4	31	20	12	6	-			7	100	2.00
Davis	ı	1	1	ļ.	1	ec	16	12	0	1	00.0
Morgan	1	1	1	ł	;	ł	;	1	1	1	I
Rich	I	:	ı	ł	1	1	267	1,114	8 6	6	0.37
Summit	ı	1	ı	ł	I	1	1	1	;	I	I
Weber	1	1	1	1	t	1	ı	1	1	;	1
REGIONAL TOTALS	32	106	153	36	24	148	64S	3,844	401	10	0.62
Central Region											
Juah	ı	;	I	ł	1	ł	, I	:	:	1	1
Salt Lake	I	:	ł	I	1	ł	ł	1	;	:	1
Sanpete	ł	1	I	ł	1	1	ł	:	ł	ł	1
Tooele	ł	1	1	1	ł	ł	· 1	ı	1	ı	I .
Utah	:	I	ł	ı	ł	I	1	ł	1	ł	I
Wasatch	1	ı	ł	:	1	I	1	1	:	ı	1
REGIONAL TOTALS		1	.	1	ľ	1	1	1		1	ı
Southern Region											
Deaver	1	ł	ı	ł	1	1	;	:	1	I	1
Garfield	1	ł	1	ł	1	;	:	I	1	I	I
Irou	ı	ļ	I	1	1	1	:	1	1	1	I
Kane	I	ı	1	1	1	I	1	1	:	:	I
Millard	1	;	I	ł	1	I	I.	1	1	L	ł
Pinte	:	:	ł	ł	ł	I	;	1	١	ł	1
Sevier	;	:	ł	ł	I	I	;	1	ł	ł	t
Washington	ł	ı	ł	1	I	1	ł	:	1	ı	1
Wayne	I	ı	:	:		;	134	639	137	7	1.02
REGIONAL TOTALS	ł	1	1	1	1	1	134	699	137	21	1.02
Northeastern Region											
Daggelt	14	6 £	103	33	32	H	52	5	76	8	
Duchesne	23	86	311	52	17	1	26	6	5 1	EI :	
Uintah	74	181	526	164	31	53	118	326	IEI	9	
REGIONAL TOTALS	111	318	940	249	26	11	169	498	170	34	1.01
Southeastern Region					•	•					
Carbon	1	1	I	:	I	1	:	I	I	:	t
Exuery	ł	I	:	ł	1	ł	ł	ı	1	;	ł
Grand	I	:	1	ł	:	I	1	ı	1	I.	1
San Juan		8	1	1	:	:	-	1	:	1	'
REGIONAL TOTALS	:	:	1			;	1	:	;	1	1

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						İ			2//1		TAAT	
Region and	Birds/	Birds/	Birds/	Birds/	Birds/	Rirds/	Rirds/	Rinde/	Rinde/	Diadal		
County	100 Hr	Hunter	100 IIr	Ihinter	100 Hr	Hunter	Hunter	100 Hr	Hunter	100 IIr	Hunter	100 H-
Northern Region												
Box Elder	17	1.06	19	1.39	16	1.21	21	1.28	25	1.77	11	0.02
Cache	19	0.71	ı	;	ı	;	1	1	}			
Davis	:	ł	I	ł	;	1	ł	1	1			00.4
Morgan	ł	I	;	;	1	:	:	ł		:		00.0
Rich	14	0.57	17	0 70	18	U VY U	6	0 20	1 2	; 5	<	; ;
Summit	: 1				01	A0-0	¢	00.0	3	1.0.0	P,	0.37
Weher		1	1	1	I .	1	1	:	;	1	ı	1
DECLONAL ROTALS	, ; 	1	•	1	•	1	1	1	1	1	1	1
KEAHUNAL TUTALS	11	0.93	£	1.20	17	1.06	16	0.87	2	1.24	2	0.62
contar region												
Juab	1	ł	1	ł	:	1	ł	1	ł	I	I	I
Salt Lake	1	I	ł	ı	ı	:	;	ł	ł	1	ł	1
Sanpete	I	1	1	1	ł	I	I	1	1	ı	;	I
Tooele	I	ł	1		40	0.83	41	0.87	1	I	1	I
Utah	1	ł	ł	:	1	1	ł	1	1	ł	1	ł
Wasatch	1	I	I	1	1	;	I	1	1	I	:	I
REGIONAL TOTALS	ı	ı	1	,	ŧ	0.93	41	0.87		;	,	1
Southern Region												
Beaver	ł	ł	1	1	t	6	ł	I	I	;	ı	1
Garfield	••	0.20	20	1.71	65	1.82	64	0.33	1	;	ı	1
Iron	ł	ì	•	0.00	14	0.70	ı	0.64	ı	ı	I	1
Kane	ł	ı		ł	:	ı	1	1	1	1	1	I
Millard	I	1	1	1	ł	ı	1	I	1	ı	ı	1
Piute	1	ł	1	1	;	ı	1	;	;	1	1	ı
Sevier	1	ł	I	1	1	:	I	1	ł	ł	;	I
Washington	ŀ	ı	1	ſ	1	;	I	ł	ł	1	ı	. 1
Wayne	22	1.23	21	0.95	23	1.12	I	I	23	0.81	21	1.02
REGIONAL TOTALS	22	1.20	22	0.97	24	1.15	227	0.51	23	0.81	21	1.02
Northeastern Region												
Daggett	47	1.78	80	1.67	9	0.67	9	0.33	17	0.67	35	1.04
Duchesne	2	2.00	75	1.50	:	ŧ	1	:	50	1.00	13	0.50
Uintalı .	49	1.17	36	1.05	26	16.0	20	0.87	27	0.86	40	1.11
REGIONAL TOTALS	52	1.33	40	1.12	27	06.0	18	0.84	26	0.83	4	1.01
Southeastern Region												
Carbon	200	1.00	50	1.00	:	i	22	0.77	13	0.67	I	I
Emery	1	1	ł	:	;	1	ı	:	1	I	ı	1
Grand	1	ı	9 5	3.00	1	1	ł	1	ı	:	ł	I
San Juan	1	1	'	1	1	;	I	1	ł	:	I	1
REGIONAL TOTALS	5 0	1.00	50	1.73	Ţ	1	22	0.77	13	0.67	1	
												1

Table 12. Sage grouse hunter success trend as determined by field bag check, 1986-91.

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Table 13.	Sex and age	composition	of harvested	l sage grouse,	1991.

j

Region and	Sample		Adults			Young		Young/	Young/
County	Size	M	F	Total	М	F	Total	100 Adults	100 Hens
Northern Region									
Box Elder	171	46	65	111	20	40	60	54	92
Cache					·				
Davis							 '		
Morgan		••							
Rich	439	115	146	261	73	105	178	68	122
Summit									
Weber									
REGIONAL TOTALS	610	161	211	372	93	145	238	64	113
Central Region				<u>·</u>					
Juab									
Salt Lake									••
Sanpete .					•-				
Tooele		••		·					
Utah									
Wasatch									
REGIONAL TOTALS		··							
Southern Region									
Beaver						-			
Garfield		~~							
Iron					••		**		
Kane									
Millard							•••		
Piute									
Sevier									
Washington									 .
Wayne	333	49	9 9	148	91	94	185	125	187
REGIONAL TOTALS		49	99	148	91	94	185	125	187
Northeastern Region									
Daggett				-					•••
Duchesne									
Uintah									
REGIONAL TOTALS									••
Southeastern Region	·								
Carbon									
Emery									
Grand							_		-
San Juan									
REGIONAL TOTALS	· · · ·			_					
STATE TOTALS	943	210	310	520	184	239	423	81	136

			1988					6861				1990	8				ľ	1601					A verses 1000 00	00.00	
Region and		Sex Ratio %		Young /		*	Sex Hatlo %		Young /		Sex	Sex Ratto %	۲a	Young /		Sex	Sex Railo %		Voune /			See Ratio 4	1	Volume	
County	=	W	ia.	V001 11001	¥001	c	W	ja.	1001	V001	-	W		1001 1001	5		×	-	100	100.1					1.00
Northern Region																				Vant	= [.]	Ξ	•		
Rox Elder	52	ŝ	2	0 (1	8	857	37	8	175	1	267	ŧ	57]	193	119 121			ţ	8	3					
Cache	I	1	I	I	I	I	ı	۱	I	ł	ı							; ;	: •	ţı					
Davis .	ı	1	I	1	1	ł	1	ı	I	ı	ı	ł	ı	;	1		1	1				,			
Morgan	1	t	I	I	I	' 1	ı	ı	I	I	1	`ı		ı	1					• •					
Rich	5	32	5	13	2	8	2	39	828	136	I\$I	2			156 430			5	• E	1 8					
Summit	I	1	1	1	1	I	1	•	1	1	. 1						ξ I	R I	1	8					
Weher	1	ı	1	1	I	ı	ı	1	I	ı	;		ı	ı				. 1		l					
REGIONAL TOTALS	ñ	×	8	친	8	Ę	37	8	176	11	8	4	2						, <u>:</u>	•	1	1	1	1	
Central Region	1																	5		8	5	R	2	8	2
Juah	I	I	1	'	ı	I	ı	ı	I	1	t	ı	ı		י ו			,		I					
Salt Lake	I	1	ı	ı	I	I	I	ı	ı	I	ı	ı	ı	ı	י ו					1					
Sanpete	ł	ı	I	I	I	1	ı	ı	ı	1	1	ı	,				. 1	I	r	1					
Tooele	33	\$	57	133	9 <u>7</u>	អ	2	7	121	8	ı	ı	1					I I	r	•					
(Tiah	1	ı	1	1	1	I	1	1	1	1	ı	ı	ı					1,	1	1					
Wasetch	I	ı	1	ı	I	I	ı	I	I	I	ı							,	ı	1					
REGIONAL TOTALS	E	Ş	5	UI.I	2	1	×	1	Ĩ									,	,	•					
Southern Restan						4		2					,					,	, 	•	2	×	\$	12	8
Beaver	I	ı	I	ı	I	I	.,	I	I	I	l														
Garfield	1					1	ł	I	I	I	ı	ı		,	1	•	_	,	1	1					
		i :)	I	I	I	ı	ı	I	1	ı		ı	,	•	_			ł	I					
	I	1	I	1	I	I	ı	ł	ı	1	ı	1			•	•		I	ı	ı					
Kune Maria	1	Ļ	I	ı	ı	ı	I	ı	ı	ı	ı	1			1	•	,	,	ı	ı					
Millerd	1	I	I	I	I	I	ŀ	ı	ı	ı	ı				•			ı	ı	ı					
Puble	ł	I	I	I	ı	ı	ı	ı	I	I	ı		ı				1	1	,	ı					
Sevler	ı	ı	ı	ł	ı	I	I	ı	ı	ı	ı				1		,	ı	ı	ı					
Washington	1	ı	I	ł	I	ı	ı	1	1	ı	ı			1.				1	· 1	I					
Wayne .	SE	\$	8	82	ži J	<u>8</u>	R	8	ž	5	366		58 22		56 333		5	荔	187	125					
RECIONAL TOTALS	395	ş	8	ଷ୍ପ	28 2	9 <u>9</u>	R	3	18	۶	366			213 15	156 333			28	187	125	EQ.	\$	8	204	F
Northeastern Region																									
Dapgel	ł	1	1	I	ŀ	1	•	ı	1	ı	ı	1	ı	1				1	,	;					
Duchesne	ı	ı	ı	ı	ı	I	I	ı	ı	I	ı	ı	I	•	1	t		1	1	L					
- Helen	F	ŧ	ឝ	R	Ē	R	25	3	¥	æ	1			1	1			1	1	,					
REGIONAL TOTALS	F	\$	5	321	Ë.	242	36	3	8	æ	1							.	,		151	Ş	5	210	2
Southeastern Region																									
Carbon	133	2	F	5	81	8	5	Ľ	I	6	F	ı	-	28	1	1		,	ı						
Emery	I	ı	1	ı	I	I	ı	ł	ı	ı	1			•				I	I	1					
Grand	t	ı	I	ı	ı	ł	ı	ı	ı	ı	ı	1	ı	•	1				1	1					
San Juan	'	ı	1	'	t	1		ı	T	4	1			•				1	ı	1					
REGIONAL TOTALS	133	ล	2	8	æ	8	ន	7	z	5	5	1			61 -	1			,	1	8	ล	F	5	1
STATE TOTALS	ş	Ē	\$	3	ž	2	35	8	133	8	942		58 20	205 134				85,	136	I.	515	2	J	108	Ĩ
																									1

Table 14. Sex and age composition of harvesied tage groute from \$988-91.

FOREST GROUSE

SUMMARY

Judging from harvest statistics for the fall of 1990, the 1991 breeding populations of blue and ruffed grouse were below average. However, blue grouse observed per 100 hours of effort during summer brood counts in 1991 increased 20 percent.

Production of blue and ruffed grouse decreased from 1990. | Blue grouse observed per 100 hours of effort increased 20 percent from the previous year. A total of 51 forest grouse broods were observed during 1991 compared with 59 in 1990, 46 in 1989, 86 in 1988, 134 in 1987, 53 in 1986, and 78 in 1985.

Harvest statistics indicated decreased density of forest grouse. Total harvest decreased from 38,922 in 1990 to 34,897 in 1991, a 10 percent decrease. Total hunters and days afield also declined. Field bag check samples indicated decreased forest grouse numbers.

These data indicate that hunters are discovering forest grouse hunting and are using the resources more than 10 years ago. This is what we hoped to accomplish in the five-year strategic plan.





Brood Counts

Ruffed Grouse

Results of the annual random brood survey for 1991 are shown in Table 1 of this section. Long-term trends of young per 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 1991 compared to 1990 and the previous 10-year average (1981-1990) follow:

	<u>1991</u>	<u>Percent</u> 1990	<u>change from</u> <u>Average</u>
Total ruffed grouse observed Young per 100 adults Mean brood size Ruffed grouse observed	55 323 4.00 23	-25 -9 -16 -23	-49 +3 -7 -37
per 100 hours Total hours effort	236	←2	-30

Harvest statistics for 1990 indicated a below average breeding population for 1991.

Effort on brood surveys decreased by 2 percent and was 30 percent below average.

Grouse observed per 100 hours was 37 percent below average, while mean brood size was 7 percent above average indicating decreased production.

Blue Grouse

Results of the annual random brood survey for 1991 are shown in Table 5 of this section. Long-term trends of young per adult ratios, mean brood size and blue grouse observed per 100 hours are found in Tables 6-8. Survey results for 1991 compared to 1990 and the previous 10-year average (1981-90) follow:

	<u>1991</u>	Percent 1990	<u>change from</u> <u>Average</u>
Total blue grouse observed	264	-21	-39
Young per 100 adults	238	-13	-3
Mean brood size	3.88	-7	+3
Blue grouse observed per 100 hours	112	+20	+5
Total hours effort (forest grouse)	236	-34	-44

Harvest statistics for 1990 indicated the blue grouse breeding population for 1991 was again above average.

The 1991 summer surveys on blue grouse indicated that production decreased (13 percent) from 1990 and was about average.

Total observations decreased 21 percent, with a 34 percent decrease in effort. The number of grouse observed per 100 hours of effort increased from 1990 and was still 5 percent above average.

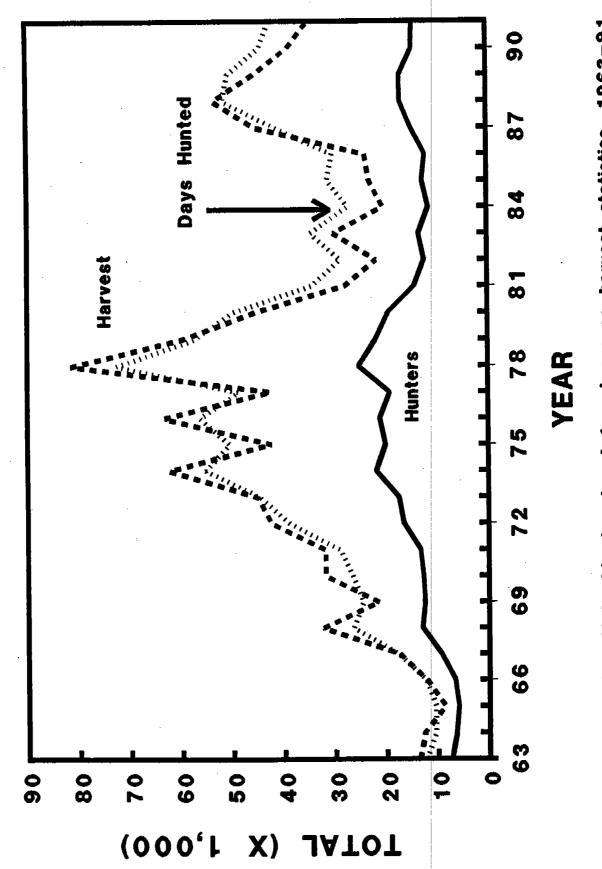
<u>Harvest</u>

Hunter Questionnaire

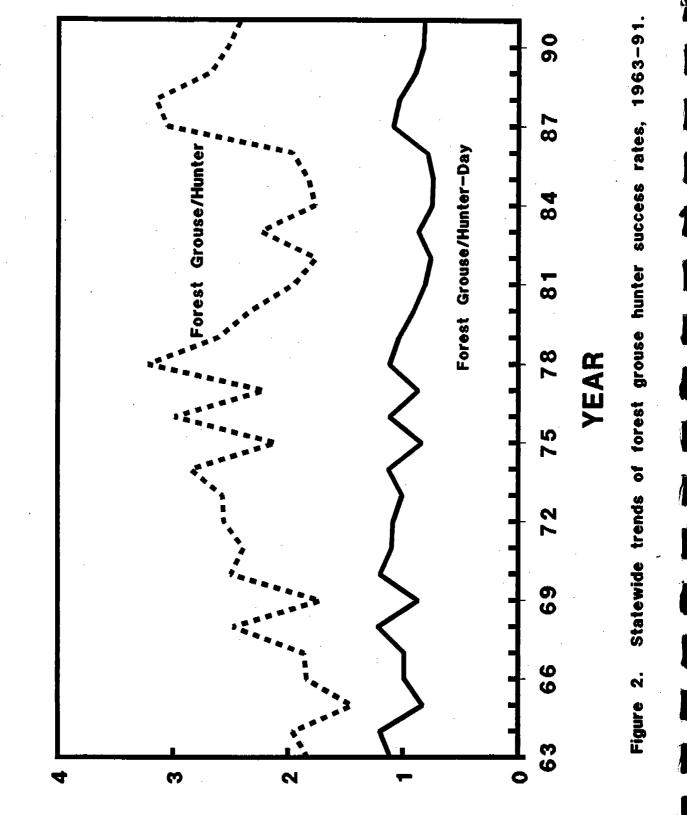
Results of the 1991 blue grouse, ruffed grouse and combined hunter questionnaire are shown in Table 10, 11 and 12 respectively. Long-term trends of forest grouse bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 13-15 and total statewide harvest statistics in Table 16 and Figures 1 and 2. Forest grouse season length, bag limits and harvest statistics, 1963-1991 are listed in Table 17. Harvest statistics for 1991 compared to 1990 and the previous 28-year average follow: Percent change from

	<u>1991</u>	<u>1990</u>	Average
Forest grouse hunters	14,421	-1	-2
Forest grouse harvested	34,897	-10	-2
Hunter-days afield	42,517	-4	+17
Forest grouse per hunter-day	0.82	-1	-16
Forest grouse per hunter	2.42	-4	+5
Percent ruffed grouse	34.60	+22	-11
Percent blue grouse	61.07	-9	+11
Percent unidentified	4.34	-6	-31

Total harvest decreased 10 percent from 1990 and was 2 percent below average. Overall, hunter success (grouse per hunter-day) was 16 percent below average, but the number of grouse harvested per hunter was 15 percent above average. Hunter pressure decreased slightly, but was still 17 percent above the 27-year average.



Statewide trends of forest grouse harvest statistics, 1963-91. Figure 1.



FOREST GROUSE PER HUNTER AND PER DAY

Field Bag Checks

A summary of field bag check data for 1991 is found in Table 18. Hunter success trends determined via this method are shown in Table 19. Sex and age composition of the harvest as determined from wings is shown in Table 20 and 21. Results of the 1991 survey compared to 1990 and the previous 10-year (1981-90) average follow:

	<u>1991</u>	<u>Percent</u> 1990	<u>change from</u> <u>Average</u>
Total hunters checked	521	+186	-26
Total hours hunted	797	+20	-72
Forest grouse per hunter (complete hunts)	0.50	-56	-25
Forest grouse bagged per 100 hours	32	-3	+94
Average hours per hunter-day (complete hunts)	1.53	-56	-62
Hours hunted per grouse bagged (complete hunts)	3.09	+1	-53

There was a substantial increase in numbers of hunters checked in 1991. Hunter success (grouse per hunter) decreased 56 percent from 1990 and was 25 percent below average.

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Table 4. Trend of ruffed grouse observed per 100 hours, 1981-91.

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Sevier 3.44	4.04	06.4	1017		1 50	5 11	1	1	I	1	
Washington 5.00	1	3.67	1	1 5		3 50	3.75	1		4.57	
Wavne	1	4.00	1	0.00		2	1.5		100	4.57	3.44
RECIONAL TOTALS 4.15	5 3.70	3.58	2.95	3.21	3.53	4.12	11.7				
Northeastern Region					ļ		2.20	1 90	3.50	1	
Depett 4.45	5 4.91	4.33	ı	:	51.6	4.71			6 00 X	1	
Duchasna 3.60	0 3.88	3.40	ł	1	3.25	2.50	007				
	5 2.71	5.60	I	1	4.00	5.00	3.50	07.7			3.06
WAT TOTALS		4.63	1	1	3.56	4.52	3.00	3.29	4.33	:	
	ا ج	7.00	3.00	3.00	5.00	ı	1	1	:	1	
	2	I	۱	;	1	4.00	4.00	I	1	1	
Emery		l	1	100	3.25	ļ	2.78	3.00	1	2.00	
Grand 2.50		1		0012	1	3.00	3.00	3.00	1	5.00	
		4.00	<u>c</u> , 1	00.0	1 60	150	2.93	3.00	1	3.50	3.29
REGIONAL TOTALS 2.60	_	5.50	2.17	9.00	00.0			3.61	4.19	3.88	3.75
STATE TOTALS 3.97	97 4.06		3.18	3.56	5.44	4.00	44.0	-			

Region and		Region and				Year						Average
County	1981	1982	1983	1984	1985	1986	1987	1988	1989	· 1990	1661	1981-90
Northern Region							-					
Box Elder	230	I	64	38	t	20	÷	1	ł	200	21	
Cache	74	I	14	:	11	ŧ	11	26	114	801	165	
Davis	۲	1	33	110	94	50	232	300	120	426	%	
Morgan	ŧ	ı	च	200	23	4	59	1	17		1	
Rich	I	1	ı	ł	ł	53	•	¢	ł	:	175	
Summit	293	ı	1	12	38	I	906	ł	21	101	55	
Weber	174	11	4	ł	167	100	267	26	ł	ł	6S	
REGIONAL TOTALS	121	20	15	58	28	27	109	66	79	133	63	88
Central Region												
Juab	73	I	29	125	Ē	156	¢	1	•	800	ł	•
Salt Lake	36	48	14	ł	I	ı	400	ł	ı	:	-1	
Sanpete	1	281	1	ı	I	I	1,400	;	14	4	1	
Tonele	271	I	344		536	444	206	1,000	1,000	233	ł	
Utah	23	36	32	ł	165	ı	229	367	367	113	318	
Wasatch	1	5	20	I	1	I	¢	:	1	1	I	
REGIONAL TOTALS	55	127	8	11	183	254	194	683	22	75	180	175
Southern Region												
Beaver	46	220	133	233	æ	137	175	164	ı	ı	I	
Garfield	I	1	1	ı	122	141	195		ł	100	1	
Iron	I	ı	ł	I	ł		1,200		ı	;	1	
Kane	I	I	122	I	213	257	383	127	ł	1	1	
Millard	I	248	15	107	133	200	525	100	I	ı	1	
Pinte	557	225	1	200	67	266	;	ł	1	ł	I	
Sevier	20	48	9 5	11	1 55	ł	275	738	1	ı	I	
Washington	800	ı	117	I	I	333	950	1	1	ł	t	
Wayne	I	ı	.	I	700	1	450	475	1	1	2,250	
REGIONAL TOTALS	41	74	8	122	140	178	309	247	ı	2010	2,250	155
Northeastern Region										-		
Daggett	736	389	632	ı	1	300	1,255	230	265	286	ł	
Duchesne	75	126	51	ł	1	5	64	121	ı	175	1	
Uintah	308	54	239	ł	1	600	- 22	37	48	320	1	
REGIONAL TOTALS	228	138	232 .	:	1	126	286	120	95	46	1	159
Southeastern Region												
Carbon	17	ł	8	23	33	8	1	r	1	1	1	
Emery	;	1	:	;	ł	:	200	1	I	ł	t	
Grand	1	t	ı	50	360	120	300	1	8	;	300	
San Juan	218	:	100	13	. 2 3	1	400	1	400	ı	600	
REGIONAL TOTALS	128	1	ŝ	9	123	8	400	1	88	I	450	140

Table 9. Summary of effort Region and	Vehicle		Hours of	Effort	
County	Miles	Vehicle	Horse	Walk	Total
Northern Region					
Box Elder			24		24
Cache	•	17			. 17
Davis		13		8	21
Morgan		3	22	1	26
Rich	·		8		8
Summit		12	39	-	51
Weber		10	10	11	31
REGIONAL TOTALS		55	103	20	178
Central Region					
Juab				-	
Salt Lake	19	2			2
Sanpete	228	15			15
Tooele					
Utah	118	8	9		17
Wasatch	171	18	2		20
REGIONAL TOTALS	536	43	11		54
Southern Region					<u> </u>
Beaver					
Garfield					
Iron					
Kane		••			
Millard					
Piute					
Sevier	••				 •••
Washington			- <u>-</u>		
Wayne	30	2			2
REGIONAL TOTALS	30	2			2
Northeastern Region					
Daggett					
Duchesne					
Uintah					
REGIONAL TOTALS		**			
Southeastern Region				·	
Carbon			••		
Emery					
Grand		**		1	1
San Juan			••	1	1
REGIONAL TOTALS				2	2
STATE TOTALS	566	100	114	22	236

Table 9. Summary of effort expended on forest grouse brood counts, 1991.

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Table 10. Summary of blue grouse hunter success and distribution of harvest and hunting pressure by region and county, 1991.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	<pre>% OF PRESSURE</pre>	<pre>% OF HARVES!</pre>
NORTHERN REGION				*******		
BOX ELDER	23	1,078	1,322	1.23	4.75	6.20
CACHE	72	3,879				
DAVIS	13		3,740	0.96	17.08	17.55
		521	626	1.20	2.30	2.94
Morgan	9	452	434	0.96	1.99	2.04
RICH	17	1,113	748	0.67	4.90	3.51
SUMMIT	31	2,365	1,026	0.43	10.41	4.82
WEBER	21	1,217	991	0.81	5.36	4.65
REGIONAL TOTALS	186	10,629	8,889	0.84	46.79	41.72
CENTRAL REGION			* * * * * *			
JUAB	5	156	173	1.11	0.69	0.82
SALT LAKE	7	243	156	0.64	1.07	
SANPETE	19	800				0.73
			1,113	1.39	3.52	5.22
TOOELE	23	974	1,200	1.23	4.29	5.63
UTAH	22	1,182	1,739	1.47	5.21	8.16
WASATCH	16	835	504	0.60	3.68	2.37
REGIONAL TOTALS	92	4,192	4,888	1.17	18.45	22.94
SOUTHERN REGION				*		
BEAVER	12	661	626	0.95	2.91	2.94
GARFIELD	10	382	330	0.86	1.68	1.55
IRON	6	748	469			
KANE	4			0.63	3.29	2.20
	-	434	104	0.24	1.91	0.49
MILLARD	12	626	661	1.06	2.76	3.10
PIUTE	4	191	139	0.73	0.84	0.65
SEVIER	45	2,539	2,365	0.93	11.18	11.10
WASHINGTON	2	69	173	2.50	0.31	0.82
WAYNE	6	156	173	1.11	0.69	0.82
REGIONAL TOTALS	101	5,810	5,044	0.87	25.58	23.67
NORTHEASTERN REGI	 [ON					
DAGGETT	8	243	365	1.50	1.07	1.71
DUCHESNE	· 9	295	469	1.59	1.30	2.20
UINTAH	23	1,235	1,287	1.04	5.44	6.04
REGIONAL TOTALS	40	1,774	2,122	1.20	7.81	9.96
SOUTHEASTERN REGI						
CARBON	4	86	173	2.00	0.38	0 93
EMERY	i	17	52	3.00		0.82
GRAND	2	69	52		0.08	0.24
SAN JUAN	3	139	52 86	0.75 0.63	0.31 0.61	0.24 0.41
REGIONAL TOTALS	10	313	365	1.17	1.38	1.71
UNKNOWN	0		0	0.00		
					0.00	0.00
STATE TOTALS	429	22,719	21,310	0.94	100.00	100.00

*Total hunter trips from questionnaire returns.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF HARVESI
NORTHERN REGION			· · · · · · · · · · · · · · · · · · ·			
BOX ELDER	15	904	591	0.65	5.78	4.90
CACHE	49	2,974	2,070	0.70	19.02	17.15
DAVIS	6	487	382	0.79	3.11	3.17
MORGAN	12	574	574	1.00	3.67	4.76
RICH	12	556	469	0.84	3.56	3.89
SUMMIT	24	1,530	1,235		9.79	10.23
WEBER	21	1,409	817	0.58	9.01	6.77
REGIONAL TOTALS	139	8,437	6,140	0.73	53.95	50.87
CENTRAL REGION						
JUAB	3	52	69	1.33	0.33	0.58
SALT LAKE	4	191	121	0.64	1.22	1.01
SANPETE	11	556	347	0.63	3.56	2.88
TOOELE	3	104	156	1.50	0.67	1.30
UTAH	24	1,078	695	0.65	6.90	5.76
WASATCH	28	1,287	1,061	0.82	8.23	8.79
REGIONAL TOTALS	73	3,270	2,452	0.75	20.91	20.32
SOUTHERN REGION						
BEAVER	6	365	208	0.57	2.34	1.73
GARFIELD	1	17	17	1.00	0.11	0.14
IRON	1	86	86	1.00	0.56	0.72
KANE	1	347	52	0.15	2.22	0.43
MILLARD	4	139	121	0.88	0.89	1.01
PIUTE	4	347	487	1.40	2.22	4.03
SEVIER	22	1,391	1,148	0.83	8.90	9.51
WASHINGTON	ō	Ō	0	0.00	0.00	0.00
WAYNE	1	52	69	1.33	0.33	0.58
REGIONAL TOTALS	40	2,748	2,191	0.80	17.58	18.16
NORTHEASTERN REGI						
DAGGETT	5	173	191	1.10	1.11	1.59
DUCHESNE	8	330	295	0.89	2.11	2.45
UINTAH	11	347	434	1.25	2.22	3.60
REGIONAL TOTALS	24	852	922	1.08	5.45	7.64
SOUTHEASTERN REGI						
CARBON	3	69	52	0.75	0.44	0.43
EMERY	3	104 .	69	0.67	0.67	0.58
GRAND	2	104	208	2.00	0.67	1.73
SAN JUAN	2	52	34	0.67	0.33	0.29
REGIONAL TOTALS	10	330	365	1.11	2.11	3.03
UNKNOWN	0	0	0	0.00	0.00	0.00
STATE TOTALS	286	15,639	12,073	0.77	100.00	100.00

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Table 11. Summary of ruffed grouse hunter success and distribution of harvest and hunting pressure by region and county, 1991.

*Total hunter trips from questionnaire returns.

Table 12.	Summary of blue and ruffed grouse hunter success and distribution of
	harvest and hunting pressure by region and county, 1991.

narve	st and nur	ting pressure	by regio.	n and councy,		
REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF Harvest
NORTHERN REGION						
BOX ELDER	51	2,800	1,931	0.69	6.59	5.53
	152	6,610	6,088	0.92	15.55	17.45
CACHE	30	1,200	1,008	0.84	2.82	2.89
DAVIS				0.94	2.86	3.29
MORGAN	28	1,217	1,148			3.74
RICH	48	2,104	1,304	0.62	4.95	6.83
SUMMIT	53	3,287	2,383	0.72	7.73	
WEBER	69	3,444	1,757	0.51	8.10	5.03
REGIONAL TOTALS	431	20,667	15,662	0.76	48.61	44.77
CENTRAL REGION						
JUAB	14	400	260	0.65	0.94	0.75
SALT LAKE	13	504	278	0.55	1.19	0.80
SANPETE	44	1,548	1,513	0.98	3.64	4.34
TOOELE	33	1,374	1,409	1.03	3.23	4.04
	68	2,696	2,609	0.97	6.34	7.48
UTAH						
WASATCH	52	2,035	1,548	0.76	4.79	4.44
REGIONAL TOTALS	224	8,559	7,619	0.89	20.13	21.83
SOUTHERN REGION						
BEAVER	20	956	904	0.95	2.25	2.59
GARFIELD	12	417	347	0.83	0.98	1.00
IRON	17	1,200	678	0.57	2.82	1.94
KANÉ	-, 7	539	330	0.61	1.27	0.95
	19	800	782	0.98	1.88	2.24
MILLARD						2.04
PIUTE	11	713	713	1.00	1.68	
SEVIER	78	3,792	3,583	0.94	8.92	10.27
WASHINGTON	4	104	191	1.83	0.25	0.55
WAYNE	12	382	226	0.59	0.90	0.65
REGIONAL TOTALS	180	8,907	7,758	0.87	20.95	22.23
NORTHEASTERN REG	ION					
DAGGETT	19	591	574	0.97	1.39	1.65
DUCHESNE	24	1,008	782	0.78	2.37	2.24
UINTAH	42	1,739	1,739	1.00	4.09	4.99
REGIONAL TOTALS	85	3,340	3,096	0.93	7.86	8.87
SOUTHEASTERN REG	TON					
CARBON	11	382	243	0.64	0.90	0.70
EMERY	5	156	121	0.78	0.37	0.35
GRAND	3	138	260	2.14	0.29	0.35
SAN JUAN	8	382	173	0.45	0.29	0.75
REGIONAL TOTALS	27	1,043	800	0.77	2.45	2.29
UNKNOWN	0		0	0.00	0.00	0.00
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STATE TOTALS	947	42,517	34,897	0.82	100.00	100.00

*Total hunter trips from questionnaire returns.

Region and				<del></del>	Year			
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region	1704		2000	1/0/		1907	<u> </u>	1221
Box Elder	0.60	0.45	0.60	0.68	1.03	0.99	0.97	0.69
Cache	0.76	0.90	0.96	1.07	1.24	0.84	0.75	0.92
Davis	0.66	0.50	0.50	0.71	0.98	0.78	1.02	0.84
Morgan	0.44	0.88	0.64	1.00	0.99	1.23	0.94	0.94
Rich	0.86	0.75	0.39	1.56	0.92	0.42	0.52	0.62
Summit	0.54	0.70	0.63	1.25	0.86	0.89	0.49	0.72
Weber	0.60	0.60	0.85	1.41	0.88	1.00	0.73	0.51
REGIONAL TOTALS	0.66	0.71	0.76	1.12	1.07	0.88	0.74	0.76
Central Region	0.00			<u> </u>		0.00		0.70
Juab	0.43	1.00	0.14	1.14	0.86	0.71	0.88	0.65
Salt Lake	1.25	0.65	0.75	1.05	0.87	0.77	0.88	0.65
Sanpete	0.99	0.72	0.67	1.12	0.84	0.65	0.82	0.98
Tooele	0.40	1.00	0.89	1.12	1.33	1.75	1.03	1.03
Utah	0.40	0.86	0.59	1.04	1.08	0.99	0.91	0.97
Wasatch	0.84	0.59	0.59	.94	0.74	0.78	0.91	0.97
REGIONAL TOTALS	0.78	0.75	0.62	1.07	0.97	0.90	0.90	0.89
Southern Region	0.70	<u> </u>	0.02		. 0.97	0.90	0.90	0.03
Beaver	1.05	0.59	1.00	0.91	1.31	0.86	0.85	0.95
Garfield	0.67	0.59	0.27	0.57	1.00	1.27	0.85	0.95
Iron	0.59	0.94	1.21	0.57	1.00	0.79	0.74	0.83
Kane	0.59	0.78	0.14	2.33				
	0.67	0.78	1.14	2.33	1.50 1.36	1.25 1.26	0.81	0.61
Millard							1.49	
Piute	1.27	0.94	1.42	1.19	1.34	1.00	1.25	1.00
Sevier	0.73	0.77	0.88	1.00	1.18	1.23	1.02	0.94
Washington	0.00	2.14	2.01	0.17	0.10	0.00	0.00	1.83
Wayne	0.34	1.09	0.33	0.90	0.25	0.76	0.86	0.59
REGIONAL TOTALS	0.82	0.82	0.98	0.93	1.16	1.13	0.99	0.87
Northeastern Reg					a	<b>•</b> ••		
Daggett	0.47	0.94	1.19	1.10	0.65	0.42	0.81	0.97
Duchesne	0.67	0.60	1.07	1.29	0.98	0.92	0.69	0.78
Uintah	1.23	0.94	1.19	1.63	0.91	0.67	1.09	1.00
REGIONAL TOTALS	0.96	0.83	1.16	1.43	0.88	0.69	0.93	0.93
Southeastern Reg		<b>-</b>						
Carbon	0.00	0.71	0.83	0.92	0.48	0.37	0.47	0.64
Emery	0.90	0.35	0.65	0.96	1.06	0.60	0.81	0.78
Grand	1.60	0.64	1.29	1.91	0.81	1.14	1.12	2.14
San Juan	0.67	0.20	0.67	1.00	0.67	1.00	0.83	0.45
REGIONAL TOTALS	0.86	0.52	0.81	1,14	0.79	0.57	0.69	0.77
Unknown Counties	1.00	1.00	0.00	0.55	0.70	0.76	0.00	0.00
STATE TOTALS	0.75	0.74	0.79	1.09	1.04	0.90	0.83	0.82

Table 13. Summary of forest grouse bagged per hunter-day by region and county, 1984-91.

Region and County Northern Region	1984	1985					_	
		1982	1986	1987	1988	1989	1990_	1991
NOT CHETH VEGTON						·		
Box Elder	3.38	2.23	2.59	1.62	3.83	5.02	6.51	5.53
Cache	15.72	17.35	21.23	14.98	21.10	15.18	15.47	17.45
Davis	4.48	5.66	2.50	1.83	3.14	1.96	3.28	2.89
Morgan	2.88	3.90	3.02	1.13	2.64	6.93	3.28	3.29
Rich	3.78	4.26	2.24	4.05	4.55	2.60	2.89	3.74
Summit	2.49	3.52	2.93	4.65	3.55	4.61	3.45	6.83
Weber	7.86	4.91	10.44	6.65	9.53	10.35	8.07	5.03
REGIONAL TOTALS	· · · · · · · · · · · · · · · · · · ·	41.85	44.96	34.93	48.37	46.65	42.96	44.77
<u>Central Region</u>	77.000	41100						
Juab	1.19	1.02	0.26	1.29	1.12	1.32	0.78	0.75
Salt Lake	4.48	2.41	1.81	1.18	1.40	1.50	0.72	0.80
	6.97	5.84	4.57	6.43	4.70	4.56	5.40	4.34
Sanpete				3.94	4.17	5.02	6.68	4.04
Tooele	1.00	2.87	4.74					
Utah	13.34	9.65	8.02	10.22	9.47	7.62	8.74	7.48
Wasatch	2.58	5.01	3.02	3.94	3.05	5.47	2.89	4.44
REGIONAL TOTALS		26.80	22.43	27.04	23.94	25.49	25.21	21.83
Southern Region		⁻						
Beaver	2.09	2.13	0.86	1.56	0.65	0.82	1.61	2.59
Garfield	1.39	1.39	0.26	0.64	0.74	1.73	1.45	1.00
Iron	1.59	2.87	3.53	1.40	1.77	1.41	1.39	1.94
Kane	0.59	0.65	0.08	0.37	0.18	0.23	0.72	0.95
Millard	0.70	0.65	3.45	1.13	1.77	3.51	2.89	2.24
Piute	5.57	1.48	2.33	2.05	2.80	0.96	3.34	2.04
Sevier	4.38	4.45	6.56	11.35	10.84	9.90	7.90	10.27
Washington	0.00	1.39	0.52	0.05	0.03	0.00	0.00	0.55
Wayne	0.40	1.11	0.17	0.48	0.09	0.73	1.00	0.65
REGIONAL TOTALS	16.72	16.14	17.77	19.09	18.92	19.92	20.31	22.23
<u>Northeastern Re</u>	gion							
Daggett	0.89	1.48	3.19	1.73	0.93	0.46	1.39	1.65
Duchesne	1.59	2.50	2.67	4.75	1.55	1.60	1.39	2.24
Uintah	7.56	6.21	6.03	8.27	3.64	4.33	4.90	4.99
REGIONAL TOTALS	10.05	10.20	11.91	14.76	6.14	6.38	7.68	8.87
Southeastern Re	gion							
Carbon	0.00	2.23	0.86	0.64	0.43	0.50	1.34	0.70
Emery	1.79	1.11	0.95	1.29	1.15	0.41	1.17	0.35
Grand	0.79	1.48	0.77	1.13	0.68	0.36	1.06	0.75
San Juan	0.40	0.18	0.34	0.43	0.12	0.18	0.28	0.50
REGIONAL TOTALS		5.01	2.93	3.51	2.40	1.46	3.84	2.29
Unknown. Countie		0.00	0.00	0.64	0.21	0.73	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 14. Percentage distribution of forest grouse harvest by region and county, 1984-91.

Region and					Year			
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region								
Box Elder	4.25	3.63	4.65	2.60	3.84	4.55	5.60	6.59
Cache	15.35	14.18	14.69	15.26	17.65	16.22	17.22	15.55
Davis	5.07	8.29	3.90	2.84	3.32	2.25	2.69	2.82
	4.91	3.29	3.15	1.24	2.77	5.08	2.92	2.86
Morgan	3.28	4.18	4.05	2.84	5.13	5.53	4.63	4.95
Rich		3.70	4.50	4.08	4.26	4.63	5.83	7.73
Summit	3.42			4.08 5.14	4.20 9.94	4.83 9.34	9.21	8.10
Weber	9.69	6.02	9.00					
REGIONAL TOTALS	45.97	43.29	43.93	34.02	46.93	47.60	48.10	48.61
<u>Central Region</u>		- <u>-</u>						·~ ~ ~
Juab	2.08	0.75	1.50	1.24	1.35	1.68	0.74	0.94
Salt Lake	2.68	2.74	2.40	1.24	1.67	1.76	0.74	1.19
Sanpete	5.29	5.96	4.65	6.27	5.77	6.31	5.51	3.64
Tooele	1.86	2.12	3.90	3.49	3.26	2.58	5.42	3.23
Utah	11.84	8.29	10.49	10.76	9.10	6.88	8.01	6.34
Wasatch	4.54	6.23	4.50	4.61	4.29	6.31	2.92	4.79
REGIONAL TOTALS		26.09	27.44	27.63	25.46	25.52	23.33	20.13
Southern Region								
Beaver	1.49	2.67	1.05	1.89	0.51	0.86	1.57	2.25
Garfield	1.56	1.30	1.05	1.24	0.77	1.23	1.62	0.98
Iron	2.01	2.26	2.25	2.07	1.71	1.60	1.67	2.82
	0.67	0.61	0.75	0.17	0.12	0.16	0.74	1.27
Kane		0.96	1.35	1.65	1.35	2.50	1.62	1.88
Millard	0.82					0.86	2.22	1.68
Piute	3.28	1.16	1.20	1.89				
Sevier	4.47	4.24	6.30	12.48	9.52	7.21	6.44	8.92
Washington	0.00	0.48	0.30	0.35	0.32	0.08	0.23	0.25
Wayne	0.89	0.75	0.75	0.59	0.38	0.86	0.97	0.90
REGIONAL TOTALS	15.20	14.45	15.00	22.36	16.88	15.36	17,08	20.95
Northeastern Re	gion							
Daggett	1.41	1.16	2.10	1.71	1.48	0.98	1.44	1.39
Duchesne	1.79	3.08	3.45	4.02	1.64	1.56	1.67	2.37
Uintah	4.62	4.86	4.35	5.56	4.13	5.82	3.75	4.09
REGIONAL TOTALS	7,82	9.10	9.90	11.30	7.26	8.36	6.85	7.86
Southeastern Re								
Carbon	0.30	2.33	0.45	0.76	0.93	1.23	2.36	0.90
Emery	1.49	2.33	1.80	1.47	1.12	0.61	1.20	0.37
Grand	0.37	1.71	0.75	0.65	0.87	0.29	0.79	0.29
San Juan	0.44	0.68	0.75	0.47	0.19	0.16	0.28	0.90
		7.05	3.75	3.37	3.12	2,29	4.63	2.45
REGIONAL TOTALS	2.01	/.05	3.75	16.5		<u> </u>		<u> </u>
Unknown Countie	es 0.07	0.00	0.00	1.30	0.32	0.86	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 15. Percentage distribution of forest grouse hunting pressure by region and county, 1984-91.

Table 16. Statewide summary of forest grouse harvest statistics, 1963-91	atewide sum	nary of for	rest grouse	harvest st	atistics, 15	63-91.									
	Total			<b>Total Harvest</b>	vest				Hunter-Days	Crouse	Grouse/Hunter-Pay	RV AV	Crouse/Hunter	HUDGEL	
Year	Hunters	Ruffed	Percent	Blue	Percent	Unknown	Percent	Total	Afield	Ruffed	Blue	Total	Ruffed	Blue	Total
1963	7.425	5.470	40.20	7.372		766	5.63	13,608	12,313	0.44	0.66	1.11	0.74	66.0	1.83
1964	6.487	5.354	42.19	6.685	52.68	652	5.14	12,691	10,566	0.51	0.63	1.20	0.82	1.03	J.96
1965	6,005	3.25	37.20	4,924	56.80	520	6.00	8,669	10,504	0.31	0.47	0.83	0.54	0.82	1.44
1966	6.683	6.966	56.54	4,659	37.81	696	5.65	12,321	12,387	0.56	0.38	0.99	1.04	0.68	1.84
1967	9.420	8.476	48.36	6.773	38.65	2,277	12.99	17,526	17,773	0.48	0.38	66.0	0.87	0.69	1.86
1968	13.061	17.048	<b>52.59</b>	12,604	38.88	2,762	8.52	32,414	26,537	0.64	0.47	1.22	1.30	0.96	2.48
1969	12.523	9.490	44.14	10.419	48.46	1,589	7.39	21,498	24.572	0.38	0.42	0.87	0.76	0.83	1.72
1970	12.775	15.590	48.87	13,515	42.37	2,793	8.76	31,898	26,619	0.59	0.51	1.20	1.22	1.06	2.50
171	13.363	15.759	49.40	13,749	43.10	2,393	7.50	31,901	29,100	0.54	0.47	1.10	1.18	1.03	2.39
1972	16.640	20.648	48.56	19,221	45.21	2,649	6.23	42,518	38,940	0.53	0.49	1.09	1.24	1.16	2.56
1973	17.588	7.153	15.81	36.846	81.46	1,233	2.73	45,232	44,738	0.16	0.82	1.01	0.41	2.09	2.57
1974	21.920	24.561	39.34	32,236	51.63	5,642	9.04	62,439	55,258	0.44	0.58	1.13	1.12	1.47	2.85
1975	20.102	15.750	37.09	23,138	54.49	3,573	8.41	42,461	50,579	0.31	0.45	0.84	0.78	1.15	2.11
1976	21.186	23.551	37.13	35.660	56.21	4,225	6.66	63,436	56,422	0.42	0.63	1.12	1.11	1.68	2.99
1977	19.188	15.766	37.12	23,455	55.22	3,256	7.67	42,477	48,746	0.37	0.48	0.87	0.82	1.12	2.21
1978	25,318	30,340	37.20	46,651	57.20	4,567	5.60	81,558	72,732	0.42	0.64	1.12	1.20	1.84	3.22
1979	21.993	23.156	38.69	33.070	55.25	3,625	6.06	59,851	57,404	0.40	9.58	1.04	1.05	1.50	2.61
1980	19.511	15.457	33.96	27,588	60.60	2,477	5.44	45,522	49,899	0.31	0.55	16.0	0.79	1.41	2.33
1981	14.329	8.557	30.68	17,852	64.00	1,485	5.32	27,894	34,305	0.25	0.52	0.81	0.60	1.25	1.95
1982	12,384	7.509	34,48	12,138	55.74	2,131	9.79	21,778	28,767	0.26	0.42	0.76	0.60	0.98	1.76
1983	13.414	11.366	37.78	16,955	56.35	1,767	5.87	30,088	34,530	0.33	0.49	0.87	0.84	1.26	2.24
1984	11.511	6.780	33.24	12,647	62.01	969	4.75	20,396	27,244	0.25	0.46	0.75	0.59	1.10	1.77
1985	12.646	8.701	37.67	13,416	58.09	086	4.24	23,097	31,290	0.28	0.43	0.74	0.69	1.06	1.83
1986	12,117	8,819	36.95	14,156	16.92	894	3.75	23,869	30,312	0.29	0.47	0.79	0.73	1.17	1.97
1987	14,831	15,811	34.88	28,068	61.92	1,447	3.19	45,326	41,428	0.38	0.68	1.09	1.07	1.89	3.06
1988	16.947	19.100	35.66	31,556	58.91	2,906	5.43	53,562	51,726	0.37	0.61	1.04	1.13	1.86	3.16
1989	16.987	16.323	35.88	27,794	61.10	1,370	3.01	45,487	50,631	0.32	0.55	06.0	0.96	1.64	2.68
1990	14.591	11.010	28.29		67.10	1,797	4.62	38,922	44,452	0.25	0.59	0.83	0.75	1.79	2.53
1661	14,421	12,073	34.60	21,310	61.07	1,514	4.34	34,897	42,517	0.35	0.50	0.82	0.84	1.48	2.42
Totals															
(1963-91)	425,366	389,809	;	580,572	1	62,955	1	1,033,336	1,062,291	1	1	•	1	ı	,
Averages														2	
(1963-90)	14,677	13,491	38.92	19.974	54.81	2,194	6.26	35,659	36,421	0.39	0.53	0.97	0.89	1.27	05.2

	1 0 (3	Total	Totai				1			
	Ruffed	Blue	Forest	Total	Total				Aggregate	gate -
	Grouse	Grouse	Grouse	Hunters	llunter Days		Season Length		Bag Limits	imits
Year	Harvest	Harvest	Harvest	Afield	Afield	Open	Close	Days	Daily	Possession
1963	5,470	7,372	13,608	7,425	12,313	e.	e.	**6	4	œ
1964	5,354	6,685	12,691	6,487	10,566	9/26	10/16	21	4	00
1965	3,225	4,924	8,669	6,005	105,074	9125	10/22	28	4	*
1966	6,966	4,659	12,321	6,683	12,387	9/24	10/21	28	4	80
1967	8,476	6,773	17,526	9,420	17,773	9/23	10/31	39	4	60
1968	17,048	12,604	32,414	13,061	26,537	9/28	10/29	32	4	<b>cc</b>
1969	9,490	10,419	21,498	12,523	24,572	9127	11/02	37	4	œ
0261	15,590	13,515	31,898	12,775	26,619	9/26	11/06	42	4	œ
1971	15,759	13,749	31,901	13,363	29,100	9/25	11/30	67	4	œ
1972	20,648	19,221	42,518	16,640	38,940	6216	11/30	69	4	œ
1973	7,153	36,846	45,232	17,588	44,738	9/22	11/30	70	4	œ
1974	24,561	32,236	62,439	21,920	55,258	9/28	11/30	64	4	æ
1975	15,750	23,138	42,461	20,102	50,579	9/20	11/30	72	4	80
1976	23,551	35,660	63,436	21,186	56,422	9/18	11/30	74	4	<b>œ</b>
1977	15,766	23,455	42,477	19,188	48,746	9/17	11/30	75	4	œ
1978	30,340	46,651	81,558	25,318	72,732	9/16	11/30	76	4	<b>ec</b>
1979	23,156	33,070	59,851	21,993	57,404	9/15	11/30	11	4	90
1980	15,457	27,588	45,522	112,01	49,899	9/20	11/30	12	4	œ
1981	8,557	17,852	27,894	14,329	34,305	61/6	11/30	52	4	80
1982	7,509	12,138	21,778	12,384	28,767	9/18	06/11	74	4	90
1983	11,366	16,955	30,088	13,414	34,530	9/17	11/30	75	4	00
1984	6,780	12,647	20,396	11,511	27,244	9/15	11/30	7	4	œ
1985	8,701	13,416	23,097	12,646	31,290	9/14*	11/30	78	4	÷
1986	8,819	14,156	23,869	12,117	30,312	9/1 <b>3</b>	11/30	79	4	œ
1987	15,811	28,068	45,326	14,831	41,428	9/12	11/30	80	4	œ
1988	19,100	31,556	53,562	16,947	51,726	11/6	11/30	82	4	. œ
1989	16,323	27,794	45,487	16,987	50,631	60/6	11/30	82	4	œ
1990	11,010	26,115	38,922	14,591	44,452	80/6	11/30	82	4	œ
1991	12,073	21,310	34,897	14,421	42,517	9/14	11/30	77	4	80

125

In 1964, the entire state was opened to hunting without a stamp.

1991.
summary.
bag check
grouse field
Forest g
Table 18.

		ALL BUNIS					-	CUWITLE	CUMITERIE RUNIS	•	
Region and	Total	Total	Total	Total	Birds/	Complete	Total	Total	Total	Birds/	Birds/
County	Parties	Hunters	Hours	Birds	100 Hr	Hunts	Hunters	Hours	Birds	100 Hr	Hunter
Northern Region											
Box Elder	77	56	69	39	ES .	ı	69	335	8	æ	1.43
Cache	11	50	28	16	21 S	ı	191	1	44	1	0.23
Davis	:	:	1	1	1	1	ł	:	:	1	I
Morgan	1	ı	1	1	I	I	:	;	ı	1	ı
Rich	1	1	1	1	I	1	:	1	ł	1	ı
Suramit	1	1	:	;	1	ł	:	I	ł	I	1
Wahar	i			1		1	131	I	42	I	0.32
	1	:		:							
KEXTONAL TOTALS	£	106	74	22	57	:	166	S	2	8	14.0
contact the product of								·			
juan.	ł	ı	;	1	I	1	1	I	1	1	I
Salt Lake	I	1	1	1	I	1	1	I	ł	ł	ı
Sanpete	1	:	1	1	I	I	I	ł	1	ı	I
Tnoele	:	:	I	1	1	1	27	75	9	-	0.22
Utah	ı	I	ł	I	1	1	91	332	37	Π	0.41
Wasatch	ı	:	1	:	1	1	ı	ł	1	1	ł
REGIONAL TOTALS	1			1	:		118	407	43	H	0.36
Southern Region											
Beaver	ł	I	1	:	I	:	ı	:	1	I	I
Garfield	ł	ı	ı	ł	I	1	1	ł	ł	1	I
Iron	1	I	I	ł	1	I	1	1	ł	I	I
Kane	I	I	1	:	I	1	I	;	ł	ł	I
Millard	I	ł	ł	ł	ı	I	1	ł	1	I	ł
Pinte	I	ı	I	ł	I	I	1	ł	1	I	I
Sevier	I	ł	ı	1	I	t	:	I	1	1	I
Washington	1	ı	t	I	ŀ	I	1	1	:	ł	I
Wayne	1	1	I	1	1	1	ł	ł	1	I	1
REGIONAL TOTALS	1	1		1	1	1	1	•	1	1	1
Northeastern Region											
Daggett	•	6		<b>3</b> 0	\$	•	6	\$	30		1.11
Duchesne	6	9	24	7	œ	1	1	;	1	1	I
Uintah	5	m	0	9	111	3	3	9 -	10	111	3.33
REGIONAL TOTALS	8	18	79	20	25	9	12	55	30	53	2.50
Southeastern Region											
Carbon	ł	I	ı	1	ł	1	ł	ı	1	t	:
Emery	I	1	ı	ł	t	ł	ł	1	1	1	:
Grand	1	1	I	ł	1	1	1	ł	:	1	ł
San Juan	I	1	1	1	1	1	1	1	ı	t	1
REGIONAL TOTALS	1	I	:	:	Ł	1	;	1	1	:	1

	0041		1961		OUX T		707		0.6AT			
Retion and	Birds/	Birds/	Birds/	Birds/	Birds/	Birds/	Birds/	Birds/	Birds/	Birds/	Birds/	Rinds/
County	100 Hr	Ilunter	100 Hr	Hunter	100 Itr	Hunter	Hanter	100 IIr	Hunter	100 IIr	Hunter	100 Hr
Northern Region												
Box Elder	35	1.42	39	3.50	<b>2</b> 9	2.83	4	2.60	300	2.00	<b>9</b> 8	1.43
Cache	15	0.57	17	0.74	78	1.15	<b>. 00</b>	0.63	ł	1	1	0.23
Davis	1	0.0	16	0.56	16	0.50	40	0.50	1	1	ł	ł
Morgan	ł	1	I	ł	I	I	ł	:	1	ı	I	1
Rich	9	0.20	9	0.44	. 14	0.52	Ţ	0.32	ļ	ł	ī	ł
Summit	200	2.00	1	1	ı	1	ı	I	1	ı	- 1	:
Weber	10	0.38	29	0.93	20	0.56	61	0.53	33	1.33	1	0.32
REGIONAL TOTALS	14	0.50	16	0.71	23	0.88	14	0.62	51	1.60	55	0.47
Central Region	r											
Juab	ł	;	ł	1	108	3.25	56	2.30	I	1	ł	ł
Salt Lake	1	;	;	ł	:	ł	Ī	1	ł	1	1	ł
Sanpete	I	1	;		ł	:	33	0.86	1	ı	I	ł
Tooele	1	ł	13	0.51	133	3.00	29	2.00	47	1.60	œ	0.22
Utah	10	<b>6E.</b> 0	ı	ı	20	0.86	39	1.90	31	0.97	Π	0.41
Wasatch	I	ł	1	ł	I	I	ı	1	ł	I	;	ı
REGIONAL TOTALS	10	0.39	13	0.51	26	1.07	33.	1.41	33	1.04	Ξ	0.36
Southern Region												
Beaver											I	1
Garfield	72	1.00	1	1	ı	ı	550	2.75	ı	ı	1	ł
Iron	I	;	:	ł	200	3.75	I	2.25	ł	1	ł	1
Kane	I	ı	:	I	I	ł	I	I	ı	1	1	I
Millard	16	0.60	8	2.00	150	3.00	I	ł	;	1	I	I
Pinte	1	1	I	ł	:	ł	1	1	ı	ı	I	1
Sevier	1	1	1	1	500	4.00	1	1	I	I	I	1
Washington	I	ł	1	ł	1	ł	1	1	ł	J.	1	I
Wayne	1	:	1	ł	1	+	1	1	I	;	ı	ı
<b>REGIONAL TOTALS</b>	17	0.63	82	2.00	190	3.64	1,000	2.50	1	I	1	1
Northeastern Region												
Daggett	ı	ł	- <b>8</b>	1.20	38	1.50	32	0.85	<b>6</b>	09.0	43	2.22
Duchesne	16	0.55	33	1.00	ł	:	ı	ı	:	1	ł	:
Uintah	12	0.43	53	1.46	24	0.47	7	0.32	60	1.95	111	3.33
REGIONAL TOTALS	13	0.45	50	1.37	26	0.52	6	0.40	30	1.34	55	2.50
Southeastern Region												
Carbon	ı	I	I	:	I	:	32	1.20	I	:	I	1
Emery	333	2.50	1	:	1	1	1	1	1	I	I	ł
Grand	50	0:50	:	;	ı	:	1	ı	ł	t	ı	I
San Juan	33	1.00	t	1	1	:	ł	I	I	1	1	1
REGIONAL TOTALS	- 54	1.40	:	:	1	1	32	1.20	1	1	1	1

Region and	Sample		Adults			Young		Young/	Young/
County	Size	М	F	Total	M	F	Total	100 Adults	100 Hens
Northern Region			·····	•••					
Box Elder									
Cache									
Davis		<b></b> `							
Morgan									
Rich	**				••			==	
Summit									
Weber									
<b>REGIONAL TOTALS**</b>	95	**			**	87		91	176
Central Region						•			
Juab	<b></b>					••	-		-
Salt Lake				<del></del> .	-		-		-
Sanpete							-		
Tooele	5	0	3	3	1	1	. 2	67	67
Utah	58	11	17	28	12	18	30	107	176
Wasatch					_				
<b>REGIONAL TOTALS</b>	63	11	20	31	13	19	32	103	160
Southern Region									
Beaver									
Garfield			••					. ••	
Iron					_				_
Kane									
Millard							'		
Piute									
Sevier									
Washington				••					
Wayne		••					<b></b>		••
REGIONAL TOTALS				-			••	·	**
Northeastern Region									
Daggett								·	
Duchesne		· ==			-				
Uintah				-			**		**
REGIONAL TOTALS						-			
Southeastern Region				-					-
Carbon				••	-				
Emery					-				
Grand		••			_				
San Juan		••		••					
REGIONAL TOTALS									
STATE TOTALS	158	11	20	31	13	19	32	103	160

** Includes portions of Box Elder, Cache, Rich and Weber Counties.

Region and	Sample_		Adults			Young		Young/	Young/
County	Size	М	F	Total	M	F	Total	100 Adults	100 Hens
Northern Region								,	
Box Elder	· •-								
Cache									<b></b> '
Davis									
Morgan									<u> </u>
Rich			•			+-		**	
Summit				••					••
Weber	••								
<b>REGIONAL TOTALS**</b>	25					. ==		257	
Central Region									
Juab							-		
Salt Lake			·						
Sanpete					+-				
Tooele									
Utah	5			2			3	150	
Wasatch									
REGIONAL TOTALS	5			2			3	150	
Southern Region									
Beaver			,		•-	-	•		
Garfield			•						
Iron			<b></b>						
Kane									
Millard									
Piute							**	·	·
Sevier									**
Washington					•				
Wayne									
REGIONAL TOTALS								· •	
Northeastern Region									
Daggett									
Duchesne					·				
Uintah	*							<b>*-</b>	
REGIONAL TOTALS									<b></b>
Southeastern Region									
Carbon									
Emery				••		••			
Grand							<b></b> '		
San Juan				<b></b> ,					
REGIONAL TOTALS			•-						•*
STATE TOTALS	30			2		**	3	150	

** Includes portions of Box Elder, Cache, Rich and Weber Counties.



# SUMMARY

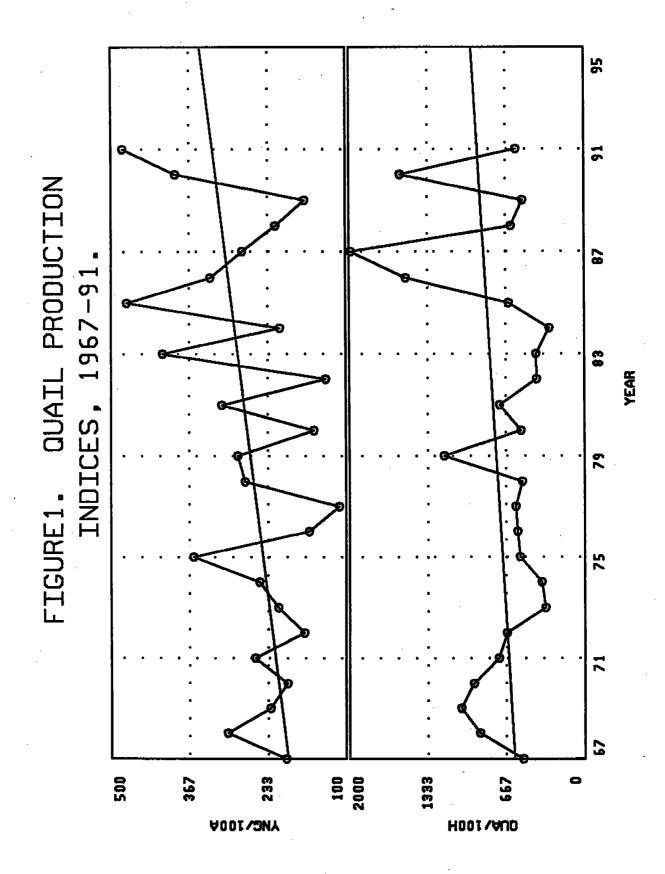
Production of Gambel's quail increased from 1990, and was above average. Production statewide increased in 1991 and was above average.

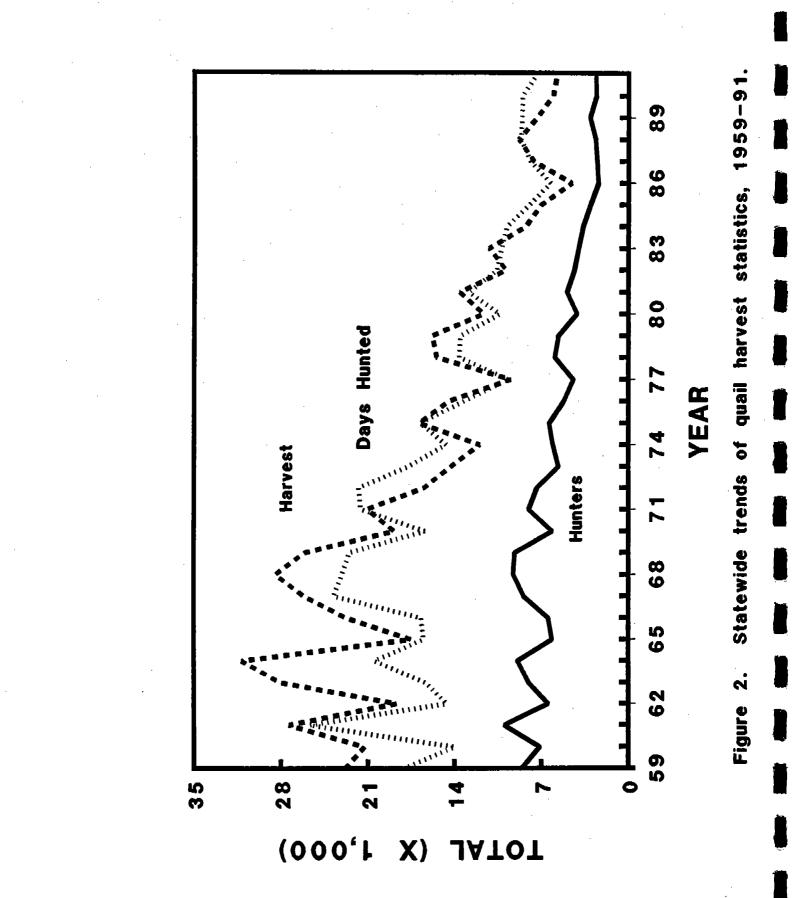
Statewide harvest statistics, when compared to 1990, showed an increase in total hunters and a decline in total harvest. Hunter success (birds per hunter-day) increased 10 percent and remained below average statewide. Hunter days afield decreased 14 percent from 1990. Total harvest of Gambel's quail reported in Washington County increased significantly.

There has been a long-term decline in hunter success and total harvest in Washington County; however, there has been an increase in production trend indices. Given the extensive urban development in the St. George-Hurricane areas since 1962, the decline in total harvest and hunter success is only partly attributable to habitat loss. There are areas that sustain quail populations that cannot be hunted because of urban expansion (i.e. Bloomington, Bloomington East, Santa Clara River below Santa Clara, north of St. George). These were popular hunting areas in the early 1960's (D. Nish personal communication).









### Brood Counts

Results of the annual random brood counts for 1991 are shown in Table 1 of this section. Long-term trends of young per adult ratios, mean brood size and quail observed per 100 hours are shown in Tables 2-4 and Figure 1. Gambel's quail long period waterhole count trends are in Table 10. Survey results for 1991 compared to 1990 and the previous 10-year (1981-90) average follow:

		Percent	<u>change irom</u>
	<u>1991</u>	<u>1990</u>	<u>Average</u>
Total quail observed	29	-83	-92
Young per 100 adults	480	+23	+64
Mean brood size	9.00	-14	+23
Quail observed per 100 hours	580	-63	-33
Total hours effort	5	-55	-91

Harvest statistics for 1990 indicated a decreased breeding population of quail statewide. In Washington County hunter success rates increased slightly from the previous year.

Brood count effort decreased in 1991 due to Division specialization of conservation officer and biologist duties and no staffing of additional biologists under Phase I of reorganization. Only 29 quail were observed in 1991 which was 92 percent below average. Total hours of effort on brood counts was 5 which is 91 percent below average for the last 10 years. The production index of young per 100 adults for Gambel's quail was 62 percent higher than what it was the previous year. Production statewide increased from 1990 and was above average.

Temperatures and precipitation were below average in the Dixie climatic subdivision April through July. The winter was mild. The drought continued.

### Harvest

Results of the annual hunter questionnaire for 1991 are shown in Table 5. Long-term trends of quail bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 6-8, and total statewide harvest statistics in Table 9.

Comparison of the 1991 season to 1990 and the previous 32-year average follow:

		Percent	<u>change</u> from
	<u>1991</u>	1990	Average
Quail hunters	2,644	+1	-52
Quail harvested	5,775	-5	-62
Hunter-days afield	7,393	-14	-47
Quail per hunter-day	0.78	+10	-25
Quail per hunter	2.18	-6	-17

Harvest for 1991 decreased 5 percent from 1990 and was 62 percent below average.

In Washington County (Gambel's quail), hunter success increased 40 percent and hunter days afield increased 33 percent from 1990. Total harvest increased 87 percent. Thirty-five percent of the statewide harvest of quail was taken in Washington County during 1991 compared to 18 percent in 1990, 32 percent in 1989, 28 percent in 1988, 43 percent in 1987, 29 percent in 1986 and 36 percent in 1985.

Long-term quail harvest statistics are shown in Figures 2 and 3.

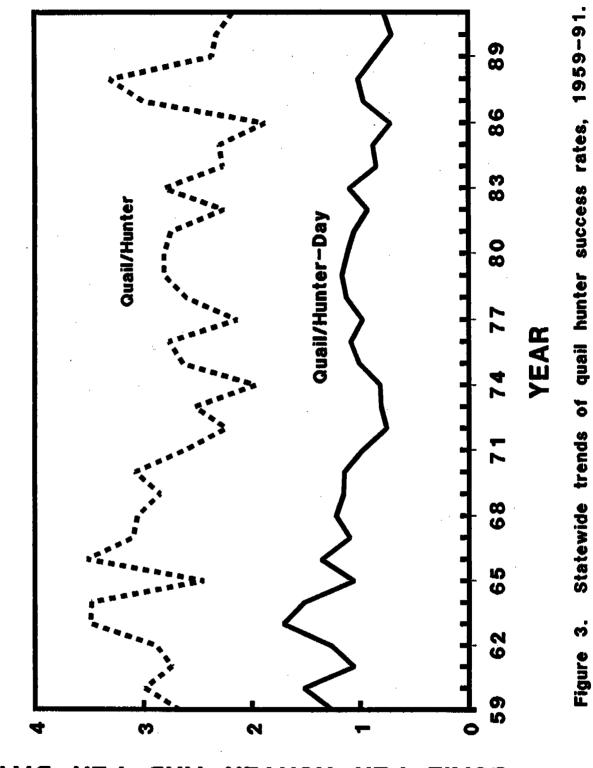




Figure 3.

		Distinct			MIXED YOUNG											
Region and		Broods		Mean	& Adults		Adults w/o	Total	Tatal	Young/	Vehicle		llours of Effort	f Effort		Birds/
County	-	Adults	Young	Brood	Adults Young		Young	Adults	Young	100 Advilts Mites	1	Veluicle	Horse	Walk	Total	100 IIr
Northern Region																
Box Elder	I	ı	1	;	ł	ı	1	ł	1	ı	I	ı	1	I	I	1
Cache	1	I	ł	ł	I	1	1	1	ı	1	;	ı	ı	I	ł	I
Davis	I	1	I	1	1	1	1	1	1	I	ı	1	I		ı	1
Morgan	1	I	1	1	;	ı	1	;	1	ł	1	1	I	I	I	I
Rich	I	1	1	1	ı	ł	:	ı	ı	ł	ł	ı	I	I	I	1
Summit	ł	ı	1	:	;	I	I	1	1	1	1	ł	1	ł	I	ł
Weber	I	ł	1	1	ł	1	ı	;	ı	:	I	I	ł	ı	ı	I
REGIONAL TOTALS	·	.	1	1	1	,	:	:	1	1		1	1	;	,	'
Central Region																
Juab	ł	I	I	1	1	I	1	;	1	ł	1	ł	I	I	ı	I
Salt Lake	ł	1	1	1	1	ı	1	1	ı	;	ı	1	I	I	I	I
Sanpete	I	I	I	:	I	ı	ł	1	I	1	1	1	1	1	I	I
Tooele	I	1	ł	I	t	ł	ł	ł	I	1	ł	i	ı	1	I	I
Utah	-	-	ð	9.00	1	I	I	I	Q	900	1	-	I	I	1	1,000
Wasatch	I	Ì	I	ł	I	I	ı	1	ł	ł	1	1	I	1	I	I
REGIONAL TOTALS	-	-	٩	9.00	:	,	:	-	6	906		-	,	,	-	1,000
Southern Region									1							
Beaver	1	I	I	I	I	I	ŧ	ł	I	t	I	ı	ı	ı	ł	ì
Garfield	I	I	ı	1	:	1	1	ı	;	ł	1	ł	I	1	ı	1
Iron	1	I	1	:	ı	ı	ı	1	I	1	ı	I	I	I	ı	I
Kante	1	ı	ı.	!	;	I	I.	1	I	1	1	1	I	I	ł	I
Mülard	I	I	1	1	I	1	ı	ı	1	1	:	ł	ı	1	1	I
Piute	1	I	1	:	ł	ı	ı	1	I	ł	ı	1	ı	I	ı	I
Sevier	ı	1	I	I	;	1	1	ľ	1	1	ł	ł	I	ı	ı	ļ
Washington	I	I	1	1	1	ı	I	ł	ł	ł	1	ı	1	:	I	ł
Wayne	1	ı	1	1	ł	I	1	1	I	1	1	ı	1	1	I	ŧ
REGIONAL TOTALS	t		I,	1		1	t	ł	I	1	1	1	1	I	1	1
Northeastern Region																
Daggett	I	t	ł	I	I	1	ı	ı	I	1	ł	ı	I	ı	I	I
Ducheste	1	I	I	4	4	15	1	4	15	375	<b>2</b> 0	4	ł	1	4	475
Uintab	1	1	1	ŧ	;	1	ı	ı	•	:	1	1	:	1	I	F
REGIONAL TOTALS	I	1	I	:	4	15	1	4	15	. 37S	<b>2</b> 0	4	T	1	4	475
Southeastern Region																
Carbon	1	1	1	I	1	1	ł	I	ł	1	1	1	t	:	ı	ł
Emery	1	1	1	;	ł	I	:	:	1	:	1	I	ı	1	1	I
Grand	1	I	1	1	1	1	1	1	I	ı	1	1	ł	1	ı	ł
San Juan	1	ł	1	;	1	I	t	1	1	1	ł	ı	ı	:	;	I
<b>REGIONAL TOTALS</b>	1	1	1	1	1	ŧ	:	1	1	1	1	1	+	:	1	1

Region and						Year						Average
County	1981	1982	1983	1984	1985	9861	4861	1988	1989	1990	1661	1981-90
Northern Region												
Box Elder	440	1	i	1	1	1	I	ı	1		ł	
Cache	1	I	:	ł	I	ı	ł	1	ı	ł	ı	
Davis	R	1	ł	1	1	1	1	:	1	I	1	
Morgan	ŧ	:	550	ł	1,050	1	ı	I	ł	1	1	
Rich	ł	ł	:	1	. 1	ı	:	1	1	:	I	
Summit	1	ł	1	ł	1	ı	I	ł	ł	1	ı	
Weber	1	I	125	125	ı	ı	1.400	;	1	I	ł	
REGIONAL TOTALS	128	.	130	125	1.050	'	1.400	224		939	1	530
Central Region												
Juab	1	ł	I	I	ł	ł	1	I	1	1	1	
Salt Lake	(1)	4	40	ı	ı	1	I	ı	1	I	1	
Samete	;	: 1	: 1	:	I	I	:	1	1	1	I	
Tonele	ı	۱	I	ł	1	1	I	I	ł	I	ł	
Utah	100	ı	1	ı	700	700	220	1	1	1	We	
Wasatch	1	1	1	1		I	1	;	1	1	1	
REGIONAL TOTALS	12	\$	9	1	180	300	220		,	1	8	205
Southern Region		1										
Beaver	1	ı	1	I	ı	I	1	ł	1	ı	:	
Garfield	I	ı	I	1	ł	I	1	ľ	;	1	1	
lron	ł	ı	ı	ł	1	1	I	1	1	ı	I	
Kane*	1	ł	:	1	ł	I	1	I	ł	1	I	
Millard	540	300	133	133	138	4	545	9 <u>6</u>		179	ł	
Piute	ı	ı	ı	t	ı	1	ł	1	1	:	ł	
Serier	1	250	1	I	ı	ł	1	1	ł	ł	t	
Washington*	226	152	624	224	11S	412	250	9 <b>7</b> 1	194	367	1	
Wayne*		:	•	1	ł	1	:	t	1	1	I	
REGIONAL TOTALS		162	544	213	434	456	272	242	194	252	1	321
Northeastern Region												
Daggelt	I	ŧ	ı	1	1	1	ı	1	1	1	I	
Duchene	583	90 <u>9</u>	ł	1	ł	1	ı	300	ı	1	375	
Vintah		411	ı	t	1	F	1	126	420	667	1	
REGIONAL TOTALS		286	1	:	1	, ;		177	420	667	375	38
Southeastern Region												
Carbon	1	ł	ı	1	I	1	I	ı	ł	:	1	
Emery	1	ı	1	:	ı	F	ı	1	:	I	ł	
Grand	300	:	1	ı	1	1	1	ł	1	t	ł	
Sen Juan	,	:	1	ı	1	ł	ł	1	:		1	
RECIONAL TOTALS	300		Ľ	I	•	J		r	:	1	1	300
STATE TOTAL C												

Keppin and						Year						Average
County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1981-90
Northern Region												
Box Elder	11.00	'n		ı	. <b>1</b>	1	ı	ı	ı	I	I	
Cache	:	ı	1	ı	ł	1	1	ŧ	I	ı	1	
Davis	1.33	ı	ı	ł	1	1	I	6.33	1	11.80	ı	
Morgan	1	1	11.00	;	10.50	I	1	1	ı	ı	1	
Rich	ł	ı	I	:	ł	ı	I	ł	I	1	I	• .
Summit	ı	ı	ł	1	1	1	1	1	ı	1	1	
Weber	1	1	ł	3.75	1	1	I	14.00	1	•	I	
REGIONAL TOTALS	6.85	1	5.20		10.50		14.00	5.33		11.80	1	8.95
Central Region												
leaf.	1	ı	:	I	1	1	I	ı	I	1	ı	
Sole I abo	1	1	1.00		1	ı	I	I	1	ł	1	
Saut Lance Correcto	I	1		1	1		1	;	I	1	ı	
	I							I	1	I	I	
1 ooele	1	ı	1	I	1	1	1	ı	1	I		
Utah	3.60	I	1	1	- Mî - Z		A0.11	I	I	1	<b>M*</b> K	
Wasatch	,	'	1	ŀ	1	1		1	•	,		
<b>REGIONAL TOTALS</b>	3.00	1	3.00	1	7.00	7.50	11.00	1	•	ı	8.6 8	6.30
Southern Region												
Beaver	ı	I	ı	ł	ı	I	ı	ı	I	I	1	
Garfield	1	ł	ł	ı	1	I	r	1	ı	1	1	
Iroa	1	1	ı	ı	ł	:	1	ı	I	1	i	
Kane*	1	1	:	1	ł	ı	1	1	:	1	1	
Millard	8.54	ı	3.00	4.00	0.0	1.80	12.00	11.28	1	12.50	1	
Piute	ı	۱	ı	I	1	1	1	1	ı	I	ı	
Sevier	I	I	I	1	ı	ı	ı	I	1	I	1	
Washington*	6.42	6.00	13.50	5.09	8.43	7.85	5.59	4.64	I	11.00	1	
Wayne*	5.50	1	1	ı	1	•	,	1	ı	,	1	
REGIONAL TOTALS	7.97	6.00	11.17	5.06	8.56	6.64	6.16	7.22	1	11.00	'	7.75
Northeastern Region												
Daggett	ł	1	1	:	ł	1	1	ı	I	1	I	
Duchesne	9.00	1	1	ł	I	1	1	<b>6</b> .00	1	ı	1	
Uintah	12.80	6.17	Ι.	I	1	1	1	8.50	4.50	6.70	1	
REGIONAL TOTALS	11.71	6.17	1	1	1	1	1	8.15	4.50	6.70	ı	7.45
Southeastern Region												
Carbon	I	ł	1	ŧ	I	1	1	ŀ	I	1	t	
Emery	ı	ł	ł	ł	I	ı	ı	1	1	I	1	
Grand	4.50	1	ı	:	<b>1</b>	I	ı	ł	1	1	ł	
San Juan	1	1	1	1	;	1	:	1	1	1	1	
REGIONAL TOTALS	4.50	;	E	:	:	1	1	1	1	,	1	4.50
					•		5,	54.0		10 AC	000	14.6

Kegion and												
County	1861	1982	1983	1984	1985	1986	1987	1988	1989	9 <u>6</u> 1	1991	1981-9
Northern Region												
Box Elder	1,800	ı	I	1	1	1	ł	1	I	1	I	
Carche	;	1	t	ł	ı	1	1	ı	I	ı	1	
Davis	525	1	I	;	1	1	I	1,100	ł	1	ł	
Morgan	I	1	111	1	ı	1	I	ı	ł	ł	ł	
Rich	:	1	1	ł	1	1	ł	I	1	1	ı	
Summit	I	ł	1	1	I	ł	ı	I	ł	1	ı	
Weber	I	1	825	1	ţ	1	1,500	1	1	1	1	
REGIONAL TOTALS	168	.	511	1	1	1	1,500	1,100	1	I	1	88
Central Region												
Juab	1	I	I	I	I	1	ł	1	ł	I	1	
Salt Lake	63	527	1,400	1	1	1	1	I	1	ł	I	
Sanpete	I	I	I	i	ı	ı	1	1	I	1	ı	
Tooele	1	ı	I	ł	1	1	ı	ı	;	;	l	
Utah	75	1	1	1	320	2,000	1,600	t	I	I	1,000	
Wasatch	ı	I	1		ŀ	1	ł	T	1	'	1	
REGIONAL TOTALS	258	414	247	1	320	2,000	1,600	t	1	1	7,000	8
Southern Region										-		
Beaver	ł	ł	1	ı	ı	I	ı	1	ı	<b>i</b> .	I	
Garfield	ı	<b>і</b>	I	:	t	1	ı	:	1	I	1	
Iroa	1	1	1	I	I	1	1	1	I	ı	r	
Kane*	ı	ł	ł	ł	1	1	I	ı	1	1	1	
Müllard	3,911	800	350	171	344	867	1,303	1,271	1	975	t	
Piate	:	I	1	I	ı	1	ı	1	I	1	1	
Serier	ł	1,400	I	I	1	1	I	ı	1	1	I	
Washington*	275	Ш	605	380	783	1,604	2,029	530	8	1,050	1	
Wayne*	1	8	1	,	1	•	1	I		1	•	000
REGIONAL TOTALS	1,053	69	<b>8</b> 8 8	357	<u></u>	1,484	1,958	251	8	1,013	ı	828
Northeastern Region												
Daggett	I	1	1	1	1	I	I	1	ı	1	. !	
Duchesne	205	. 12	4	I	I	ı	I	356	1	1	475	
Uintah 	708	328	<u>8</u>	,	•	1	;	1,80	5	767	ı	
REGIONAL TOTALS	406	123	88	1	1	;	,	11	371	191	475	ŧ
Southeastern Region												
Carbon	I	I	I	ł	1	:	1	ł	1	I	I	
Emery	ł	ł	1.	1	:	1	1	I	1	1	ı	
Grand	400	:	ı	1	1	1	<b>1</b> .	ł	1	I	1	
San Juan	1	;	•	,	;		-	Ľ	•	,	ľ	
REGIONAL TOTALS	400	1	1	1	1	1	1		ŧ	•	ł	ŝ
								ę				

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS Afield	BIRDS BAGGED	BIRDS PER HUNTER-DAY	۴ OF PRESSURE	€ OF HARVEST
NORTHERN REGION						
BOX ELDER	8	226	86	0.38	3.06	1.51
CACHE * *	3	104	0	0.00	1.41	0.00
DAVIS	4	104	86	0.83	1.41	1.51
MORGAN * *	0	0	0	0.00	0.00	0.00
RICH**	0	0	0	0.00	0.00	0.00
SUMMIT**	1	52	Ō	0.00	0.71	0.00
WEBER	9	226	121	0.54	3.06	2.11
REGIONAL TOTALS	25	713	295	0.41	9.65	5.12
CENTRÁL REGION		<b>_</b>				
JUAB	2	69	504	7.25	0.94	8.74
SALT LAKE	1	104	226	2.17	1.41	3.92
SANPETE**	1	69	0	0.00	0.94	0.00
TOOELE**	3	121	34	0.29	1.65	0.60
UTAH	33	1,635	991	0.61	22.12	17.17
WASATCH**	0	0	. 0	0.00	0.00	0.00
REGIONAL TOTALS	40	2,000	1,757	0.88	27.06	30.43
SOUTHERN REGION	-	_ ·	-	• - •		
BEAVER	o	0	0	0.00	0.00	0.00
GARFIELD	0	0	0	0.00	0.00	0.00
IRON	0	0	0	0.00	0.00	0.00
KANE	0	0	0	0.00	0.00	0.00
MILLARD	8	626	52	0.08	8.47	0.90
PIUTE	0	0	0	0.00	0.00	0.00
SEVIER	4	86	156	1.80	1.18	2.71
WASHINGTON	42	2,383	2,000	0.84	32.24	34.64
WAYNE	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	54	3,096	2,209	0.71	41.89	38.26
NORTHEASTERN REG						
DAGGETT	1	17	17	1.00	0.24	0.30
DUCHESNE	9	330	382	0.16	4.47	6.63
UINTAH	19 	991 	469	0.47	13.41	8.13
REGIONAL TOTALS	29	1,339	869	0.65	18.12	15.06
SOUTHEASTERN REG	-	60	333	4 50	0.04	F 45
CARBON	2	69	313	4.50	0.94	5.42
EMERY	3	156	330	2.11	2.12	5.72
GRAND	0	0	0	0.00	0.00	0.00
SAN JUAN	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	5	226	643	2.85	3.06	11.15
UNKNOWN	1	17	0	0.00	0.24	0.00
STATE TOTALS	154	7,393	5,775	0.78	100.00	100.00

Table 5. Summary of quail hunter success and distribution of harvest and hunting

*Total hunter-trips from questionnaire returns. **Closed to quail hunting in 1991.

Region and				•	Year			
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region					•			
Box Elder	0.21	0.50	0.00	0.23	0.80	0.90	0.71	0.38
Cache	0.00	0.00	1.00	0.43	0.22*	0.20*	0.10*	0.00
Davis	0.43	0.45	0.44	0.43	0.74	0.67	0.15	0.83
Morgan	0.00	1.00	1.00	2.00	1.00*	0.00*	2.00*	0.00
Rich	0.00	0.00	0.00	0.00	1.00*	0.00*	0.00*	0.00
Summit	.0.00	0.00	0.40	0.00	0.00*	0.00*	0.00*	0.00
Weber	0.64	0.71	0.69	0.11	0.35	0.21	0.50*	0.54
REGIONAL TOTALS	0.40	0.54	0.50	0.35	0.60	0.38	0.39	0.41
Central Region								
Juab	0.33	0.00	2.00	0.00	1.38	0.00	0.19	7.25
Salt Lake	0.32	1.88	0.43	0.83	1.18	0.50	0.42	2.17
Sanpete	0.00	1.50	1.00	0.86	0.80*	0.25*	0.00*	0.00
Tooele	0.22	1.50	0.33	1.00	1.24*	3.25*	0.60*	0.29
Utah	0.82	0.60	0.72	0.59	0.46	0.84	0.75	0.61
Wasatch	1.25	0.00	0.00	0.50	1.13*	0.00	0.00*	0.00
REGIONAL TOTALS	0.65	0.85	0.69	0.63	0.80	0.87	0.55	0.88
Southern Region				-				
Beaver	0.00	1.83	0.00	0.00	5.00	0.00	0.00	0.00
Garfield	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00
Iron	1.50	0.00	0.00	0.00	0.00	1.67	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	1.00	0.63	1.55	0.96	0.00	0.90	1.06	0.08
Piute	0.50	0.00	1.00	2.25	0.00	0.00	0.00	0.00
Sevier	0.86	1.80	0.00	0.00	1.50	0.00	0.00	1.80
Washington	1.98	1.23	1.27	2.33	2.30	1.26	0.60	0.84
Wayne	0.00	0.00	0.00	0.00	2.00	0.80	0.00	0.00
REGIONAL TOTALS	1.64	1.21	1.15	1.93	2.08	1.19	0.66	0.71
Northeastern Regi		4,64			2.00			
Daggett	0.00	0.00	0.00	0.50	0.00	0.00	0.00	1.00
Duchesne	0.08	0.70	0.44	1.86	0.89	0.62	0.91	1.16
Vintah	0.72	1.00	0.70	0.52	0.87	0.73	0.98	0.47
REGIONAL TOTALS	0.54	0.86	0.63	0.81	0.88	0.68	0.95	0.65
Southeastern Regi		0.00	0.05	0.01	0.00	0.00	0.25	0.03
Carbon	0.00	1.00	0.00	1.00	0.38	5.00	1.11	4.50
Emerv	0.00	0.31	1.14	1.00	1.11	0.50	1.86	2.11
Grand	0.00	0.00	0.00	0.50	0.80	0.00	2.00	0.00
San Juan	0.00	0.00	0.00	0.00	0.00	8.00	0.00	0.00
REGIONAL TOTALS	0.00	0.62	0.29	0.85	0.00	2.00	1.68	
REGIONAL IDIALS	0.00	0.62	0.29	0.85	0.77	2.00	1.00	2.85
Unknown counties	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00
STATE TOTALS	0.85	0.88	0.72	0.97	1.02	0.86	0.71	0.78

Table 6. Summary of quail bagged per hunter-day by region and county, 1984-91.

Region and					Year			
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region								
Box Elder	0.98	0.30	0.00	0.96	1.50	2.53	4.05	1.51
Cache	0.00	0.00	0.44	1.92	0.37*	0.28*	0.34*	0.00
Davis	6.11	5.16	3.59	1.92	6.98	1.69	1.35	1.51
Morgan	6.11	0.60	0.90	0.64	0.18*	0.00*	0.68*	
Rich	0.00	0.00	0.00	0.00	0.18*	0.00*	0.00*	
Summit	0.00	0.00	0.90	0.00	0.00*	0.00*	0.00*	
Weber	2.19	6.07	4.94	0.32	1.32	1.97	5.41	2.11
REGIONAL TOTALS	9.29	12.15	10.80	5.76	10.56	6.46	11.83	5.12
Central Region								
Juab	0.48	0.00	0.90	0.00	4.15	0.00	1.69	8.74
Salt Lake	1.46	9.11	2.69	1.60	3.77	0.84	2.70	-3.92
Sanpete	0.00	0.91	0.44	3.84	0.75*	0.56*	0.00*	
Tooele	0.98	0.91	0.90	0.64	6.79*	3.65*	1.01*	0.60
Utah	18.33	12.45	34.24	18.58	9.43	21.35	16.89	17.17
Wasatch	1.22	0.00	0.00	0.64	5.09*	0.00*	0.00*	0.00
REGIONAL TOTALS	22.49	23.40	3.18	25.32	30.00	26.41	22.30	30.43
Southern Region								
Beaver	0.00	3.33	0.00	0.00	0.00	0.00	0.00	0.00
Garfield	0.00	0.00	0.00	0.00	2.83	0.00	0.00	0.00
Iron	0.72	0.00	0.00	0.00	1.88	1.40	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	7.82	1.52	7.65	7.69	0.00	5.34	5.74	0.90
Piute	0.48	0.00	0.44	2.88	0.00	0.00	0.00	0.00
Sevier	1.46	2.72	0.00	0.00	0.56	0.00	0.00	2.71
Washington	46.45	35.56	29.27	42.62	27.73	32.30	17.57	34.64
Wayne	0.00	0.00	0.00	0.00	0.75	1.12	0.00	0.00
REGIONAL TOTALS	56.97	43.16	37.39	53.20	33.77	40.17	23.31	38.26
Northeastern Req		40.10						
Daggett	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.30
Duchesne	0.48	5.77	1.79	4.16	6.41	9.55	7.10	6.63
Vintah	10.76		7,19	3.84	11.32	2.92	13.85	8.13
REGIONAL TOTALS	11.24		9.00	8.33	17.73	22.47	20.95	15.06
Southeastern Reg:		14.05		0.00				
Carbon	0.00	4.85	0.00	0.32	0.56	1.40	3.38	5.42
	0.00	1.52	3.59	5.44	1.88	0.84	17.57	5.72
Emery	0.00	0.00	0.00	1.60	0.75	0.00	0.68	0.00
Grand	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00
San Juan				7.37	3.20	4.49	21.62	11.15
REGIONAL TOTALS	0.00	6.38	3.59	1.21	3.20	7.42	21.02	<u> </u>
Unknown counties	0.00	0.00	0.00	0.00	4.71	0.00	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 7. Percentage distribution of quail harvest by region and county, 1984-91.

*Closed Season

Region and					Year			
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region	-							
Box Elder	3.93	0.53	1.94	4.02	1.92	2.41	4.09	3.06
Cache	0.61	1.06	0.32	4.33	1.73*	1.20*	2.40*	1.41
Davis	12.00	10.18	5.85	4.33	9.61	2.17	6.25	1.41
Morgan	0.41	0.53	0.65	0.30	0.19*	0.96*	.24*	
Rich	0.00	0.00	0.00	0.00	0.19*	0.00*	0.00*	0.00
Summit	0.00	0.00	1.63	0.30	0.57*	0.00*	0.72*	0.71
Weber	2.90	7.51	5.20	2.78	3.84	7.95	7.69	3.06
REGIONAL TOTALS	19.87	19.83	15.63	16.08	18.07	14.70	21.39	9.65
Central Region								
Juab	1.23	0.26	0.30	0.30	3.07	0.00	6.49	0.94
Salt Lake	3.93	4.28	4.55	1.85	3.26	1.45	4.57	1.41
Sanpete	0.61	0.53	0.32	4.33	0.96*	1.93*	0.24*	0.94
Tooele	3.72	0.53	1.94	0.61	5.57*	0.96*	1.20	1.65
Utah	19.04	18.23	34.19	30.65	20.76	21.69	16.11	22.12
Wasatch	0.83	0.53	0.00	1.23	4.61*	0.00*	0.24*	0.00
REGIONAL TOTALS	29.39	24.39	41.37	38.99	38.26	26.03	28.85	27.06
Southern Region			·····		<u>.</u>			
Beaver	0.00	1.60	1.63	0.00	0.00	0.00	0.00	0.00
Garfield	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00
Iron	0.41	0.80	0.65	0.00	0.38	0.72	0.00	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	6.62	2.14	3.57	7.73	2.50	5.06	3.85	8.47
Piute	0.83	0.00	0.32	1.23	0.00	0.00	0.24	0.00
Sevier	1.45	1.34	0.65	0.00	0.38	0.00	0.00	1.18
Washington	19.87	25.47	16.60	17.64	12.30	21.93	20.91	34.24
Wayne	0.20	0.00	0.00	0.00	0.38	1.20	0.00	0.00
REGIONAL TOTALS	29.39	31.36	23.44	26.62	16.52	28.92	25.00	41.89
Northeastern Reg.			20144	20102	10.02	20172	20.00	
Daggett	0.00	0.00	0.00	0.61	0.00	0.00	0.00	0.24
Duchesne	4.97	7.23	2.92	2.16	7.30	13.25	5.53	4.47
Uintah	12.63	8.03	7.48	7.12	13.26	15.18	10,10	13.41
REGIONAL TOTALS	17.59	15.27	10.42	9.90	20.57	28.44	15.63	18.12
Southeastern Reg.			19.76			20.77		
Carbon	2.90	4.28	6.83	0.30	1.53	0.24	2.16	0.94
Emery	0.61	4.28	2.28	4.95	1.73	1.45	6.73	2.12
Grand	0.20	4.28	0.00	3.09	0.96	0.00	0.24	0.00
San Juan	0.00	0.26	0.00	0.00	0.98	0.00	0.24	0.00
REGIONAL TOTALS	3.72	9.11	9.11	8.34	4.22	1.93	9.13	3.06
ALGIONAL IVIALS	3.14	7.11	7.11	0.34		1.73	. 7,13	3.00
Unknown counties	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.24
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 8. Percentage distribution of quail hunting pressure by region and county, 1984-90.

	Total	Total	Hunter-Days	Quail Per	Quail Per
Year	Hunters	Harvest	Afield	Hunter-Day	Hunter
951	3,856	6,362	7,069	0.90	1.65
952	2,694	6,105	5,500	1.11	2.27
1953	2,676	5,753	4,494	1.28	2.15
954	3,855	7,479	8,696	0.86	1.94
1955	-	-		0.17	2.10
1956	-	-		<del>.</del> .	2.26
1957		-	-	-	1.85
958	-		<u> </u>	-	3.73
959	8,554	22,854	18,174	1.26	2.67
960	7,117	21,272	13,971	1.52	2.99
961	9,980	27,362	25,746	1.06	2.74
962	6,462	18,710	14,660	1,27	2.89
963	8,059	28,088	16,383	1.71	3.49
.964	8,951	31,189	20,510	1.52	3.48
965	6,163	17,532	16,528	1.06	2.45
966	6,465	22,771	16,720	1.36	3.52
967	8,455	26,187	23,806	1.10	3.10
968	9,302	28,469	23,132	1.23	3.06
969	9,160	26,119	22,529	1.16	2.85
970	6,141	18,896	16,452	1.15	3.08
971	8,039	21,082	21,595	0.98	2.62
972	7,380	16,504	21,779	0.76	2.24
973	5,654	14,324	17,777	0.81	2.53
974	6,097	12,005	14,702	0.82	1.97
975	6,397	16,903	16,805	1.01	2.64
976	5,215	14,454	13,261	1.09	2.77
977	4,446	9,496	9,646	0.98	2.14
978	5,924	15,491	13,649	1.13	2,61
979	5,632	15,821	13,550	1.17	2.81
980	4,156	11,690	10,400	1,12	2.81
981	4,946	13,586	12,843	1.06	2.75
982	4,368	9,870	10,575	0.93	2.26
983	4,012	11,248	10,232	1.10	2.81
984	3,654	8,303	9,805	0.85	2.27
985	3,065	7,051	7,994	0.88	2.30
986	2,432	4,574	6,326	0.72	1.88
987	2,549	7,648	7,918	0.97	3.00
988	2,671	8,849	8,682	1.02	3.31
989	3,111	7,384	8,607	0.86	2.37
990	2,614	6,091	8,561	0.71	2.33
991	2,644	5,775	7,393	0.78	2.18
<b>fotals</b>	·		· · · ·		
1951-91)	202,896	553,297	506,470	· -	_
verages	-		· · · · · · · · · · · · · · · · · · ·		
1951-90)	5,563	15,209	13,863	1.05	2.62

Table 9. Statewide summary	of	quail harvest	statistics,	1951-91.
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Table 10. Gambet's quail long period waterhole count trend on the west slope of the Beaver Dam Munithins, Washington County, 1975-91. These counts have been conducted since 1962.

								Year										Average
Index	1975	1975 1976 1977	161	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1991 1975-90
Total Young	14S 61	61	I	67	253	1	37	88	114	166	47	163	346	66	35	33	208	112
<b>Total Adults</b>	20	S	I	29	77	2	25	33	. 14	98	11	<b>48</b>	139	47	18	•	SS	4
Total Quait	165	114	17	<b>9</b> 8	330	124	<b>G</b>	118	128	252	58	211	487	106	23	42	243	147
Young per 100 Adults	725	115	ł	353	329	138	148	258	814	193	427	340	250	126	194	367	594	318

# HUNGARIAN PARTRIDGE

# SUMMARY

Harvest data for 1990 indicated above average breeding populations for 1991. Limited brood data was collected in Box Elder County and indicated an increase in Hun production.

The 1991 hunt data indicated increased hunting pressure on Huns when compared to 1990. The number of Huns harvested increased 9 percent in 1991. Hunters afield increased 15 percent. Total hunters, days afield and harvest were still below the long-term average.

We expected continued improvement in Hungarian partridge populations in Box Elder County due to the large quantity of agricultural land set aside in the Conservation Reserve Program. We believe that increases in hunter success since 1985 reflect increased partridge populations as a direct result of CRP. Exceptions (declines) in 1988 and 1989 were probably due to drought. The decline in production and harvest in 1989 was possibly due to the hot, dry summer.



### Brood Counts

Results of the annual random brood counts for 1991 are shown in Table 1 of this section. Long-term trends of young per adult ratios, mean brood size and Huns observed per 100 hours are shown in Tables 2-4. Results of the survey for 1991 compared to 1990 and the previous 10-year (1981-90) average follow:

		Percent	<u>change from</u>
	<u>1991</u>	1990	<u>Average</u>
Total Huns observed	134	-14	+54
Young per 100 adults	793	+98	+78
Mean brood size	12.50	+40	+24
Huns observed per 100 hours	327	-37	+239
Total hours effort	41	+37	-58

Harvest data for 1990 indicated an above average breeding population for 1991. Hungarian partridge should have overwintered well since December through February were dryer than normal but temperatures in the Western and North Central climatic subdivisions were below normal in December and January. It was a relatively mild winter for partridge. However, this is the sixth year of drought. Young per 100 adults increased 98 percent from the previous year and was 78 percent above average.

### <u>Harvest</u>

### Hunter Ouestionnaire

Results of the annual hunter questionnaire for 1991 are shown in Table 5. Long-term trends of Huns bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 6-8 and total statewide harvest statistics in Table 9. The 1991 season compared to 1990 and the previous 32-year average follow:

		<u>Percent</u>	<u>change from</u>
	<u>1991</u>	<u>1990</u>	<u>Average</u>
Hungarian partridge hunters	2,662	+15	-26
Hungarian partridge harvest	7,376	+9	-4
Hunter-days afield	8,367	+20	-6
Huns per hunter-day	0.88	-9	+8
Huns per hunter	2.77	-6	+36

Hungarian partridge hunters and hunting pressure increased. Success decreased 9 percent from 1990. Harvest was 4 percent below the 32-year average.

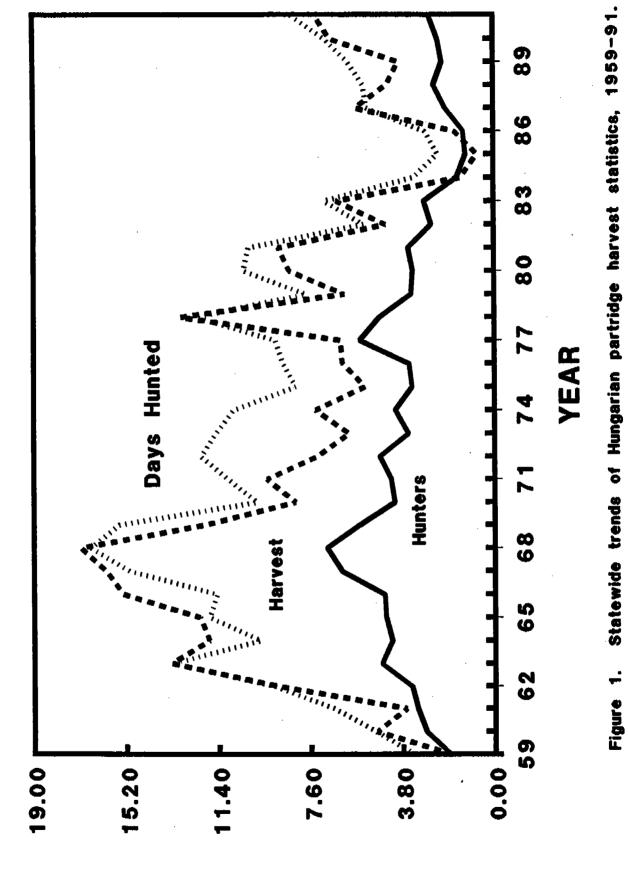
Long-term Hun harvest statistics are shown in Figures 1 and 2.

## Field Bag Checks

Results of the survey for 1991 are shown in Table 10. Hunter success trends determined via this method are shown in Table 11. Indices obtained for 1991 compared to 1990 and the previous 10-year (1981-90) average follow:

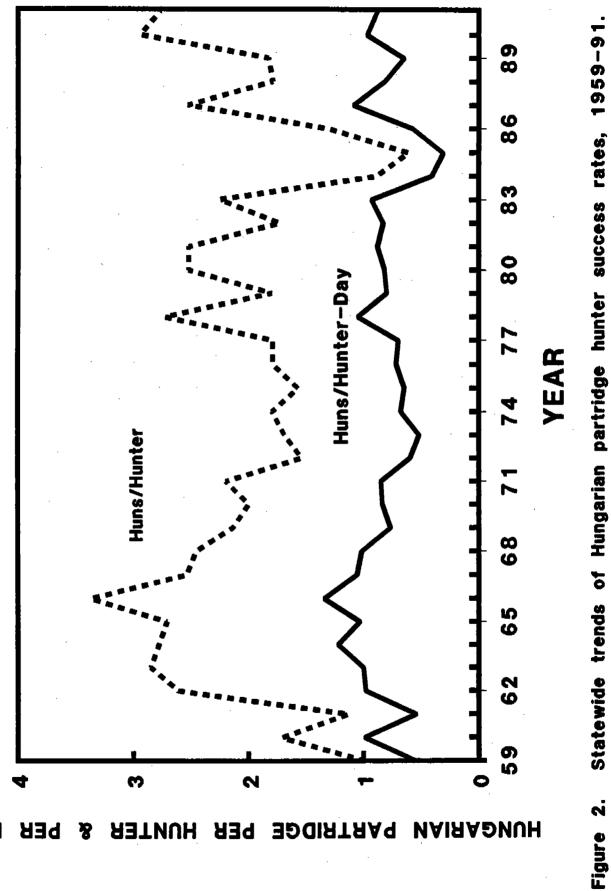
· · · · · ·			<u>hange from</u>
	<u>1991</u>	<u>1990</u>	<u>Average</u>
Total hunters checked	11	-27	-92
Total hours hunted	11	-76	-99
Huns per hunter (complete hunts)	0.55		-72
Huns bagged per 100 hours	55		+38
Average hours per hunter-day (complete hunts)	1	-67	-78
(complete hunts) Hours hunted per Hun bagged (complete hunts)	1.83		-85

Field bag check data submitted in 1991 was for Box Elder and Cache counties only. Many of these hunters are hunting sagegrouse, but Huns are often found in the same areas. Sample sizes were too small to derive meaningful conclusions.



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100 Hr Birds/ 327 327 327 1 t 1 Vehicle Horse Walk Total ŧ 4 Hours of Effort -1 5 2 3 1 1 14 Ż 1 Young/ . Vehicle_ 100 Adults Miles I 1 1 1 793 793 5 1 ł 1 Young Total 119 119 119 1 1 ł 1 1 NOT APPLICABLE Adalts NOT APPLICABLE NOT APPLICABLE Total 3 2 15 t 1 1 1 Adults w/o Young 1 1 4 Adults Young Mixed Young 61 <u>\$</u> 9 1 & Adults 3 12.50 Mean Brood 12.50 12.50 Table 1. Hungarian partridge summer inventory, 1991. I ł 1 1 Adults Young ŝ 8 2 1 Distinct Broods 80 œ 1 1 1 1 1 1 1 t œ **REGIONAL TOTALS REGIONAL TOTALS REGIONAL TOTALS REGIONAL TOTALS REGIONAL TOTALS** Northeastern Region Southeastern Region Region and STATE TOTALS Northern Region Southern Region County **Central Region** Washington Box Elder Salt Lake Duchesne San Juan Wasatch Carfield Sanpete Morgan Daggett Summit Weber leaver Wayne Carbon Emery Cache onele Millard Uintah Davis Sevier Grand Rich Juab Kane linte Vinte Utah 82

dts, 1981-91.
00 adults,
e young per 1
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Hungarian
Trend of
<b>Fable 2.</b>

Conney         1981         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         1983         <	Region and					,	Year						Average
In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region         In Region <t< th=""><th>County</th><th>1981</th><th>1982</th><th>1983</th><th>1984</th><th>1985</th><th>1986</th><th>1987</th><th>1988</th><th>1989</th><th>1990</th><th>1661</th><th>1980-90</th></t<>	County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1661	1980-90
Inter         61         490         i         i         60         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i         i	Northern Region												
1     2     2     2     2     40     43     2       1     2     2     2     2     2     2     2     2       1     2     30     2     2     2     2     2     2       NALI NOTAS     60     400     31     43     40     73     5       NALI NOTAS     60     400     -     -     2     -     2       Region     -     -     -     -     -     -     -     -       NALI NOTAS     60     400     -     -     -     -     -     -       NALI NOTAS     -     -     -     -     -     -     -     -     -       NAL NOTAS     -     -     -     -     -     -     -     -     -     -       NAL NOTAS     -     -     -     -     -     -     -     -     -       A     -     -     -     -     -     -     -     -     -     -       NAL NOTAS     -     -     -     -     -     -     -     -     -       A     -     -     -     -     - <t< td=""><td>Box Elder</td><td>671</td><td>409</td><td><b>400</b></td><td>- 1</td><td>ł</td><td>450</td><td>569.</td><td>307</td><td>1</td><td>396</td><td>561</td><td></td></t<>	Box Elder	671	409	<b>400</b>	- 1	ł	450	569.	307	1	396	561	
700     300     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -     -	Cache	1	ł	1	1	ł	;	I	400	ł	433	· . 1	
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Region and			Region and		I	Year						Average
County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1661	1981-90
Northern Region												
Box Elder	12.00	11.25	10.67	1	1	18.00	11.88	8.60	8.50	8.25	12.50	
Cache	1	ł	:	ı	ı	ł	I	:	1	6.00	1	
Davis	I	1	ı	ł	1	1	ł	;	:	ł	ł	
Morgan	1	1	1	1	I	1	1	I	1	1	I	
Rich	6.0	I	I	ł	:	1	ı	1	1	<b>I</b>	ı	
Summit	1	1	1	1	1	I	1	1	1	ı	1	
Weber	1	I	1	1	I	ı	1	,	1	1	1	
REGIONAL TOTALS	10.80	11.25	10.67	1	ł	18.00	11.88	8.60	8.50	8.90	12.50	11.08
<b>Central Region</b>												
Jush	1	ı	1	ł	1	ı	ł	1	1	1	1	
Salt Lake	1	1	t	1	;	t	1	1	:	I	ı	
Sanpete	I	1	1	:	ı	1	1	I	1	ł	I	
Tonele	:	1	1	1	ł	1	ı	ı	ł	1	1	
Utah	1	1	1	1	1	1.	ı	1	ł	I	ı	
Wasatch	1	1	1	I	1	4.00	1	6.4	,	•	1	
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Millard												
Pinte												
Sevier												
Washington												
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Daggett												
Duchesne				NOT APPLICABLE	ICABLE							
Uintah												
REGIONAL TOTALS												
Southeastern Region												
Carbon												
Emery				NOT APPLICABLE	<b>ICABLE</b>							
Grand												
San Juan												
<b>REGIONAL TOTALS</b>												
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County Northera Region Box Elder	1981	1003										- P
Northera Region Box Elder		1001	1983		1985	1986	1987	1988	1989	1990	1991	1981-90
Box Elder			-									
-	570	144	67	1	0	96	561	438	;	529	327	
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Davis	ı	1	ł	t	1	1	ţ.	1	ł	I	ł	
Morgan	I	:	I	ŀ.	ł	ł	I	1	t	I	I	
Rich	1	ł	I	:	1	ł	I	1	1	1	I	
Summit	ł	:	ı	1	1	ł	1	1	1	ł	1	
Weber	1	1	1	1	ł	1	ł	I	I	ł	ł	
REGIONAL TOTALS	639	144	67	1	0	50	435	240	88	517	327	242
Central Region												
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Wasatch	1	I	1	:	ł	500	1	500	1	3	1	
REGIONAL TOTALS	1	1	1	1	1	500	1	500	1	;	1	500
Southern Region												
Beaver												
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Kane				NOT APPLICABLE	ICABLE							
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Duchesne				NOT APPLICABLE	ICABLE		,					
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REGIONAL TOTALS												
Southeastern Region												
Carbon												
Emery				NOT APPLICABLE	ICABLE							
Grand												
San Juan												
REGIONAL TOTALS												
STATE TOTALS	565	144	61	1	0	60	435	248	88	517	327	255

Table 4. Trend of Hungarian partridge observed per 100 hours, 1981-91.

EGION AND COUNTY	SAMPLE SIZE**	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	& OF PRESSURE	% OF HARVEST
ORTHERN REGION						
BOX ELDER	100	5,358	5,445	1.02	64.04	73.82
CACHE	34	1,443	1,235	0.86	17.26	16.75
DAVIS	1	34	0	0.00	0.42	0.00
MORGAN	2	34	0	0.00	0.42	0.00
RICH	10	347	469	1.35	4.16	6.37
SUMMIT	0	0	0	0.00	0.00	0.00
WEBER	5	260	104	0.40	3.12	1.42
EGIONAL TOTALS	152	7,480	7,254	0.97	89.40	98.35
ENTRAL REGION			-			
JUAB**	0	0	0	0.00	0.00	0.00
SALT LAKE**	0	0	0	0.00	0.00	0.00
SANPETE**	0	0	0	0.00	0.00	0.00
TOOELE	4	765	17	0.02	9.15	0.24
UTAH**	. <b>1</b>	17	0	0.00	0.21	0.00
WASATCH**	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	5	782	17	0.02	9.36	0.24
SOUTHERN REGION						
BEAVER**	1	17	0	0.00	0.21	0.00
GARFIELD**	Ö	0	0	0.00	0400	0.00
IRON**	0	0	0	0.00	0.00	0.00
KANE * *	0	0	0	0.00	0.00	0.00
MILLARD**	0	0	0	0.00	0.00	0.00
PIUTE**	0	0	0	0.00	0.00	0.00
SEVIER**	0	0	0	0.00	0.00	0.00
WASHINGTON**	0	0	0	0.00	0.00	0.00
WAYNE**	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	1	17	0	0.00	0.21	0.00
NORTHEASTERN REG				2.2.2		
DAGGETT**	2	69	86	1.25	0.83	1.18
DUCHESNE**	1	17	17	1.00	0.21	0.24
UINTAH**	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	3	86	104	1.20	1.04	1.42
SOUTHEASTERN REG	-		_		·	
CARBON**	o	0	0	0.00	0.00	0.00
EMERY * *	0	0	. 0	0.00	0.00	0.00
GRAND * *	0	0	0	0.00	0.00	0.00
SAN JUAN**	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	0	0	0	0.00	0.00	0.00
UNKNOWN	0	0	0	0.00	0.00	0.00
STATE TOTALS	161	8,367	7,376	0.88	100.00	100.00

Table 5. Summary of Hungarian partridge hunter success and distribution of harvest

.

* Total hunter-trips from questionnaire returns. ** Closed to Hungarian partridge hunting in 1991.

Region and					Year			
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region								
Box Elder	0.44	0.25	0.60	1.28	0.95	.0.62	1.11	1.02
Cache	0.15	2.00	0.00	1.05	0.50	0.94	0.86	0.86
Davis	0.00	0.00	0.00	0.00	0.00	2.67	0.00	0.00
Morgan	0.00	0.00	0.00	0.67	0.00	1.33	0.00	0.00
Rich	0.00	0.00	0.00	1.50	0.00	0.00	2.13	1.35
Summit	0.00	0.00	0.00	2.00	3.00	0.00	0.00	0.00
Weber	1.00	0.00	0.00	1.25	1.17	1.00	1.00	0.40
REGIONAL TOTALS	0.41	0.26	0.59	1.23	0.89	0.67	1.02	0.97
<u>Central Region</u>								
Juab	0.00	0.00	0.00	0.30	0.00*	0.00*	0.00*	0.00
Salt Lake	0.50	0.50	0.00	0.00	0.09*	0.67*	0.00*	0.00
Sanpete	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00*	0.00
Tooele	0.00	0.46	0.00	0.00	0.33	0.47	0.46	0.02
Utah	2.00	0.00	0.00	0.33	0.31*	0.00*	0.00*	0.00
Wasatch	1.00	1.50	0.00	0.00	0.00*	0.00*	0.00*	0.00
REGIONAL TOTALS	0.55	0.48	0.00	0.20	0.24	0.41	0.40	0.02
Southern Region								
Beaver	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00
Garfield	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00
Iron	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00
Kane	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00
Millard	0.00	0.00	2.00	0.00	0.00*	0.00*	0.00*	0.00
Piute	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00
Sevier	0.00	0.00	0.20	2.00	0.00*	0.00*	3.00*	0.00
Washington	0.00	0.00	0.00	0.00	2.14*	0.00*	0.00*	0.00
Wasatch	1.00	0.00	0.00	0.00	0.00*	0.00*	0.00*	0.00
REGIONAL TOTALS	0.55	0.00	0.78	1.33	2.14	0.00	0.60	0.00
Northeastern Regi								
Daggett	0.00	1.00	0.00	0.00	0.00*	0.00*	0.00*	1.25
Duchesne	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	1.00
Uintah	0.00	0.00	0.00	0.00	0.00	1.00*	0.00*	0.00
REGIONAL TOTALS	0.00	0.00	0.50	0.00	0.00	0.00	0.00	1.20
Southeastern Regio			0.00	0.00		0.00		<u> </u>
	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00
Carbon	0.00	0.00	0.00	0.00	1.00*	0.00*	0.00*	0.00
Emery		0.00	0.00	0.00	0.00	0.00*	0.00*	0.00
Grand	0.00							
San Juan	0.00	0.00	0.00	0.00	0.00*	1.50*	0.00*	0.00
REGIONAL TOTALS	0.00	0.00	0.00	0.00	1.00	1.50	0.00	0.00
Unknown Counties	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
STATE TOTALS	0.41	0.31	0.57	1.09	0.82	0.65	0.97	0.88

Table 6. Summary of Hungarian partridge bagged per hunter-day by region and county, 1984-91.

*Closed Season

Region and					Year			<u> </u>
County	1984	1985	1986	1987	<u>    1988    </u>	1989	1990	<u> 1991</u>
<u>Northern Region</u>								
Box Elder	79.04	60.34	91.14	80.25	78.86	76.20	60.80	73.82
Cache	2.94	5.94	0.00	9.87	6.03	8.47	31.01	16.75
Davis	0.00	0.00	0.00	0.00	0.00	4.23	0.00	0.00
Morgan	0.00	0.00	0.00	0.85	0.00	2.12	0.00	0.00
Rich	0.00	0.00	0.00	1.28	0.00	0.00	5.17	6.37
Summit	0.00	0.00	0.00	0.85	2.26	0.00	0.00	0.00
Weber	8.90	0.00	0.00	2.14	2.64	2.12	0.30	1.42
REGIONAL TOTALS	91.03	66.62	91.14	95.27	89.81	93.13	97.28	98.35
Central Region								
Juab	0.00	0.00	0.00	1.28	0.00*	0.00*	0.00*	0.00*
Salt Lake	1.47	2.97	0.00	0.00	0.37*	1.06*	0.00*	0.00*
Sanpete	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00*	0.00*
Tooele	0.00	18.10	0.00	0.00	1.88	3.70	1.82	0.24
Utah	5.96	0.00	0.00	0.42	1.88*	0.00*	0.00*	0.00
Wasatch	1.47	9.05	0.00	0.00	0.00*	0.00*	0.00*	0.00
REGIONAL TOTALS	8.90	30.27	0.00	1.71	4.15	4.76	1.82	0.24
Southern Region			· · · · · · · · · · · · · · · · · · ·					
Beaver	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00*
Garfield	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	
Iron	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	
Kane	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	
Millard	0.00	0.00	7.59	0.00	0.00*	0.00*	0.00*	
Piute	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	
Sevier	0.00	0.00	1.27	1.71	0.00*	0.00*	0.91*	0.00*
Washington	0.00	0.00	0.00	ō.oō	5.66*	0.00*	0.00*	
Wayne	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00*	0.00,
REGIONAL TOTALS	0.00	0.00	8.86	1.71	5.66	0.00*	0.91	0.00
Northeastern Reg			0.00		2.00	0.00	<u>V•_24</u>	0.00
Daggett	0.00	2.97	0.00	0.00	0.00*	0.00*	0.00*	1.18
Duchesne	0.00	0.00	0.00	0.00	0.00*	0.00*	0.00*	
Uintah	0.00	0.00	0.00	0.00	0.00	0.53*	0.00*	0.001
REGIONAL TOTALS	0.00	2.97	0.00	0.00	0.00	0.53	0.00	0.00
Southeastern Reg		2.71	0	0.00	0.00	0.33	_0.00	0.00
Carbon	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	0 00-
Emery	0.00	0.00	0.00	0.00	0.00	0.00*	0.00*	+
Grand	0.00	0.00	0.00	0.00	0.37	0.00*	0.00*	
San Juan	0.00	0.00	0.00	0.00	0.00		-	+
REGIONAL TOTALS	0.00	0.00	0.00			1.59*	0.00*	
REGIONAL TOTALS	0.00	0.00	0.00	0.00	0.37	1.59	0.00	0.00
Unknown counties	0.00	0.00	0.00	1.28	0.00	0.00	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 7. Percentage distribution of Hungarian partridge harvest by region and county, 1984-91.

1985			Year			
T 200	1986	1987	1988	1989	1990	1991
74.98	87.68	68.22	68.42	80.42	53.10	64.04
0.91	0.72	10.28	9.90	5.84	34.81	17.26
0.00	0.00	1.40	1.23	1.03	0.00	0.42
1.82	0.00	1.40	0.30	1.03	2.36	0.42
0.00	0.72	0.93	0.00	0.69	2.36	4.16
0.00	0.00	0.46	0.61	0.00	0.00	0.00
0.00	0.00	1.86	1.85	1.37	0.30	3.12
77.79	89.13	84.57	82.36	90.39	92.93	89.40
	07.13	04.3/	02.30			09.40
0 00	0.72		0.00+	0.00+	A 50+	0 00+
0.00		4.67	0.00*	0.00*	0.59*	0.00*
1.82	0.00	0.00	3.40*	1.03*	0.00*	0.00*
0.91	0.72	0.46	0.00*	0.00*	0.00*	0.00*
12.01	0.72	2.80	4.64	5.16	3.84	9.15*
2.77	1.44	1.40	4.95*	0.34*	0.00*	0.21*
1,82	0.00	0.00	<u>1.23*</u>	1.03*	0.00*	<u>0.00</u> *
19.45	3.62	9.34	14.24	7.56	4.43	9.36
0.00	0.72	0.00	0.00*	0.00*	1.18*	0.21*
0.00	0.00	0.00	0.00*	0.00*	0.00*	0.00*
0.00	0.00	0.00	0.00*	0.00*	0.00*	0.00*
0.00	0.00	0.00	0.00*	0.00*	0.00*	0.00*
0.00	2.17	0.00	0.00*	0.00*	0.00*	0.00*
0.00	0.00	0.00	0.00*	0.00*	0.00*	0.00*
0.00	3.62	0.93	0.00*	0.69*	0.30*	0.00*
0.00	0.00	0.46	2.16*	0.00*	0.00*	0.00*
0.00	0.00	0.00	0.00*	0.00*	0.00*	0.00*
0.00	6.52	1.39	2.15	0.69	1.48	0.21
0.00	0.52	<u>****//</u>		0.02		
0.91	0.00	0.00	0.00*	0.00*	0.00*	0.83*
0.00	0.00	0.00	0.30*	0.00*	0.00*	0.21*
0.00	0.00	0.00	0.00*		0.00*	
	0.72	0.00		0.34*		0.00*
1.82	0.72	0.00	0.29	0.34	0.00*	1.04
~ ~~	0.00	A AA	0.014	0.04*	<b>0</b> 00.	0 00
0.00	0.00	0.00	0.61*	0.34*	0.00*	0.00*
0.00	0.00	0.00	0.30*	0.00*	1.18*	0.00*
0.91	0.00	0.00	0.00*	0.00*	0.00*	0.00*
0.00	0.00	0.00	0.00*	0.69*	0.00	0.00*
0.91	0.00	0.00	0.92	1.03	1.18	0.00
0.00	0.00	4.67	0.00	0.00	0.00	0.00
100.00	100.00	100.00	100.00	100.00	100.00	100.00
				0.00 0.00 4.67 0.00 100.00 100.00 100.00 100.00		

Table 8. Percentage distribution of Hungarian partridge hunting pressure by region and county, 1984-91.

*Closed Season

	Total	Total	Hunter-Days	Huns Per	Huns Per
Уеаг	Hunters	Harvest	Afield	Hunter-Day	Hunter
1955	, <b></b>	-	-	-	0.39
1956	-	· _		-	0.89
1957	-	-	-	-	0.45
1958	-		-		1.34
<b>19</b> 59	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
965	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
968	6,935	17,089	16,674	1.02	2.46
.969	5,591	11,966	15,515	0.77	2.14
970	4,128	8,236	9,818	0.84	2.00
971	4,276	9,407	11,011	0.85	2.20
972	4,754	7,335	12,135	0.60	1.54
973	3,566	6,014	11,516	0.52	1.69
974	4,103	7,389	10,789	0.68	1.80
975	3,409	5,358	8,216	0.65	1.57
976	3,517	6,287	8,753	0.72	1.79
977	5,557	6,360	9,058	0.70	1.79
978	4,743	12,969	12,328	1.05	2.73
979	3,435	6,200	7,787	0.80	1.80
980	3,359	8,466	10,366	0.82	2.52
981	3,545	8,916	10,147	0.88	2.52
982	2,590	4,475	5,379	0.83	1.73
983	2,889	6,506	6,998	0.93	2.25
984	1,523	1,360	3,309	0.41	0.89
985	1,157	707	2,314	0.31	0.61
986	1,257	1,627	2,843	0.57	1.30
<b>98</b> 7	2,010	5,711	5,246	1.09	2.53
988	2,471	4,424	5,392	0.82	1.79
989	2,136	3,920	6,035	0.65	1.83
990	2,305	6,770	6,976	0.97	2,94
991	2,662	7,376	8,367	0.88	2.77
<b>Totals</b>					
1959-91)	117,549	252,918	292,408	-	_
verages				<b>_</b>	
(959-90)	3,590	7,673	8,876	0.82	2.03

Table 9. Statewide summary of Hungarian partridge harvest statistics, 1955-91.

Table 10. Hungarian partridge field bag check summary, 1991.

			All Hunts					<b>Complete Hunts</b>	lumts		
Reeion and	Total	Total	Total	Total	Birds/	Complete	Total	Total	Total	Birds/	Birds/
	Parties	Hunters	Hours	Birds	100 Hr	Hunts	Hunters	Hours	Birds	100 Hr	Hunter
Box Etder	31	88	91	<b>4</b>	51	9	11	11	Ŷ	22	0.55
Cache	1	1	1	1	1	1	1	ł	:	I	I
Davis	I	I	1	.1	:	I	t	I	:	I	:
Morgan	1	1	I	1	1	ł	I	:	I	1	ı
Rich	ł	1	ı	1	;	I	ł	ı	1	I	1
Summit	1	1	I	I	I	I	ł	ł	I	I	1
Weber	1	1	1	1	1	1	'	,	ľ	•	1
REGIONAL TOTALS	32	<b>0</b> 6	91	46	51	÷	=	=	ø	55	0.55
Central Region											
Juab	I	ł	I	I	ı	ł	1	<b>I</b> .	:	1	ı
Salt Lake	1	ı	1	1	I	I	I	1	1	1	
Sanpete	1	ł	1	1	1	I	ı	I	I	I	1
Tooele	ł	:	ı	ı	1	I	ı	1	ı	1	1
Utah	1	1	1	1	I	I	1	I	ı	I	1
Wasatch	1	1	1	1	1	1	!	1	1	-	ı
REGIONAL TOTALS	1	1	1	1	1	1	1	'	1	'	1
Southern Region											
Beaver									,		
Garfield											
Iron											
Kane				NOT APPLICABLE	LICABLE						
Millard											
Piute											
Sevier											
Washington										·	
Wayne											
REGIONAL TOTALS											
Northeastern Region											
Daggett											
Duchesne				NOT APP	NOT APPLICABLE						
Uintah											
REGIONAL TOTALS											
Southeastern Region											
Carbon											
Emery			-	NOT APP	NOT APPLICABLE						
Grand											
San Juan											
<b>REGIONAL TOTALS</b>											
STATE TOTALS	32	90	91	Ş	51	3	=	=	•	55	0.55
		I									

100 Hr Birds/ 0.55 0.55 0.55 ţ. I Hanter **Birds/** 3 ł 5 100 Hr Bidel 1 1990 Binds/ Hunter 1 ł 1 100 Hr Birds/ 9.50 9.50 9:20 1 ł 1 1 ł t 1<u>98</u>01 Hunter Birds/ 181 181 181 1 1 1 ł 
 Table 11. Hungarian partridge hunter success trend as determined by field hag check, 1986-91.

 1986
 1987
 1988
 Hunter Birds/ 1.04 2 1.04 ł ł 100 Hr **Birds/** NOT APPLICABLE NOT APPLICABLE NOT APPLICABLE 34 2 ł ł 2 Hunter Hids/ <u></u> 8 1.69 1 1 100 Hr Birds/ I Э 3 Hunter Binds/ 0.16 0.16 0.16 1 1 Т 100 Hr Birds/ • **REGIONAL TOTALS REGIONAL TOTALS** REGIONAL TOTALS **REGIONAL TOTALS REGIONAL TOTALS** Northeastern Region Southeastern Region Region and Northern Region STATE TOTALS County Southern Region **Central Region** Washington **Box Elder** Salt Lake Duchesne Wasatch Garfield San Juan Morgan Sampete Daggett Summit Carbon Weber Tooele Cache Wayne Davis Beaver Vintah Emery Millard Utah jevier Grand Rich Juab Kane 222 Plufe

# WILD TURKEY

## **SUMMARY**

#### <u>Merriam's Turkeys</u>

Turkey populations remain high and well above the 22 year average and percent success average. The percent of hunters observing turkeys declined in 1991, but remains 18 percent above average. Merriam's populations appear to be down somewhat since 1984.

Hunter success and turkey observation data for the 1991 spring season indicated that the East Zion area had a better year than 1990. Total harvest and percent success increased 31 and 50 percent respectively. Thirty-eight birds were reported harvested for this unit. Harvest statistics indicate that the Boulder and LaSal populations increased slightly. The remaining units of the state were closed to hunting. A fall turkey hunting season was not held anywhere in 1991.

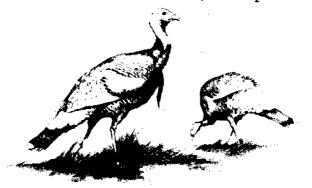
Spring hunting pressure was up again in 1991 and was well above average. Complaints about hunters interfering with each other due to over-crowding were made by 5 of 432 voluntary responses. Three percent of the hunters complained about conflicts with bear hunters. To reduce opening weekend pressure, the season opened Wednesday, May 1, rather than the Saturday nearest May 1. The popularity and demand for turkey hunting in Utah is very great.

Hunter success was up (10 percent) from the previous year. A total of 59 turkeys were harvested in the spring hunt of 1991 compared to 52 taken in 1990 and 59 in 1989 and 66 in 1988. Observations of turkeys remained higher than average in 1991, but it dropped on the La Sal and East Zion areas.

This was the fourth year of drought in southern Utah and may be adversely affected brood survival.

### Rio Grande Turkeys

In 1991, Utah sportsmen were given a limited entry opportunity to harvest Rio Grande turkeys. Four units were designated as limited entry for Rio Grand turkeys: 1) Marysvale, 2) New Harmony, 3) Pine Valley and 4) Tropic. Five permits were available for each unit with a \$25.00 permit fee required to



TURKEYS

participate in the hunt. Hunters were allowed to harvest 1 male bird. One hundred fifty-nine sportsmen applied for the 20 available permits. A random drawing was held to determine successful applicants. Odds for drawing in each area were as follows: 1) Marysvale 1:10, 2) New Harmony 1:5, 3) Pine Valley 1:8 and 4) Tropic 1:9.

Limited brood count data is exhibited in Table 5. Harvest statistics for the limited entry hunts are found in Table 6. Eighteen hunters averaged 3.95 days-afield each to harvest a total of 11 turkeys. Three of the harvested birds were yearlings and 8 were adults. Sixty-one percent of the hunters afield harvested a bird.

Overall, participating hunters felt that the hunt offered a quality experience. There were a couple of complaints about access to private property and the season being open too late in the year.

As other Rio Grande populations continue to grow throughout the state, more limited entry opportunities will be provided.

#### Harvest

### Spring Merriam's Gobbler Season

Results of the 1991 spring season are shown in Table 1 of this section. The trend of these data since 1968 is shown in Table 2 and Figures 1 and 2. Specific harvest information is listed in Table 3. Statewide summary of fall hunt statistics is in Table 4. The 1991 spring season compared to 1990 and the previous 22-year average follow:

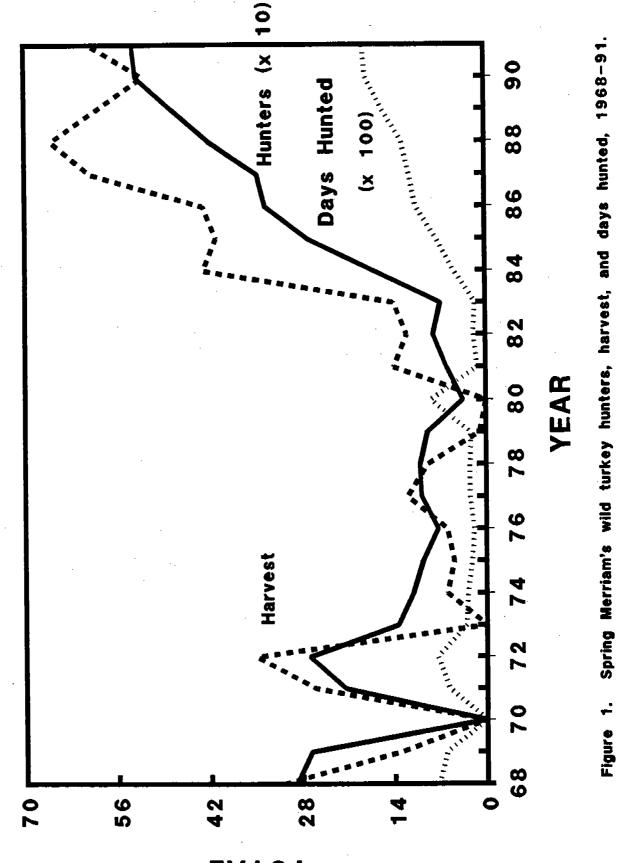
		Percent	<u>change from</u>
	1991	1990	Average
Permits sold	587	+1	+156
Hunters afield	532	0	+158
Turkeys harvested	59	+13	+136
Hunter-days afield	1,792	-1	+202
Percent hunter success	11	+10	0
Turkeys bagged per hunter-day	0.03	0	-25
Percent of hunters who observed			
turkeys	49	-5	+18

Again, permit sales and hunters afield increased from 1990 and were well above average. Total harvest increased (from 52 in 1990 to 59 in 1991), which is thirteen percent below the previous year. Hunter success rates increased slightly from 1990 and remained the same as the 22-year average. The proportion of hunters who reported having observed turkeys was 26 percent above average. In 1991, the Boulder Unit accounted for 45% of the hunting pressure based on hunter days afield. The East Zion unit accounted for only 38% of the hunting pressure. However, the East Zion Unit accounted for 64% of the statewide harvest. Reports of heavy snowfall on the East Zion unit during the season may have shifted hunting pressure onto other units.

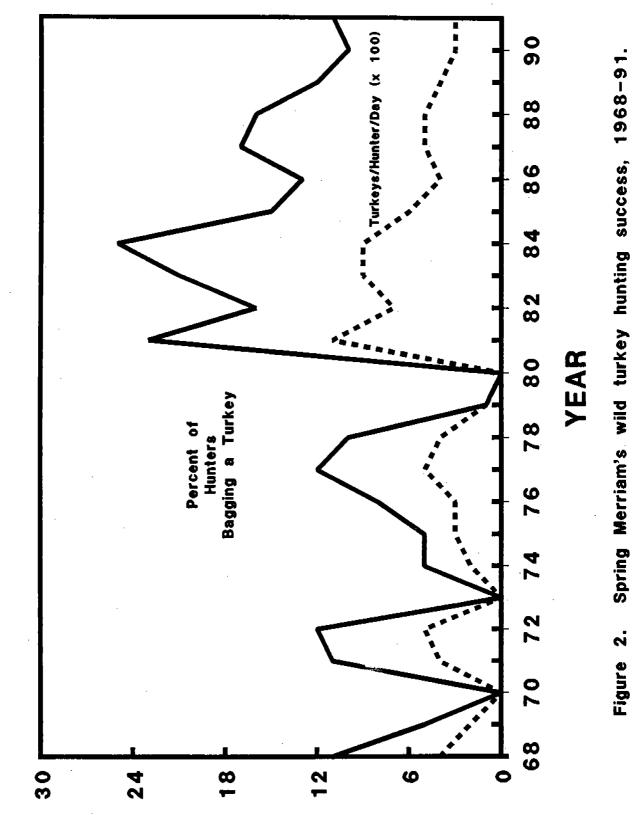
The trend of spring Merriam's turkey harvest statistics is shown in Figures 1 and 2. Nine percent of the hunters (34) used bows and the remainder reported using shotguns. Twelve turkeys were reported crippled and not recovered. Five of 48 known kills were suspected of being females and another fourteen are suspected of being jakes.

Thirty-five percent of the harvest (17 of 48) occurred on opening day (Wednesday) 14 percent the following day, 18 percent the first weekend and 6 percent the last weekend of the hunt. Fourteen percent of the harvest occurred on weekends compared with 25 percent last year (1990) and 33 percent in 1989 and 44 percent in 1988. It appears that opening the season on May 1 instead of Saturday nearest May 1, is doing what was intended by spreading harvest and pressure out over the season.

Sixteen of 432 hunters commented that the spring hunting season should be opened 1-3 weeks earlier. Fourteen commented that they would like more turkeys. Four suggested that there's not enough access to private property. Five complained about too many hunters. Turkey hunters were also questioned about interference from bear hunters using hounds during the 1991 hunt. Three of 432 hunters complained of interference in previous years. Two hunters from the Boulder Mountain unit complained of interferences that occurred once. Three hunters from the LaSal Mountains unit complained of a total of 5 interferences. Five hunters from the East Zion unit complained of a total of 8 interferences. Overall, interferences from bear hunters was reported by only three percent of the turkey hunters afield.



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TURKEYS PER HUNTER AND PER DAY

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	Elk Ridge	East Zion	lion	Boulder	٤.	LaSal		Beaver		Pine Valley	Mixed Units	Units	STATE	STATE TOTALS
Data	Rep't Calc	c Rep't	Calc	Rep't	Calc	Rep't	Calc	Rep't	Calc	Rep't Calc	Rep't*a	a *a	Rep't	Calc
Permits Sold		1											587	
No Httnfs													42	
lfunters Afield	C	167	204	189	231	6L	76	C		Ч	13	16	435	532
Hunter-Days	<u>ر</u>	558	682	653.	66L	254	311	. <b>_</b>			47	57	1,465	1,792
Turkeys Bagged	0	Ю	38	15	18	6	7	0	-	¥	•	4	48	59
Percent Success	S	19	:	œ	ł		1	S		-	53	I	11	I
Turkeys Bagged Per	ы							E		T				ī
llunter-Day	٩	0.06	ł	0.02	I	0.01	:	Ũ	-	E	0.06	I	0.03	ł
Reported Crippling Loss		S	1	S	I	6	I			<b>A</b>	÷	ł	12	1
(Loss/100 Bagged)	S	16	ł	33	I	100	ł	S	-		¢	1	25	ı
Turkeys Observed	Ъ	718	I	548	I	8	1	E		ы	70	. 1	1,349	
Gobblers	<	151	ł	123	I	61	ļ	<		z	61	1	299	
liens	S	444	ł	299	1	46	I	S		F	41	1	789	ł
Unidentified	0	121	ł	128	t	19	1	C	-	æ	10	ł	268	I
Number of Hunters	Z							Z		۲				
Who Saw Turkeys		16	1	92	ł	28	1				Q	I	211	I
Percent of Hunters														
Who Saw Turkeys		54	1	49	I	35	I				69	1	\$	:

()Hunters Hunted More than One Area; Data Included In Specific Area Hunted.

a Figures Do Not Sum Because These Hunters Hunted Another Unit As Their Primary Hunting Area And Were Not Counted Twice. Hunters Afield and Days By Unit Were As Follows: Boulder (10-36), All Ten of These Were From East Zion As Their Primary Units; East Zion (1-5), From Boulder; LaSal (2-6), From East Zion.

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Table 2. Summar	ry of Meri	rriam's turk	ey harvest st	Summary of Merrriam's turkey harvest statistics for spring gobbler seasons, 1967-91.	gobbler seaso	ns, 1967-91.		
		Hunters	Total	Hunter-Days	Percent	<b>Turkeys Per</b>	Percent of Hunters	Total
Hunting Unit	Year	Afield	Harvest	Afield	Success*	Hunter-Day	<b>Observing Turkeys</b>	Permits**
EAST ZION	1967	24	6	59	38	0.15	58	
	1968	130	16	364	. 11	0.04	48	
	1969	77	4	210	9	0.02	35	-
	1970		-		NO SEASON			
	1971	106	14	272	· 12	0.05	38	
	1972	113	20	321	14	0.06	47	
	1973	43	0	96	0	0.00	14	
	1974	34	7	73	7	0.03	23	
	1975	29	e.	42	æ	0.06	33	
,	1976	31	ŝ	74	16	0.05	38	
	1977	47	9	117	13	0.05	8	
	1978	36	4	80	13	0.06	56	
	1979	35	1	95	4	0.01	11	
	1980	35	0	84	•	0.00	11	
	1981	39	13	94	32	0.14	68	
	1982	62	11	134	18	0.08	70	
	1983	<b>\$</b>	12	122	25	0.10	68	
	1984	108	30	313	72	0.09	70	
	1985	129	24	368	19	0.07	09	
	1986	173	31	508	18	·90°0	68	
	1987	153	<b>4</b>	500	26	0.08	74	
	1988	221	4	680	20	0.06	<b>45</b>	
	1989	235	35	799	15	0.04	<b>6</b> 6	
	1990	250	29	850	12	0.03	60	
	1991	204	38	682	19	0.06	54	

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Hunting Unit         Hunters         Total         Hunter-Days         Percent         Turkeys         Percent	Table 2. (Continued)	ueuy							
Var         Afield         Harvest         Afield         Jarvest         Afield         Jarvest         Afield         Success         Hunter-Day         Observing Turkeys           1966         11         2         43         12         0.05         75           1968         134         15         330         10         4         0.02         16           1971         27         1         6         300         4         0.02         16           1971         27         1         64         0.02         13         28           1973         22         0         56         0         0.00         5         13           1973         16         1         34         7         0.04         8         0.03           1974         23         0         55         0         0.00         16         1           1975         16         1         34         7         0.04         8         14           1975         16         1         34         7         0.04         8         14           1976         13         0         0         0.00         0         14			Hunters	Total	Hunter-Days	Percent	<b>Turkeys Per</b>	Percent of Hunters	Total
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Hunting Unit	Year	Afield	Harvest	Afield	Success•	Hunter-Day	<b>Observing Turkeys</b>	Permits**
1968         134         15         330         10         0.05           1970         141         6         300         4         0.02           1971         27         1         64         4         0.02           1971         27         1         64         4         0.02           1972         22         0         52         0         0.03           1973         22         0         56         0         0.03           1975         16         1         34         7         0.04           1975         16         1         34         7         0.04           1976         12         0         25         0         0.00           1973         16         1         34         7         0.04           1976         12         0         25         0         0.01           1973         5         0         13         0         0.01           1981         16         1         31         0         0.01           1982         5         0         10         0         0.01           1983         6         1 <td>BOULDER</td> <td>1967</td> <td>17</td> <td>7</td> <td><b>4</b>3</td> <td>12</td> <td>0.05</td> <td>75</td> <td></td>	BOULDER	1967	17	7	<b>4</b> 3	12	0.05	75	
141     6     300     4     0.02       27     1     64     4     0.02       27     1     64     4     0.02       22     0     55     0     9.00       16     1     34     7     0.04       12     0     55     0     0.00       6     0     13     0     0.00       16     1     31     0     0.00       5     0     13     0     0.00       6     1     31     0     0.00       5     0     10     0     0.00       6     1     31     0     0.00       7     0.01     10     0     0.00       5     0     10     0     0.00       6     1     31     0     0.01       73     7     20     0.11     10       73     7     10     0.02       123     8     354     7     0.03       138     13     417     10     0.03       138     13     417     10     0.03       138     13     8     0.03       138     13     8     0.03 <td>MOUNTAINS</td> <td>1968</td> <td>134</td> <td>15</td> <td>330</td> <td>10</td> <td>0.05</td> <td></td> <td></td>	MOUNTAINS	1968	134	15	330	10	0.05		
27       1       64       4       0.02         27       1       64       4       0.02         22       0       52       0       0.03         16       1       34       7       0.03         12       0       55       0       0.00         6       0       13       0       0.00         16       1       31       0       0.00         5       0       13       0       0.00         6       1       31       0       0.00         5       0       10       0       0.00         5       0       10       0       0.00         5       0       10       0       0.00         5       0       10       0       0.00         5       1       31       10       0.01         7       187       10       0       0.01         73       7       10       0.02       0.03         134       11       363       7       0.03         138       13       31       11       363       7         138       13       <		1969	141	9	300	4	0.02	19	
27       1       64       4       0.02         22       0       52       0       0.03         16       1       34       7       0       0.03         16       1       34       7       0       0.00         16       1       34       7       0       0.04         16       1       34       7       0.04       0.00         16       1       31       0       0       0.00         5       0       13       0       0       0.00         5       0       10       0       0       0.00         5       0       10       0       0.00       0.00         5       0       10       0       0.00       0.00         5       0       10       0       0.00       0.00         33       9       85       27       0.11       17         73       11       363       7       2.0       0.11         134       11       363       7       0.03       0.03         138       13       417       10       0.03       0.03         138 <td></td> <td>1970</td> <td></td> <td></td> <td></td> <td>NO SEASON</td> <td></td> <td>9 1</td> <td></td>		1970				NO SEASON		9 1	
42       3       107       8       0.03         122       0       55       0       56       0       0.03         16       1       34       7       0.04       0.00       0.00         12       0       55       0       13       0       0.00       0.00         16       1       31       0       13       0       0.00       0.00         5       0       10       13       0       0.00       0.00       0.00         5       0       10       0       0       0       0       0.01       0         5       0       10       0       0       0       0       0.01       0       0.01       0       0.01       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0		1971	27	1	64	4	0.02	13	
22       0       52       0       0.00         16       1       34       7       0.04         12       0       25       0       0.00         6       0       13       0       0.00         16       1       31       0       0.00         5       0       13       0       0.00         6       1       31       0       0.00         5       0       10       0       0.00         6       1       31       0       0.00         5       0       10       0       0.00         6       1       2       0       0.01         73       7       20       0.11         73       7       20       0.11         73       7       20       0.11         73       11       363       7       0.03         134       11       363       7       0.03         138       13       417       10       0.03         138       13       33       8       0.03         138       13       13       10       0.03		1972	42	÷	107	×	0.03	28	
1       23       0       56       0       0.00         16       1       34       7       0.00       0.00         6       0       13       0       0.00       0.00         16       1       31       0       0.00       0.00         5       0       10       0       0       0.00         6       1       31       0       0.00       0.00         5       0       10       0       0       0.00         6       1       31       0       0.00       0.00         5       0       10       0       0       0.00         6       1       7       20       0.11       33         33       9       85       27       0.11       33         33       9       85       27       0.11       33         105       11       363       7       0.03       33         138       13       31       417       10       0.03         138       13       31       417       10       0.03         138       11       585       6       0.03       303 </td <td></td> <td>1973</td> <td>22</td> <td>0</td> <td>52</td> <td>•</td> <td>0.00</td> <td>Q</td> <td></td>		1973	22	0	52	•	0.00	Q	
16       1       34       7       0.04         6       0       13       0       0.00         5       0       13       0       0.00         5       0       10       0       0.00         5       0       10       0       0.00         6       1       31       0       0.00         5       0       10       0       0.00         7       0.10       0       0       0.00         7       0.10       0       0       0.00         6       1       7       20       0.11         73       7       187       10       0.04         123       8       354       7       0.03         134       11       363       7       0.03         138       13       417       10       0.03         138       13       138       8       0.03         138       13       18       10       0.03         138       13       13       10       0.03         138       13       13       8       0.03         138       13 <td< td=""><td></td><td>1974</td><td>23</td><td>0</td><td>56</td><td>0</td><td>0.00</td><td>25</td><td></td></td<>		1974	23	0	56	0	0.00	25	
12       0       25       0       0.00         6       0       13       0       0.00         5       0       10       0       0.00         5       0       10       0       0.00         5       0       10       0       0.00         5       0       10       0       0.00         6       1       31       0       0.00         6       1       7       2.0       0.17         33       9       85       2.7       0.11         73       7       187       10       0.04         73       7       187       10       0.03         123       8       354       7       0.03         134       11       363       7       0.03         138       13       13       11       363       6       0.03         138       13       13       13       10       0.03       10         231       18       79       8       0.03       10       10         231       18       79       8       0.03       10       10       10     <		1975	16	1	34	7	0.04	œ	
6       0       13       0       0.00         5       0       10       0       0.00         5       0       10       0       0.00         5       0       10       0       0.00         5       0       10       0       0.00         6       1       7       20       0.17         6       1       7       20       0.17         33       9       85       27       0.11         73       7       187       10       0.04         134       11       363       7       0.03         134       11       363       7       0.03         138       13       417       10       0.03         138       13       585       6       0.03         138       18       79       8       0.02         231       18       79       8       0.02		1976	12	•	25	0	0.00	10	
16     1     31     0     0.00       5     0     10     0     0     0.00       6     1     7     20     0.17       6     1     7     20     0.17       33     9     85     27     0.11       73     7     187     10     0.04       73     7     187     10     0.04       123     8     354     7     0.03       134     11     363     7     0.03       134     11     383     8     0.03       138     13     417     10     0.03       138     11     585     6     0.03       231     18     799     8     0.03		1977	9	0	13	0	0.00	40	
5     0     10     0     0.00       6     1     7     NO SEASON       6     1     7     NO SEASON       33     9     85     27     0.17       33     9     85     27     0.11       73     7     187     10     0.04       123     8     354     7     0.03       123     8     353     7     0.03       134     11     363     7     0.03       138     13     417     10     0.03       138     13     417     10     0.03       231     18     79     8     0.03       231     18     799     8     0.02		1978	16	1	31	0	0.00	14	
NO SEASON         NO SEASON           6         1         7         NO SEASON           6         1         7         NO SEASON           33         9         85         27         0.17           73         7         187         10         0.04           73         7         187         10         0.04           123         8         354         7         0.01           123         8         354         7         0.02           123         8         353         7         0.03           134         11         363         7         0.03           138         13         417         10         0.03           138         13         417         10         0.03           231         18         79         8         0.02           231         18         799         8         0.02		1979	ŝ	0	10	0	0.00	•	
6       1       7       20       0.17         33       9       85       27       0.17         33       9       85       27       0.11         73       7       187       10       0.04         73       7       187       10       0.04         123       8       354       7       0.04         123       8       353       7       0.02         134       11       363       7       0.03         134       11       383       8       0.03         138       13       417       10       0.03         231       18       79       8       0.02         231       18       799       8       0.02		1980			-	NO SEASON			
6     1     7     20     0.17       33     9     85     27     0.11       73     7     187     10     0.04       73     7     187     10     0.04       123     8     354     7     0.02       123     8     354     7     0.02       124     11     363     7     0.03       134     11     383     8     0.03       138     13     417     10     0.03       138     13     55     6     0.02       231     18     799     8     0.02		1981			-	NO SEASON			
6       1       7       20       0.17         33       9       85       27       0.11         73       7       187       10       0.04         73       7       187       10       0.04         73       8       354       7       0.02         123       8       354       7       0.02         134       11       363       7       0.03         134       11       383       8       0.03         138       13       417       10       0.03         138       13       417       10       0.03         231       18       799       8       0.02         231       18       799       8       0.02		1982			[	NO SEASON			•
33     9     85     27     0.11       73     7     187     10     0.04       123     8     354     7     0.02       105     11     363     7     0.03       134     11     383     8     0.03       138     13     417     10     0.03       138     13     417     10     0.03       231     18     79     8     0.02		1983	9	1	7	20	0.17	40	
73     7     187     10     0.04       123     8     354     7     0.02       105     11     363     7     0.03       134     11     383     8     0.03       138     13     417     10     0.03       138     13     417     10     0.03       138     13     55     6     0.02       231     18     799     8     0.02		1984	33	9	85	27	0.11	52	
123     8     354     7     0.02       105     11     363     7     0.03       134     11     383     8     0.03       138     13     417     10     0.03       138     13     417     10     0.03       135     11     585     6     0.02       231     18     799     8     0.02		1985	73	٢	187	10	0.04	46	·
105     11     363     7     0.03       134     11     383     8     0.03       138     13     417     10     0.03       138     13     417     10     0.03       138     11     585     6     0.02       231     18     799     8     0.02	-	1986	123	••	354	٢	0.02	44	
134     11     383     8     0.03       138     13     417     10     0.03       138     11     585     6     0.02       231     18     799     8     0.02		1987	105	11	363	L	0.03	4	
138     13     417     10     0.03       185     11     585     6     0.02       231     18     799     8     0.02		1988		11	383	÷	0.03	50	
185 11 585 6 0.02 231 18 799 8 0.02		1989		13	417	10	0.03	69	
231 18 799 8 0.02		1990		11	585	9	0.02	42	·
		1991	231	18	<b>66</b> L	ø	0.02	49	

Table 2. (Continued)	led)					-		
		Hunters	Total	Hunter-Days	Percent	<b>Turkeys Per</b>	Percent of Hunters	Total
Hunting Unit	Year	Afield	Harvest	Afield	Success*	Hunter-Day	<b>Observing Turkeys</b>	Permits**
LASAL	1967	9	0	16	•	0.00	33	
MOUNTAINS	1968	17	•	4	0	0.00	62	
	1969	39	9	102	6	0.03	24	
	1970				NO SEASON			
	1971	17	1	34	9	0.03	20	
	1972	50	3	129	7	0.03	29	
	1973	23	0	53	0	0.00	16	
	1974	20	0	<b>66</b>	0	0.00	11	
	1975	11	0	30	0	0.00	33	
	1976	<b>80</b>	0	25	0	0.00	14	
	1977	24	4	53	15	0.07	45	
	1978	32	7	78	7	0.03	38	
	1979	34	0	74	C	0.00	7	,
	1980				NO SEASON			
	1981	18	1	31	9	0.03	24	
	1982	18	1	50	9	0.02	35	
	1983	12	1	27	10	0.10	30	
	1984	24	₹	70	19	0.06	88	
	1985	12	10	194	14	0.05	42	
	1986	51	4	192	4	0.02	45	
	1987	74	9	218	6	0.03	50	
	1988	62	11	199	16	0.06	70	
	1989	104	11	352	90	0.03	41	
	1990	95	12	340	13	0.03	48	• •
	1661	97	7	311	¢,	0.01	35	

		Hunters	Total	Hunter-Days	Percent	<b>Turkeys Per</b>	Percent of Hunters	Total
Hunting Unit	Year	Afield	Harvest	Afield	Success*	Hunter-Day	<b>Observing Turkeys</b>	Permits**
BEAVED	. 291	ţ		i	ſ			
DEAVEN	1/41	17	7	54	×	0.04	<b>6</b> £	
MOUNTAINS	1972	17	7	53	13	0.04	20	ı
	1973	17	•	34	•	0.00	7	
	1974	1	0	-	0	0.00	0	
	1975	ŝ	0	7	0	0.00	•	
	1976	7	0	æ	0	0.00	0	
	1977	4	0	14	0	0.00	•	
	1978	7	0	7	0	0.00	92	
	1979			1	NO SEASON		;	
	1980			1	NO SEASON			
	1981			l	NO SEASON			
	1982			l	NO SEASON			
	1983			ſ	NO SEASON			
	1984			1	NO SEASON			
	1985			1	NO SEASON			
	1986			1	NO SEASON			
	1987				NO SEASON			
	1988			Ĩ	NO SEASON			
	1989			4	NO SEASON			
	1990				NO SEASON			
	1991			Ē	NO SEASON			

Table 2. (Continued)	ed)							
		Hunters	Total	Hunter-Days	Percent	<b>Turkeys Per</b>	Percent of Hunters	Total
Hunting Unit	Year	Afield	Harvest	Afield	Success*	Hunter-Day	<b>Observing Turkeys</b>	Permits**
<b>PINE VALLEY</b>	1971	23	4	92	15	0.04	70	
MOUNTAINS	1972	77	1	52	N)	0.02	42	
	1973	17	0	38	0	0.00	7	
-	1974	80	1	23	14	0.05	43	
	1975	9	0	12	0	0.00	0	
	1976		0	13	0	0.00	40	
	1977	7	0	7	0	0.00	0	
	1978	0	0	•	0	0.00	0	
	1979	B	0	15	0	00.0	0	1
	1980	0	•	0	0	0.00	0	
	1981	7	0	64	0	0.00	<b>e</b>	
	1982	6	0	ŝ	0	0.00	0	
	1983	•	0	•	0	0.00	0	
	1984***				NO SEASON			
	1985***				NO SEASON			
	1986***				NO SEASON			
	1987	æ	7	68	13	0.02	50	
	1988***				NO SEASON			
	1989***				NO SEASON			
	1990***				NO SEASON			
	<b>***</b> [66]				NO SEASON			

Table 2. (Continued)

Table Z. (Continued)								
		Hunters	Total	Hunter-Days	Percent	Turkeys Per	Percent of Hunters	Total
Hunting Unit	Year	Afield	Harvest	Afield	Success*	Hunter-Day	<b>Observing Turkeys</b>	Permits**
	1					1		
<b>BLUE MOUNTAINS</b>	1974	17	2	34	13	0.07	27	
ELK RIDGE	1975	19	Ţ	62	Ś	0.02	56	
	1976	11	0	23	0	0.00	33	
	1977	7	H	14	17	0.08	17	·
	1978	12	2	39	18	0.06	36	
	1979	<b>9</b> 0	0	17	0	0.00	0	
	1980			1	NO SEASON			
	1981				NO SEASON			
	1982				NO SEASON			
	1983				NO SEASON			
	1984				NO SEASON			
	1985				NO SEASON			
	1986				NO SEASON			
	1987				NO SEASON			
	1988				NO SEASON			
	1989				NO SEASON			
	1990				NO SEASON		·	
	1991	·			NO SEASON			

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Table 2. (Continued)	(p							
		Hunters	Total	Hunter-Days	Percent	<b>Turkeys Per</b>	Percent of Hunters	Total
Hunting Unit	Year	Afield	Harvest	Afield	Success*	Hunter-Day	<b>Observing Turkeys</b>	Permits**
MIXED UNITS	1971	15	4		15		61	-
	1972	25	ŝ	68	18	0.05	50	
	1973	12	0	38	0	0.00	0	
	1974	6	0	36	0	0.00	12	
	1975	11	0	32	0	0.00	22	
	1976	4	1	17	25	0.07	100	
	1977	6	<b>1</b>	29	13	0.04	50	
	1978	3	0	11	0	0.00	67	
	1979	9	0	27	0	0.00	20	
	1980	0	0	0	0	0.00	0	
	1981	1	0	ы	•	0,00	100	
	1982	0	C	ð	0	0.00	0	
·	1983	•	0	0	0	0.00	0	
	1984	4	0	15	•	0.00	33	
	1985	4	0	6	0	0.00	67	
	1986	12	0	36	0	0.00	<b>6</b> 0	
	1987	11	0	28	0	0.00	0	
	1988	12	0	31	0	0.00	75	
	1989	9	1	12	23	0.13	50	
	1990	15	0	36	0	0.00	54	
	1991	16	4	57	23	0.06	69	

		Hunters	Total	Hunter-Days	Percent	<b>Turkeys Per</b>	Percent of Hunters	Total
Hunting Unit	Year	Afield	Harvest	Afield	Success*	Hunter-Day	Observing Turkeys	Permits**
STATE TOTALS	1968	290	31	738	11	0.04	19	110
	1969	267	13	612	ŝ	0.02	: 7	276
	1970			-	NO SEASON			
	1971	215	26	576	11	0.04	38	223
	1972	269	35	751	12	0.05	<b>6</b> £	285
	1973	135	0	311	Ð	0.00	10	150
	1974	112	9	289	ŝ	0.02	22	121
	1975	76	S	219	<b>v</b> a	0.03	29	103
	1976	74	÷	185	œ	0.03	32	81
	1977	8	12	248	12	0.05	66	108
	1978	101	9	246	91	0.04	42	116
	1979	90	1	237	1	0.01	80	113
	1980	35	0	84	0	0.00	11	\$
	1861	60	14	129	23	0.11	53	5
	1982	80	12	184	16	0.07	62	91
	1983	8	14	161	21	0.09	<b>35</b>	26
	1984	169	£	482	25	0.09	11	190
	1985	270	41	747	15	0.06	23	314
	1986	335	<b>6</b> 4	1,054	13	0.04	57	362
	1987	347	99	1,150	17	0.05	57	384
	1988	421	\$	1,267	16	0.05	20	66
	1989	477	20	1,568	12	0.04	55	527
	1990	531	52	1,812	91	0.03	51	579
	1991	532	59	1,792	E	0.03	49	587
STATE TOTALS								
(16-8961)		5,075	607	14,842	259			5,625
STATE AVERAGES								
(1968-90)		207	25	593	Ξ	0.04	41	110

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

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

***The Pine Valley Mountains unit was closed by emergency action in 1984 and by amendment to the proclamation in 1985 to protect Rio Grande turkeys released on the area in February 1984. It was opened in 1987 and closed in 1988 through 1991 by proclamation.

spring 1991	•			
Hunting Unit	Date of Kill	Beard Length (Inches)	Spur Length (1/8 Inches)	
EAST ZION	*			
EAST ZION	*	7	4	
	*	·		
	*	8	6	
	5/01	6	8	
	5/01	8	4	
	5/01	8 2 3 8	4	
	5/01	3	2 3	
	5/01	8	. 3	
	5/01	4	1	
	5/01	4	4	
	5/01	8		
	5/01	8	7	
	5/01	4	6	
	*5/02	3		
	5/02	8	6	
	*5/04	1		
	5/04	4	2	
	5/05	9	6	
	5/08	8 5		
	5/09	5		
	5/11	7	4	
	5/14	8	6	
	5/15	6	1	
	5/18	4	6	
	*5/18	1		
	5/19	4	8	
	5/21	1	1	
	5/23	3	2	
	5/25	3 5 8		
	5/26	8	3	
LA SAL	*	<u> </u>		
	5/23	3	4	
BOULDER	5/01	9 2	6	~~
	5/01	2	2	
	5/01	3 3	2	
	5/01	3	2	
	*5/01 5/01	4		
	5/01	3	ב 4	
	5/01	7		
	5/03	3 8 5 4 8 2	1	
	5/03	8	6	
	5/04	5	1	
	*5/05	4		
	5/08	8	4	
	5/10	2	1	
	5/22	4	3	
	5/25	4		

Table 3. Date of kill, beard and spur length of Merriam's turkeys harvested during spring 1991.

*Possible violation of season date, sex, or weapon. All successful turkey hunters reported using shotguns.

	rennus,	Hunters	Hunter-Days	Turkeys	Percent	Turkeys per	Crippling Loss/	Turkeys	Percent of Hunters
Year	Sold	Afield	Afield	Bagged	Success ⁺⁺	Hunter-Day	100 Bagged	Ohserved	Ohserving Turkeys
1964	229	211	362	100	38	0.22	15	1.158	9.9
1965	214	207	406	50	24	0.12	æ	730	29
1966*	192	187	471	43	23	0.0	<b>F</b> -	756	; \ <b>F</b>
1967	146	135	405	40	30	0.10	. 16	748	3 1
1968*	368	344	883	183	38	0.21	IS I	1.321	
1969	223	210	549	36	11	90.0	61	466	- 11
1970	197	174	418	58	24	0.14	; • <b>e</b>	564	
1971	184	174	444	60	21	0.14		451	8
1972	124	118	303	12	7	0.04	. 8	21	1 2
***£76]	;	1	ı	ł		1	1	1	, , 1
1974	29	26	79	<b>e</b> 0	12	0.04	11	S	5
1975	58	<b>4</b>	115	7	15	0.06	0	5	57
1976	68	56	136	15	27	0.11	-	182	32
1977	6 <b>0</b>	53	133	٢	15	0.06	0	4	. 95
1978+	102	88 88	223	٢	6	0.03	33	335	
1979	<del>4</del> 6	36	71	÷	6	0.05	0	<b>61</b>	19
1980	<b>6</b> 4	35	69	11	32	0.16	38	127	44
1981	63	55	114	12	11	0.11	56	141	32
1982	56	50	136	Ш	23	0.08	10	185	47
1983	61	49	112	15	28	0.13	0	303	49
1984	97	86	193	28	32	0.14	14	380	6
1985***	t	I	;	I	ı	1	1	I	: 1
1986***	1	ł	1	I	1	ł	1	I	I
1987***	1	1	1	1	1	1	:	I	1
1988***	1	ı	1	1	1	1	I	I	1
***6861	I	I	ł	1	1	I	I	I	ľ
1990+++	ı	1	1	1	ł	ł		I	ı
+++1661	t	1	1	ł	ł	I	·	I	1
TOTALS									
(1964-84)	2,560	2,340	5,622	682				9.269	
AVERAGES									
(1964-84)	122	111	268	32	21	0.10	14	441	34

Mountains a one-bird limit; from 1969 through 1972, all areas had a two-bird limit. Hunter success was based on the number of successful hunters rather than total turkeys bagged. **During 1968, the Boulder Mountain and East Zion units had two-bird season linuits and the LaSal

+++ No full season.

		Disunce	_		MIXED	2	AGUITS W/O	-								
Region and		Broods	.*	Mean		Observations	Young	Total	Total	Young/	Vehicle		Hours o	Hours of Effort		Birds/
County	-	Adults 1	Young	Brood		Adult Young		Adults	Young	100 Ad	Mites	Veh.	Horse	Walk Total		100 Hr.
Northern Region																
Box Elder	ł	ł	ł	;	-1		1	;	1	I	I	1	ł	I	1	ł
Cache	;	1	1	:	1	1	ł	ł	1	ł	ł	ł	ł	1	1	ł
Davis	1	ł	;	:	1		1	1	:	1	ł	1	1	:	1	1
Morgan	t	ł	ł	:	1		1	ł	1	ł	:	1	;	1	1	1
Rich	1	ł	;	1	ł		1	I	1	I	I	1	ł	1	I	I
Summit ·	ŝ	1	20	4.00	1		1	1	20	1	1	1	ł	1	1	1
Weber	ł	1	ł	1	ł		;	ł	1	1	1	1	1	I	ł	1
REGIONAL TOTALS	S	1	20	4.00		1		:	50	1	1	1	1	1	1	
Central Region																
Juab	1	1	:	1	1		;	1	1	ł	1	ł	ł	:	ł	ł
Salt Lake	1	1	I	1	1	;	1	1	ł	:	;	ł	ł	:	ł	;
Sanpete	1	ł	ł	ł	1	ł		ł	1	ł	ı	1	;	1	:	1
Tooele	t	1	1	I	ł	1	ł	1	1		I	I	I	1	1	1
Utah	•	6	35	3.89	18	11	21	48	112	233	155	13	1	55	<b>68</b>	235
Wasatch	1	1	I	I	1		1	:	1	1	I	I	I	1	1	1
REGIONAL TOTALS	٩	6	35	3.89	18	11	21	<del>4</del> 8	112	233	155	.13	0	55	<b>68</b>	235
Southern Region												1				
Beaver	1	1	<b>1</b>	1	:		1	I	ł	1	:	1	ł	1	:	1
Garfield	ł	1	ł	1	1	1	I	I	1	1	1	1	:	1	1	1
Iron	1	ł	1	I	1		ł	ł	I	I	1	I	I	I	ł	1
Kane	1	1	I	I	1		1	1	I	1	1	1	ł	1	:	1
Millard	ŀ	ł	ł	:	i	ł	1	I	:	1	1	1	ł	1	1	1
Piute	1	:	:	:	:		1	:	1	I	ł	1	ł	ł	1	1
Sevier	I	ł	:	1	;		:	:	ł	1	ı	1	:	1	1	ł
Washington	ł	1	t	:	:	:	1	1	ł	I	1	1	۱.	<b>1</b>	:	1
Wayne	ł	ł	;	-1-	1		1	١	:	1	I	I	1	1	1	1
REGIONAL TOTALS		I	1	1	ł		:	ł	1	;	1	1	1	I	1	1
Northeastern Region				I												
Daggett	1	1	:	1	;		1	1	ł	1	ı	:	1	ł	:	I
Duchesne	ł	ł	1	1	1	1	1	1	1	1	ł	1	1	:	;	I
Uintah	:	1	;	1	I		-1	1	:	I	1	1	1	1	1	1
REGIONAL TOTALS	ł	:	1	1	1	•	1	:	1	1	1	I	1	1	I	I
Southeastern Region																
Carbon	J	1	:	:	ł			I	:	ł	ı	1	1	I	I	1
Emery	4	7		4.00	80	25	40	<b>20</b>	33	99	60	ŝ	ł	ы	•	1,186
Grand	ł	I	I	ł	1		1	1	1	1	1	ł	ł	:	1	1
San Juan	-1	1	I	1	;			1	1	1	8	-	1	-	∞	:
REGIONAL TOTALS	2	2	8	4.00	8		40	50	33	66	150	12	0	3	15	553

Table 6. Summary of the 1991 spring li	<b>1991 spring limite</b>	mited entry Rio Grande turkey season.	turkey season.		-
Data	Marysvale	New Harmony	Pine Valley	Tropic	STATE TOTALS
Permits Sold	5	S	S	Jun I	20
<b>Applicants For Permits</b>	51	24	39	45	159
No Hunts	0	1	0	1	7
Hunters Afield	S	4	ίν.	৾৾৾৾৾৾৾৾	18
<b>Average Hunter-Days</b>	6.20	4.60	3.50	1.50	3.95
<b>Turkeys Bagged</b>	2	3	e	ŝ	11
<b>Percent Success</b>	40	75	60	75	61
<b>Turkeys Bagged Per</b>		· · · · ·			
Hunter-Day	0.32	0.65	0.86	2.00	2.78
Age of Harvested Turkeys					
Yearling	0	1	1	1	3
Adult	7	7	7	7	80
<b>Reported Crippling Loss</b>	0	1	0	0	-
(Loss/100 Bagged)	0	33	0	0	6
Illegal Kills	0	0	0	2	2

## **SHARP-TAILED GROUSE**

### SUMMARY

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

There was no legal harvest of sharp-tailed grouse from 1980 through 1991. Since 1988, the number of birds present on active dancing grounds has been substantially greater than in recent years (Table 1.). In the last three years several "new" grounds have been located. It appears sharp-tailed grouse have made a moderate recovery in core areas. Numbers on the fringe of their range appear to be low. Concurrent with the upswing in sharp-tailed populations has been a succession of mild winters. Since the catastrophic winter of 1983-84, all winters have been normal or milder than normal except 1988-89.

In Box Elder County, habitat associated with existing populations of sharp-tailed grouse has been relatively unchanged since 1983 except that about 100,000 acres in Box Elder County have been entered into the Conservation Reserve Program (CRP). This may be benefitting sharp-tailed grouse populations by providing undisturbed nesting and brood-rearing cover. The value of CRP to wildlife in Utah is being studied.

We have minimal recent data on sharp-tailed grouse populations in the Cache, Weber, and Morgan County areas. By 1984, populations in these areas were at or below minimum viable population levels. Efforts have increased over the past two years to locate "new" dancing grounds in these counties (Table 1.). New "core" sharp-tailed grouse habitat areas are being attributed to CRP lands in these counties.

Sharp-tailed grouse brood count information for Box Elder County is shown in Table 2.



No.         Inertial (control 1971)         1971         1993         1964         1964         1964         1964         1964         1964         1964         1964         1964         1964         1964         1964         1964         1964         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         1974         19	ÿ													1 988	1989 1	1990	1991
Name         Name         W1         Production         W1         Production         W1         Production         W1         Production         W1         W1 <th></th> <th>Dancing Ground</th> <th></th> <th>010</th> <th>1070</th> <th>0801</th> <th></th>		Dancing Ground		010	1070	0801											
net         Wast Hilds Camples (Lacred 1971)         11         15         3         0         12         0         13         15         3         0         0         13         15         3         0         0         13         15         3         0         13         15         3         0         13         15         3         0         13         15         3         0         13         13         14         5         9         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13         13				8/8													
West Hills Complex (Located 1977)       41       -       15       4       -       15       4       -       15       4       -       15       4       -       15       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <td></td> <td></td> <td></td> <td></td> <td></td> <td>•</td> <td>5</td> <td>&lt;</td> <td>14</td> <td>0</td> <td>8</td> <td>46 -</td> <td><del>3</del></td> <td></td> <td></td> <td></td> <td></td>						•	5	<	14	0	8	46 -	<del>3</del>				
Transfers       Function       Funcion       Funcion <th< td=""><td></td><td>(101 project of second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se</td><td>41</td><td>1</td><td>15</td><td>4</td><td>71</td><td></td><td></td><td></td><td>-</td><td>18</td><td>0</td><td>3</td><td>•</td><td>1</td><td>•</td></th<>		(101 project of second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se	41	1	15	4	71				-	18	0	3	•	1	•
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	der	West Hulls Compare (contract of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	13	16	3	•	•	•	>			{ <	Y		<del>,</del> ~ ~ ~	1	2
$ \begin{array}{ccccc} \text{south Watter's Valley (Located 1971)} & 12 & 7 & 7 & 19 & 19 & 14 & 5 & 9 & 20 & 20 & 19 & 16^{-1} & 1 \\ \text{Niditle Construction (Located 1971)} & 12 & 7 & 7 & 19 & 19 & 14 & 5 & 9 & 20 & 20 & 19 & 16^{-1} & 1 \\ \text{Percension Values (Located 1991)} & 12 & 7 & 7 & 19 & 19 & 14 & 5 & 9 & 20 & 20 & 19 & 16^{-1} & 1 \\ \text{Percension Values (Located 1991)} & 10 & 12 & 1 & 1 & 1 & 1 & 1 \\ \text{Recovere There (Located 1991)} & 10 & 12 & 1 & 1 & 1 & 1 & 1 \\ \text{Neter (Located 1991)} & \text{Neter (Located 1991)} & 10 & 13 & 11 & 1 & 1 & 1 & 1 & 1 \\ \text{Submitle Ratio Tower (Located 1991)} & 10 & 13 & 11 & 1 & 1 & 1 & 1 & 1 & 1 & 1 &$		Hunsaker's Field (Located 1977)			-	U	0	•	•	>	4	>	, ;	. :	141	I	14
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## PTARMIGAN

### SUMMARY

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

### Breeding Territory and Brood Surveys

Surveys on the ptarmigan population continue. Two survey techniques are used. A breeding territory survey is conducted from mid- to late June. A brood survey is conducted from mid- to late August. Results of the last 10 and 11 years of survey data are found in Tables 1 and 2.

The 1990-91 winter was relatively mild in northeastern Utah.

No spring survey of breeding territories was made in 1991.

Brood surveys were conducted in the Painter and Atwood Basin drainages. One brood was observed. Brood size was 2.00 young. Survey conditions were poor due to rainy weather.

#### Harvest

Fifteen hunters bought \$2.00 permits to hunt ptarmigan in Utah in 1991 (Table 3). An estimated 13 hunters actually pursued ptarmigan and 26 birds were killed. This is the most birds harvested since 1984. Hunter success was 1.63 birds bagged per hunter-day. Fifty percent of the hunters afield reported observing ptarmigan.

Many permits are obtained by sportsmen who think they might hunt during a fishing or elk hunting trip, but don't seriously plan on the ptarmigan hunt.



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Duchesne	Atwood Basin	• •	·. ,			zυ	Z U		Ś		ŝ	<b>s</b> ;
Duchesne	Yellowstone River				۰. ۱		ਸ਼ [ੇ] 'ਤ		d R			d M.
Summit	Henry's Fork			L R		ы Ц	<u>,</u> В		> 23	• .	> ⊠ ∶	> Ei ;
Summit	Flat Top Mountain			A	1	Ð	۵	n.	<b>X</b> .	۰ .	<b>&gt;</b>	<b>X</b>
Summit	Lake Blanchard	7							ı			• .
Summit	Beaver Creek		¢									
Summit	Smith's Fork			• į			· · · · ·				·	
Ušntab	ljintah Leidy Peak									·		, .

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(2) Investigator was incapacitated.

Table 2. White-tailed ptarmigan brood	ood inventory, 1982-91	-91.								
				DATE						
<b>Matistics</b>	8/17-30/82	8/23-30/83	8/26-28-84	8/14-22/85	8/8	8/8	8/25-31/88	8/80	8/90	8/01
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Henry's Fork									,	1
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Yellowstone						·.				
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	Ņ	-	1	I	Π					
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Atwood Basin										
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Young/100 Adult Hens	1	1 I	ı	1	I			ı	I	2.00
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	Young/100 Adult Rens	ı								1					
	Hens w/o Broads						, <b>,</b>			I					

Table 2. (continued)

Area:				DATE						
Statistics	8/17-30/82	8/23-30/83	8/26-28-84	8/14-22/85	8/86	8/87	8/25-31/88	6/90	0,00	0,01
								010	1610	1610
East F. Black's Fork										
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Hens w/o Broods						I		l	I	I
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tour w/o Barada		400	300	350	375	236	505	366	400	200
A 2.14 PK-1-1		•	ч	0	0	7	19	4		
		¢	•	¢	•	0	-		•	•
<b>Total Birds Observed</b>		20	ł	18	10	Ę		ę	•	•
h After 4 dave of searching				0.4		Ì	4	22		<b>e</b> 7

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

d Flat Top Mountain between Henry's Fork and Smith's Fork

e Mixed Adults

n Number of Broods

Table 3. Summary of white-tailed ptarmigan harvest statistics, 1982-91. Estimates are calculated hased upon 100 percent samples or projection factors.

Year Sold Afield Afield Bagged 1982 48 21 33 0	Ŧ					
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<b>186 49 14 21 8</b>	9.57	<b>0</b> , <b>1</b>	Ð	•	1	1
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1088** 28 15 15 22	1.47	1.47	•	ñ :	1	(TT)AC*A
1000 10 3 18 13	4.33	0.72	1	35		1
$\frac{1}{100} \frac{1}{11} $	1.55	0.63	•	81	32	ł
;	2.00	1.63	• •	95	<b>2</b> 0	

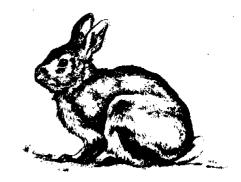
# **RABBITS AND HARES**

### SUMMARY

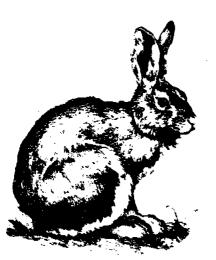
Cottontail populations decreased from a short term high in 1988 and are below the 10 year average.

Summer roadside counts indicated a decreased population density statewide. Harvest statistics indicated decreased hunter success, as in the previous year, and, is still 11 percent below average. Field bag checks on opening weekend indicated below average hunter success.

## **Cottontail Rabbits**



### **Snowshoe Hares**



The 1991 snowshoe hare hunting season indicated a slight decrease in populations.

Hunter pressure decreased 16 percent from the previous year and remained below average. Although efforts have been made to educate hunters in the identification of the snowshoe hare and the white-tailed jackrabbit, it is still a potential problem which could bias the snowshoe data.

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### COTTONTAIL RABBIT

#### Roadside Counts

Results of the annual roadside counts for 1991 are shown in Table 1 and Figure 1. The long-term trend of cottontails observed per mile and young per 100 adults is shown in Figure 4 and Tables 2 and 3. Indices for 1991 compared to 1990 and the previous 10-year (1981-90) average follow:

		Percent	<u>change from</u>
	<u>1991</u>	1990	Average
Total miles driven	558	-37	-64
Total cottontails counted	94	-73	-84
Cottontails observed per mile	0.17	-56	-54
Young observed per 100 adults	64	-12	-21

Reverse - being fur

A increased breeding population for 1991 was again indicated by 1990 harvest statistics. Production data from roadside counts indicated a decline in the population. The cottontail per mile index decreased 56 percent and was 54 percent below average.

### Harvest

#### Hunter Questionnaire

Results of the 1991 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 are found in Tables 5-7. Trends of statewide harvest statistics are found in Table 8 and Figures 2 and 3. Results of the 1991 season compared to 1990 and the 24-year average follow:

		Percent	<u>change from</u>
	<u>1991</u>	1990	<u>Average</u>
Cottontail hunters	21,137	-8	-15
Cottontail harvest	111,407	-13	-31
Hunter-days afield	82,772	-11	-19
Cottontails per hunter-day	1.35	-1	-11
Cottontails per hunter	5.27	-5	-15

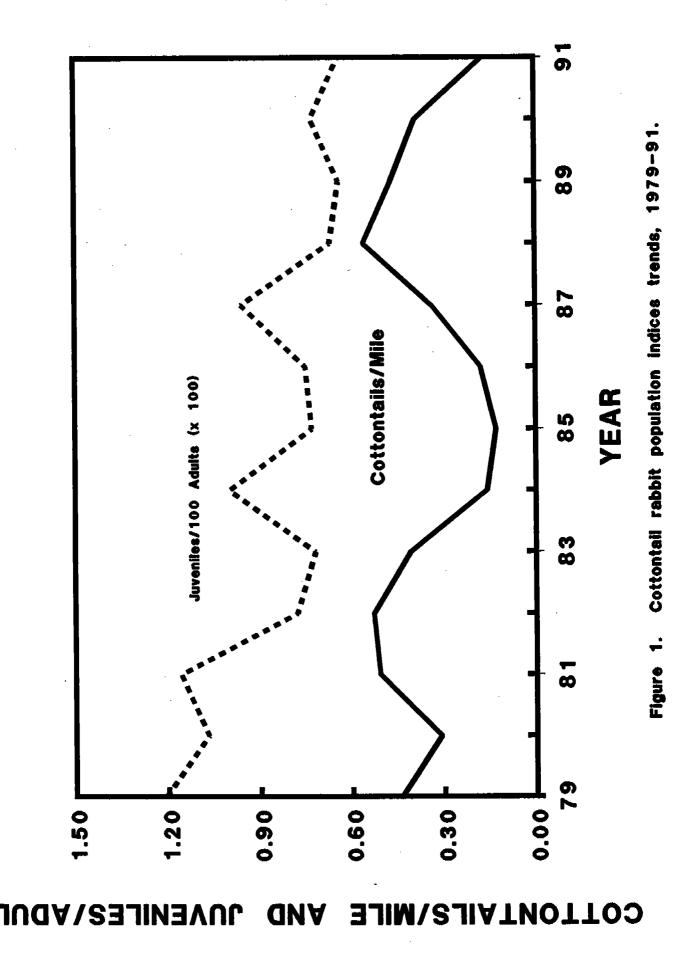
Total hunters and effort decreased from 1990. Total harvest decreased 15 percent. Total harvest was 31 percent below average. Hunter success was 11 percent below average. Harvest data indicate a year of below average populations of cottontails. The drought may be negatively affecting rabbit populations statewide. A population crash was apparent in the spring of 1984, and has been confirmed by the 1984 and 1985 harvest data. Populations recovered rapidly in 1986, 1987, and 1988. Populations may be headed downward again. The last six winters have not been harsh.

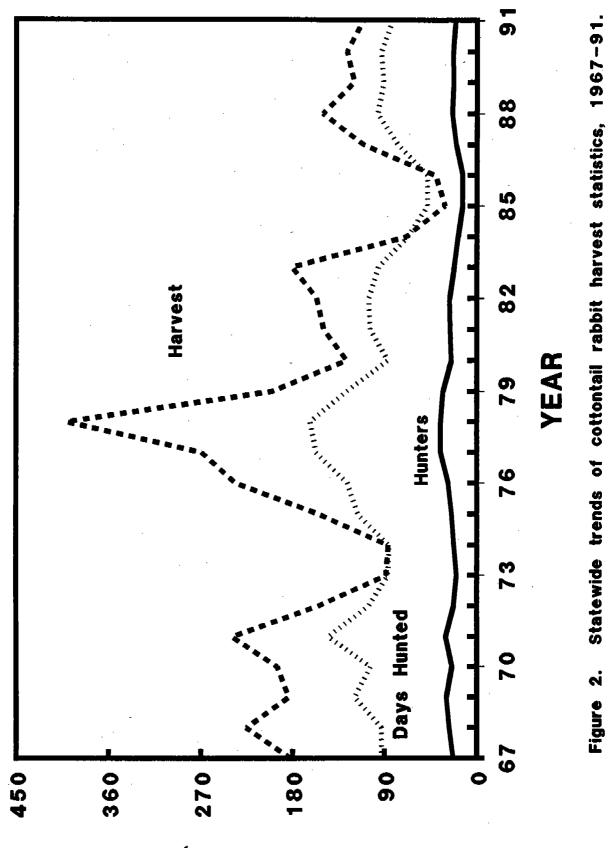
### Field Bag Checks

Results of field bag checks for 1991 are shown in Table 9. Trends of hunter success as determined by bag checks are shown in Table 10. Following is a comparison of the 1991 field bag check data to 1990 and the previous 10-year (1981-90) average.

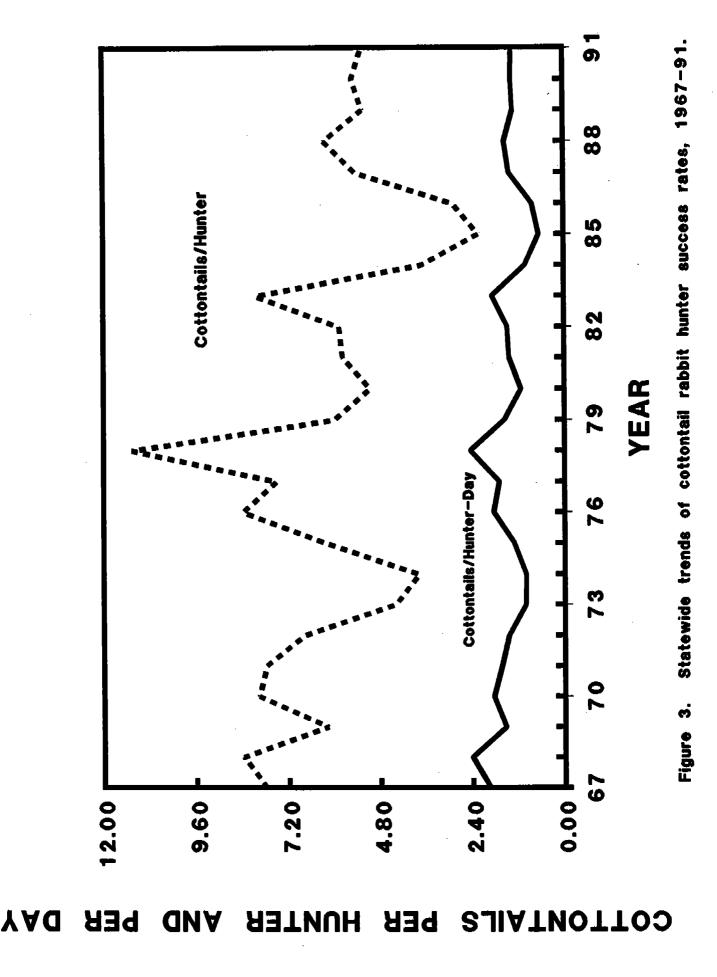
		Percent	<u>change from</u>
	<u>1991</u>	<u>1990</u>	Average
Total hunters checked	171	+122	+51
Total hours hunted	734	+251	+162
Cottontails per hunter			
(complete hunts)	1.26	-73	-42
Cottontails bagged per 100 hours	29	-80	-61
Hours per hunter-day			
(complete hunts)	4.29	+33	+40
Hours per cottontail bagged (complete hunts)	3.41	+139	+75

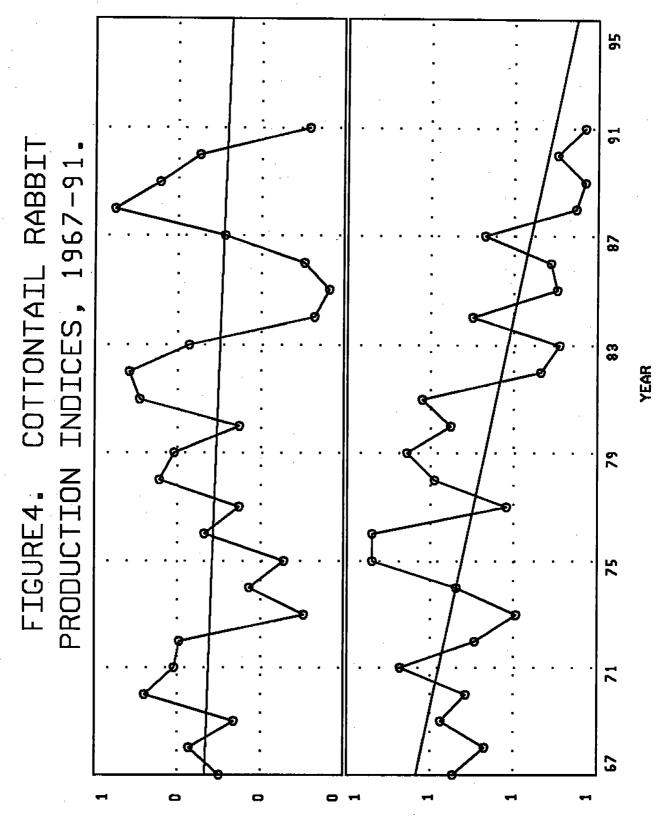
Hunter success (cottontails per hunter) decreased and was well below average. Only 171 hunters were checked. Sample sizes were small which may account for the inconsistency with mail questionnaire results.





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Table 1.	Cottontail rabbit summer	inventory summary, 1991.

Region and	Miles		Rabbits Ol	oserved		Young/	Rabbits
County	Driven	Adults	Young	Unclassified	Total	100 Adults	Mile
Northern Region							
Box Elder	90	8	1		9	13	0.10
Cache			-				
Davis							-
Morgan						-	-
Rich			·				
Summit							
Weber			-				
REGIONAL TOTALS	90	8	1	**	9	13	0.10
Central Region							
Juab		••	-	••			-
Salt Lake		_		-		-	
Sanpete	33	2	1		3	50	0.09
Tooele			••				-
Utah				••			-
Wasatch							
REGIONAL TOTALS	33	2	1	••	3	50	0.09
Southern Region	· ··· -						
Beaver							
Garfield					••	· <b></b>	
Iron							
Kane							••
Millard	. <b></b>						-
Piute							-
Sevier		••					
Washington							
Wayne						369	0.83
REGIONAL TOTALS			-			369	0.83
Northeastern Region							
Daggett		**					
Duchesne	105	2	1		3	50	0.03
Uintah							
REGIONAL TOTALS	105	2	1		3	50	0.03
Southeastern Region							
Carbon	90	••	6	12	18		0.20
Emery	90		-	33	33		0.37
Grand	60		-	3	3		0.05
San Juan	90	13	7	5	25	54	0.28
REGIONAL TOTALS	330	13	13	53	79	100	0.24
STATE TOTALS	558	25	16	53	94	64	0.17

Region and		tauous ousetrea per mue un me summer mrenory, 1501-91		the smirn a		Wry, 1901- Year	71.					Avenue
County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1001	1081-00
Northern Region												AC-10/T
Box Elder	0.37	0.01	;	1	1	0.02	0.03	ł	0.03	0.39	0.10	
Cache	1	ł	ł	ł	1	I	;	1	:	ł	1	
Davis	I	ł	ł	1	I	I	1	:	ı	ł	ł	
Morgan	ı	1	1	1	1	1	1	1	1	I	I	
Rich	0.13	0.16	1	1	I	0.02	1	1	ı	ı	ł	
Summit	1	1	0.18	ł	- 1	I	1	1	I	ł	ı	
Weber	I	I	ł	1	ŀ	ł	1	1	1	I	1	
<b>REGIONAL TOTALS</b>	0.26	0.06	0.18	1	1	0.02	0.03	1	0.03	0.39	0.10	0.14
Central Region												
Juab	1.12	0.38	1	0.00	0.00	0.02	0.0	0.54	0.30	0.23	ł	
Salt Lake	1	1	I	ł	ł	ł	ł	ł	1	ł	ł	
Sanpete	1.29	0.78	0.57	ł	1	l	1	0.47	0.22	0.65	0.09	
Tooele	0.13	0.10	I	0.02	0.00	0.01	0.02	0.18	ı	1	1	
Utah	I	I	I	ı	ł	I ,	ł	1	ł	I	1	
Wasatch	ı	1	I	1	:	ı	ł	1	ı	I	1	
REGIONAL TOTALS	0.85	0.43	0.57	0.0	0.0	0.01	0.02	0.36	0.26	0.45	0.09	0.30
Southern Region												
Beaver	0.19	0.12	0.04	0.01	0.03	0.10	0.04	0.06	ı	I	I	
Garfield	;	0.27	0.25	:	0.06	0.13	ı	1	1	ı	1	
Iroa	1	0.18	0.38	0.27	0.33	0.53	0.26	I,	1	1	ı	
Kane	0.69	I	1	ı	0.52	0.47	0.97	1.09	ł	1	t	
Millard .	0.56	0.28	0.16	0.04	0.02	0.08	0.0	0.0	1	0.08	ł	
Piute	0.10	0.13	0.03	;	:	0.06	0.05	1	ł	1	I	-
Sevier	0.83	0.27	0.23	I	ı	1	1	1	1	ł	I	
Washington	0.24	0.32	0.38	;	0.23	0.12	0.12	0.36	0.33	1	1	
Wayne	0.49	0.69	ı	0.80	•	0.20	0.24	0.34	t	1	0.83	
<b>REGIONAL TOTALS</b>	0.45	0.29	0.19	0.18	0.19	0.24	0.27	0.33	0.33	0.08	0.83	0.26
Northeastern Region												
Daggett	0.32	0.45	0.58	0.22	0.12	0.22	0.66	0.85	0.50	0.55	ı	
Duchesne	1.78	2.28	0.58	0.28	0.13	0.44	0.86	1.49	1.04	0.23	- 0,03	
Vintah .	0.48	1.97	2.97	0.11	0.00	0.02	0.36	1.26	1.40	1.00	ı	
REGIONAL TOTALS	0.81	1.46	1.21	0.21	0.09	0.25	0.65	1.18	16.0	0.57	0.03	0.73
Southeastern Region												
Carbon	0.12	0.10	0.11	1	0.05	0.08	0.33	0.41	0.34	0.02	0.20	
Emery	0.41	0.18	0.23	0.18	0.20	ł	0.40	0.34	0.33	0.40	0.37	
Grand	0.32	0.67	0.15	0.13	0.67	0.80	I	0.10	0.06	0.01	0.05	
San Juan	0.42	1.26	0.40	1	0.14	0.37	0.29	0.59	0.55	0.80	0.28	
<b>REGIONAL TOTALS</b>	0.36	0.58	0.25	0.17	0.13	0.17	0.38	0.36	0.32	0.36	0.24	0.31
STATE TOTALS	0.51	0.53	0.41	0.16	0.13	0.18	0.34	0.56	0.47	0.39	0.17	0.37

Table 2. Summary of cottontail rabbits observed per uile during summer inventory, 1981-91.

,				Region and		Year						Average
County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1661	1981-90
Northern Region												
Box Elder	11	1	1	1	ı	0	22	1	200	200	13	
Cache	ł	I	:	ı	1	t	ı	ł	1	;	ı	
Davis	ı	1	:	I	1	1	ı	I	1	1	1	
Morgan	1	:	ł	<b>1</b>	1	ı	1	1	I	I	ı	
Rich	43	8	67	:	ı	<b>1</b> 5	ı	ı	1	1	ı	
Summit	ı	:	ı	ł	ı	I	I	1	1	I	1	
Weber	ı	ł	1	1	I	1	ı	1	I	1	I	
REGIONAL TOTALS	11	8	69	:	,	8	25		200	200	13	8
Central Region												
Juab	102	53	ł	¢	0	•	•	20	13	1	I	
Salt Lake	1	1		ł	;	ļ	1	I	1	:	ł	
Sannete	197	209	125	ł	1	ł	1	8	4	4	50	
Tooele	200	8	I	I	1	ł	100	120	1	:	ı	
Utah	1	1	I	1	1	ı	<b>1</b>	ł	I	ł	ı	
Wasatch	ł	:	ł	ł	1	1	1	1	ł	ł	1	
REGIONAL TOTALS	147	140	225	•	0	•	100	57	23	27	50	72
Southern Region										3		
Beaver	55	83	33	1	1	22	:	;	1	:	1	
Garfield	ł	38	120	:	33	38	:	:	I	1	1	
Iron	ł	51	35	4	82	75	:	1	1	1	1	
Kane	106	:	I	1	100	11	111	149	1	ı	:	
Millard	170	<u>9</u> 6	125	75	200	170	114	110	I	100	I	
Piute	ł	ł	200	:	ł	I	:	ı	1	1	1	-
Sevier	:	33	61	ł	:	ı	:	ı	ı	I	1	
Washington	123	150	81	ł	73	133	175	100	131	1	1	
Wayne	287	343	F	380		360	2100	- 244	1	I	369	
REGIONAL TOTALS	184	145	82	215	85	100	137	136	131	9	369	132
Northeastern Region												
Daggelt	104	140	8	33	46	136	116	30	<b>6</b> 5	S	ı	
Duchesne	4	37	16	77	15	26	24	<b>6</b> £	50	1	5	
Uintah	176	44	76	233	0	100	264	170	239	<u>95</u>	;	
REGIONAL TOTALS	67	<b>8</b>	63	42	31	58	74	46	82	58	50	51
Southeastern Region												
Carbon	8	38	\$	1	I	150	567	200	\$	<b>4</b> <b>6</b>	I	
Emery	5	43	75	217	216	I	54	50	I	1	1	
Grand	137	148	150	33	300	300	ł	1	ł	I	1	
San Juan	105	11	<b>6</b>	۱	4	61	47	49	80	69	<b>S4</b>	
REGIONAL TOTALS	103	82	54	156	88	99	100	64	110	67	100	89
					3	\$		\$	, .	;		

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	COTTONTAILS BAGGED	COTTONTAILS PER HUNTER-DAY	% OF PRESSURE	
NORTHERN REGION						
BOX ELDER	157	7,724	10,089	1.31	9.33	9.06
CACHE	33	1,269	1,791	1.41	1.53	1.61
DAVIS	4	104	156	1.50	0.13	0.14
MORGAN	9	295	452	1.53		0.41
RICH	53	1,757	4,610	2.62	2.12	4.14
SUMMIT	19	1,791	2,226	1.24		
WEBER	- 8	574	504	0.88	2.16 0.69	2.00 0.45
REGIONAL TOTALS	283	13,517	19,831	1.47	16.33	 17.80
ENTRAL REGION						
JUAB	110	5,097	8,559	1.68	6.16	7.68
SALT LAKE	7	556	400		0.67	0.36
SANPETE	46	2,470	3,113	1.26	2 98	2.80
TOOELE	257		18,666	1.23	18.35	16.76
UTAH	134	6,975	6,906	0.99	10.33	
WASATCH		1,148		1.06	8.43	
					1.39	
EGIONAL TOTALS	573 <b>5</b> 73	31,435	38,863	1.24 	37.98	34.88
OUTHERN REGION						
BEAVER	12	1,478	1,026	0.69	1.79	0.92
GARFIELD	6	226	104	0.46	0.27	0.09
IRON	13	1,078	1,148	1.06	1.30	1.03
KANE	9	1,583	1,478	0.93	1.91	1.33
MILLARD	55	4,070	4,662	1.15	4.92	4.18
PIUTE	4	121	69	0.57	0.15	0.06
SEVIER	42	2,992	1,948	0.65	3.61	1.75
WASHINGTON	25	2,209	1,496	0.68	2.67	1.34
WAYNE	18	1,043	1,252	1.20	1.26	1.12
EGIONAL TOTALS	184	14,804	13,186	0.89	17.89	11.84
ORTHEASTERN REG	ION					
DAGGETT	33	2,000	3,653	1.83	2.42	3.28
DUCHESNE	91	5,688	12,229	2.15	6.87	10.98
UINTAH	111	6,297	10,142	1.61	7.61	9.10
EGIONAL TOTALS	235	13,986	26,025	1.86	16.90	23.36
OUTHEASTERN REG						
CARBON	56	3,218	5,619	1.75	3.89	5.04
EMERY	39	3,514	3,635	1.03	4.25	3.26
GRAND	7	417	730	1.75	0.50	0.66
SAN JUAN	20	1,878	3,514	1.87	2.27	3.15
EGIONAL TOTALS	122	9,028	13,499	1.50	10.91	12.12
UNKNOWN	 0	 0	0	0.00	0.00	0.00
TATE TOTALS	1,397	82,772	111,407	 1.35	100.00	100.00

Table 4. Summary of cottontail rabbit hunter success and distribution of harvest and hunting pressure by region and county, 1991.

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*Total hunter trips from questionnaire returns.

Region and					Year			
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region	1704	1705						
Box Elder	0.72	0.46	0.73	2.25	1.78	1.29	1.49	1.31
Cache	0.71	0.93	0.18	1.78	0.37	0.66	0.87	1.41
Davis	0.57	0.00	4.00	0.67	0.50	1.00	0.25	1.50
Morgan	1.19	0.55	0.05	1.17	1.50	0.17	0.43	1.53
Rich	1.61	0.52	0.74	1.33	1.86	1.37	2.52	2.62
Summit	0.17	0.35	0.29	1.44	0.92	0.58	0.72	1.24
Weber	0.68	0.13	0.69	2.83	0.61	0.27	1.06	0.88
REGIONAL TOTALS	1.76	0.40	0.57	2.14	1.49	1.09	1.55	1.47
Central Region								
Juab	1.41	0.56	0.78	1.74	1.52	1.52	1.55	1.68
Salt Lake	0.88	0.21	1.06	1.26	0.53	1.35	0.79	0.72
Sanpete	0.48	0.35	0.60	1.25	1.62	1.10	0.85	1.26
Tooele	0.82	0.53	0.71	1.32	1.37	1.20	1.08	1.23
Utah	0.82	0.65	0.94	1.21	1.04	0.90	0.84	0.99
Wasatch	0.69	0.48	0.84	1.28	0.99	1.50	0.69	1.06
REGIONAL TOTALS	0.88	0.53	0.78	1.32	1.27	1.18	1.03	1.24
Southern Region								
Beaver	0.28	0.50	0.61	1.00	1.44	0.41	1.17	0.69
Garfield	0.84	1.00	1.25	0.71	1.41	1.97	1.03	0.46
Iron	1.48	0.60	0.87	0.44	1.58	0.85	1.21	1.06
Kane	2.19	2.07	1.12	0.58	1.41	1.00	0.90	0.93
Millard	0.89	0.86	0.70	0.82	1.09	1.27	1.84	1.15
Piute	0.67	1.00	1.00	1.00	1.25	0.28	1.36	0.57
Sevier	0.79	0.56	0.56	1.04	1.45	0.97	1.45	0.65
Washington	0.93	1.08	0.94	0.95	2.10	0.91	0.89	0.68
Wayne	1.93	1.45	1.53	1.22	1.49	1.05	1.34	1.20
REGIONAL TOTALS	1.06	0.94	0.89	0.85	1.41	1.05	1.30	0.89
Northeastern Regi	on							
Daggett	1.19	1.00	1.96	3.16	3.02	1.65	1.79	1.83
Duchesne	1.62	0.63	1.01	1.63	2.38	1.49	1.83	2.15
Uintah	1.47	0.49	0.49	1.89	2.32	3.16	2.41	1.61
REGIONAL TOTALS	1.51	0.59	0.96	1.95	2.40	2.13	2.10	1.86
Southeastern Regi	on							
Carbon	0.52	0.69	0.49	1.34	1.29	0.97	1.43	1.75
Emery	0.78	0.64	1.05	1.00	1.78	0.80	1.06	1.03
Grand	1.53	1.74	1.28	2.00	2.03	1.00	1.58	1.75
San Juan 🔄	1.51	0.89	1.27	2.57	1.67	1.28	1.37	1.87
REGIONAL TOTALS	0.90	0.77	0.93	1.37	1.55	0.93	1.28	1.50
Unknown counties	0.00	1.11	2.50	1.04	1.49	2.00	0.00	0.00
STATE TOTALS	1.02	0.65	0.83	1.43	1.55	1.32	1.36	1.35

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Table 5. Summary of cottontail rabbits bagged per hunter-day by region and county, 1984-91.

Region and					·V	· · · · · · · · · · · · · · · · · · ·	· ·	
County	1984	1985	1986	1987	<u>Year</u> 1988	1000	1000	
Northern Region	1204	+905	1960	190/	1900	<u>1989</u>	<u> 1990</u>	1991
Box Elder	5.49	3.82	5.68	12.83	12.11	7.20	0.04	0.00
Cache	0.50	0.96	0.25	0.91	0.27	0.47	9.84 1.07	
Davis	0.12	0.00		0.04	0.12	0.47	0.02	1.61
Morgan	0.73	1.16	0.10	0.15	0.12	0.07	0.02	0.14 0.41
Rich	2.08	0.89	1.98	0.53	1.05	1.92	6.05	4.14
Summit	0.29	1.16	0.56	0.57	0.77	0.73	0.63	2.00
Weber	0.56	0.27	0.56	1.44	0.42	0.14	0.83	0.45
REGIONAL TOTALS	9.77	8.26	9.53	16.49	14.96	10.55	17.95	17.80
Central Region					14.20	10.33	<u>17.95</u>	17.00
Juab	5.28	2.04	2.84	5.17	6.05	6.32	5.86	7.68
Salt Lake	2.29	0.48		1.19	0.49	0.40	0.68	0.36
Sanpete	0.82	1.23	2.38	5.61	3.74	3.70	3.34	2.80
Tooele	9.18	10.51	9.99	11.67	13.72	14.73	11.60	16.76
Utah	5.43	8.26	7.66	11.07	8.61	5.20	6.51	6.20
Wasatch	0.91	1.57	1.83	1.73	0.92	0.47	0.44	1.09
REGIONAL TOTALS	23.91	24.09	25.61	36.47	33.55	30.82	28.43	34.88
Southern Region								
Beaver	0.32	1.30	1.12	0.95	0.68	0.40	0.44	0.92
Garfield	0.47	0.61	3.04	0.26	0.42	2.66	1.16	0.09
Iron	1.82	1.23	2.94	0.26	1.54	0.92	2.02	1.03
Kane	2.05	1.98	2.43	0.33	0.84	1.23	0.90	1.33
Millard	3.64	5.66	4.26	3.48	2.99	2.80	5.02	4.18
Piute	0.12	.0.20	0.30	0.08	0.22	0.09	0.61	0.06
Sevier	0.56	1.23	0.91	1.22	2.28	1.66	3.07	1.75
Washington	5.05	10.99	6.09	0.77	1.90	2.69	2.02	1.34
Wayne	2.43	2.18	1.17	0.48	0.77	1.02	1.08	1,12
REGIONAL TOTALS	16.46	25.35	22.26	7.88	11.69	13.46	16.33	11.84
Northeastern Req.	ion							
Daggett	2.20	1.84	5.58	4.41	2.82	3.21	2.37	3.28
Duchesne	13.17	9.21	7.05	7.68	9.43	12.37	8.55	10.98
Uintah _	14.23	5.87	3.35	7.03	13.20	19.31	13.44	9.10
REGIONAL TOTALS	29.61	16.93	15.97	19.13	25.45	34.89	24.27	23.36
Southeastern Reg:								
Carbon	4.90	7.30	4.87	6.26	4.65	4.56	5.83	5.04
Emery	4.69	9.76	9.53	5.63	5.91	3.78	4.20	3.26
Grand	5.99	4.16	5.07	2.53	0.74	0.26	0.66	0.66
San Juan	4.66	3.41	6.90	2.90	0.77	1.43	2.33	3.15
REGIONAL TOTALS	20.25	24.64	26.37	17.34	12.09	10.04	13.02	12.12
Unknown counties	0.00	0.68	0.25	2.66	2.24	0.24	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 6. Percentage distribution of cottontail rabbit harvest by region and county, 1984-91.

Region and				· ·	Year			
<b>County</b>	1984	1985	1986	1987	1988	1989	1990	199;
Northern Region					-			
Box Elder	7.77	5.40	6.52	8.17	10.53	7.34	9.00	9.33
Cache	0.72	0.66	1.18	0.73	1.15	0.93	1.67	1.53
Davis	0.21	1.42	0.08	0.09	0.37	0.09	0.09	0.13
Morgan	0.63	1.37	1.65	0.19	0.20	0.27	0.15	0.36
Rich	1.32	1.11	2.24	0.57	0.87	1.84	3.28	2.12
Summit	1.74	2.13	1.61	0.57	1.30	1.64	1.19	2.16
Weber	0.84	1.33	0.68	0.73	1.06	0.68	0.35	0.69
REGIONAL TOTALS	13.23	13.42	13.97	11.07	15.51	12.80	15.74	16.33
Central Region							· · ·	
Juab	3.84	2.39	3.05	4.26	6.15	5.48	5.15	6.10
Salt Lake	2.67	1.46	0.72	1.36	1.46	0.39	1.17	0.6
Sanpete	1.74	2.26	3.30	6.45	3.57	4.41	5.35	2.98
Tooele	11.43	12.98	11.68	12.63	15.44	16.16	14.61	18.3
Utah	6.78	8.24	6.81	13.07	12.83	7.61	10.50	8.4
Wasatch	1.35	2.13	1.82	1.94	1.44	0.41	0.86	1.39
REGIONAL TOTALS	27.82	29.46	27.38	39.73	40.90	34.45	37.63	37.9
Southern Region								
Beaver	1.20	1.68	1.52	1.36	0.73	1.27	0.51	1.7
Garfield	0.57	0.40	2.03	0.54	0.46	1.77	1.54	0.2
Iron	1.26	1.33	2.84	0.85	1.51	1.41	2.27	1.3
Kane	0.96	0.62	1.82	0.82	0.92	1.61	1.36	1.9
Millard	4.20	4.30	5.08	6.07	4.24	2.91	3.72	4.9
Piute	0.18	0.13	0.25	0.12	0.27	0.41	0.62	0.1
Sevier	0.72	1.42	1.35	1.68	2.43	2.25	2.88	3.6
Washington	5.52	6.60	5.42	1.17	1.40	3.91	3.10	2.6
Wayne	1.29	0.97	0.63	0.57	0.80	1.27	1.10	1.2
REGIONAL TOTALS	15.91	17.46	20.95	13.23	12.81	16.82	17.10	17.8
Northeastern Regi	Lon							
Daggett	1.89	1.19	2.37	2.00	1.44	2.57	1.80	2.4
Duchesne	8.34	9.44	5.80	6.74	6.13	10.91	6.36	6.8
Uintah	9.87	7.84	5.71	5.34	8.81	8.05	7.55	7.6
REGIONAL TOTALS	20.11	18.48	13.88	14.09	16.38	21.52	15.71	16.9
Southeastern Regi	Lon							
Carbon	9.66	6.82	8.34	6.68	5.60	6.20	5.55	3.8
Emery	6.12	9.92	7.58	8.08	5.15	6.23	5.39	4.2
Grand	3.99	1.55	3.30	1.81	0.56	0.34	0.57	0.5
San Juan	3.15	2.48	4.53	1.62	0.72	1.48	2.31	2.2
REGIONAL TOTALS	22.93	20.78	23.74	18.19	12.04	14.25	13.82	10.9
Unknown counties	0.00	0.40	0.08	3.65	2.33	0.16	0.00	0.0
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 7. Percentage distribution of cottontail rabbit hunting pressure by region and county, 1984-91.

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	Total	Total	Hunter-Days	<b>Cottontails Per</b>	Cottontails Pe
Year	Hunters	Harvest	Afield	Hunter-Day	Hunter
967	23,249	181,812	92,681	1.95	7.79
1968	26,889	225,450	93,126	2,42	8.38
1969	29,760	184,034	119,596	1.54	6.18
1970	24,486	195,248	103,725	1.86	7.97
1971	30,824	239,511	145,287	1.65	7.78
1972	22,835	155,102	105,941	1.46	6.79
1973	20,109	88,603	87,036	1.02	4.41
1974	22,737	86,506	85,499	1.01	3.80
1975	24,803	154,182	116,707	1.32	6.22
1976	28,239	235,952	126,737	1.86	8.39
1977	35,831	269,263	157,257	1.71	7.51
L978	35,590	401,071	163,019	2.46	11,27
1979	33,385	200,223	127,497	1.57	6.00
1980	25,156	127,652	87,051	1.47	5.07
1981	25,906	149,765	104,183	1.44	5.78
982	26,714	156,696	105,644	1.48	5.87
983	22,467	180,767	96,151	1.88	8.05
984	18,616	69,186	67,643	1.02	3.72
.985	14,059	31,397	48,371	0.65	2.23
1986	13,992	40,636	48,694	0.83	2.90
987	20,322	110,411	77,047	1.43	5.43
988	24,076	150,386	97,190	1.55	6.25
1989	22,878	120,075	91,264	1.32	5.25
1990	23,070	127,389	93,515	1.36	5.52
991	21,137	111,407	82,772	1.35	5.27
Fotals					
(1967-91)	617,130	3,992,724	2,523,633	-	<u> </u>
Averages					
(1967-90)	24,833	161,722	101,703	1.51	6.19

 Table 8. Statewide summary of cottontail rabbit harvest statistics, 1967-91.

Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total         Total <th< th=""><th>Rabbits/ s 100 Hr</th><th></th><th></th><th>CUMPAGE MURIC</th><th></th><th></th><th></th></th<>	Rabbits/ s 100 Hr			CUMPAGE MURIC			
Nature         Nature         Nature         Nature           der         13         28         26         36           der         13         28         26         36           an         1         2         1         1           an         1         2         2         1           and         1         2         2         3         3           bit         1         2         2         2         1           bit         1         2         2         1         1           bit         1         30         23         3         3           bit         1         30         23         3         1           bit         1         2         1         1         1           bit         1         1         2         1         1           bit         1		Complete	Total	Total	Total	Rabbits/	Rabbits/
Ider     13     28     26     36       an     -     -     -     -     -       and     Region     -     -     -     -       and     -     -     -     -     -       and <td></td> <td>Hunts</td> <td>Hunters</td> <td>Hours</td> <td>Rabbits</td> <td>100 Hr</td> <td>Hunter</td>		Hunts	Hunters	Hours	Rabbits	100 Hr	Hunter
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Kegion and County	100 Hr	Hunter	100 Hr	Hunter	100 Hr	Hunter	Hunter	100 Hr	Hunter	100 Hr	Hunter	100 Hr
Northern Region											·	
Box Elder	¢	0.00	28	1.43	44	1.84	314	3.14	25	1.50	313	3.57
Cache	1	1	I	ł	I	ł	I	ı	ł	1	ı	1
Davis	ł	I	:	1	ł	I	100	1.25	ł	ł	1	1
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Central Region												
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Salt Lake	ł	I	ı	1	ł	ł	ł	ł	ı	1	ł	ı
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Southern Region												
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Northeastern Region												
Daggett	1	;	¢	3.33	379	8.00	1	ı	1	ł	i	1
Duchesue	0	00.0	8	3.33	104	2.94	1	I ,	450	<b>00.</b> 6	<b>\$</b>	1.38
Uintah	100	1.50	70	1.76	147	4.00	93	2,20	179	8.10	ঙ	1.91
REGIONAL TOTALS	<b>S</b> 0	0.75	89	1.93	149	4.01	93	0.73	187	5.10	61	1.77
Southeastern Region												
Carbon	158	3.80	1	I	0	0.0	1	:	1	1	I	I
Emery	33	1.00	1	1	33	1.00	ł	:	:	ı	1	I
Grand	:	ł	1	ł	4	0.83	:	ı	;	I	I	I
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REGIONAL TOTALS	133	3.33	1	1	32	0.67	1	L	1	1	1	1

### SNOWSHOE HARE

#### <u>Harvest</u>

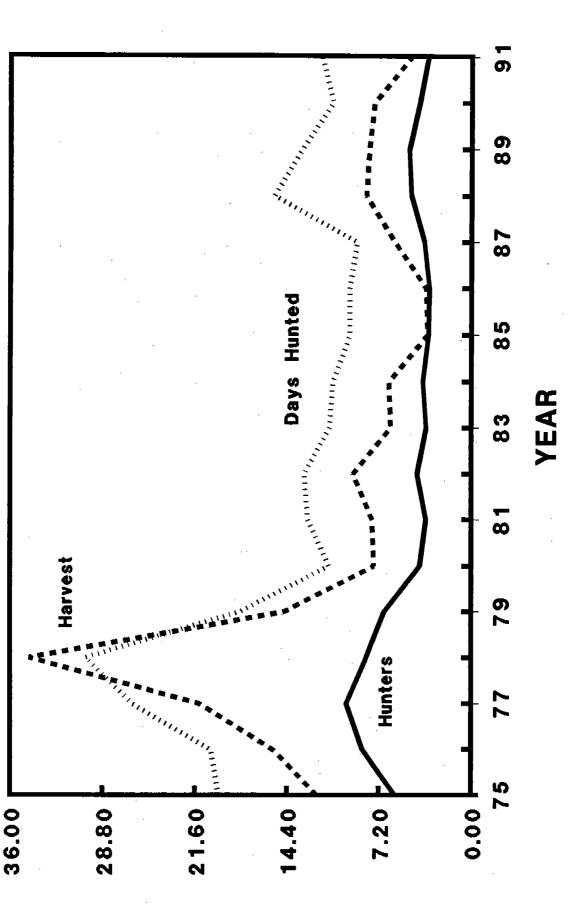
Results of the 1991 hunter questionnaire are found in Table 11. Trends of snowshoe hares bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) are found in Tables 12-14. Trend in statewide harvest statistics by year are shown in Table 15 and Figures 1 and 2. The 1991 season compared to 1990 and the 16-year average follow:

		Percent	<u>change from</u>
	<u>1991</u>	1990	Average
Snowshoe hare hunters	3,427	-16	-33
Snowshoe hares harvested	4,731	-38	-56
Hunter-days afield	11,742	+8	-22
Snowshoes per hunter-day	0.40	-43	-39
Snowshoes per hunter	1.38	-25	-29

Significant misidentification of white-tailed jackrabbits as snowshoe hares was anticipated prior to mailing the harvest questionnaire following the first season in 1975. This proved to be the case as a significant harvest of snowshoe hares was reported for counties outside the known range of the species. It was assumed that the problem was statewide, not just confined to those counties. Several attempts were made in the 1970's to reduce misidentification through pictures and descriptions in leaflets and questionnaires.

Beginning in 1988, harvest questionnaires, and in 1989 the Upland Game Proclamation had drawings and descriptions of the various rabbits in an attempt to reduce misidentification. We believe this has been successful. However, use of a color print insert would be better.

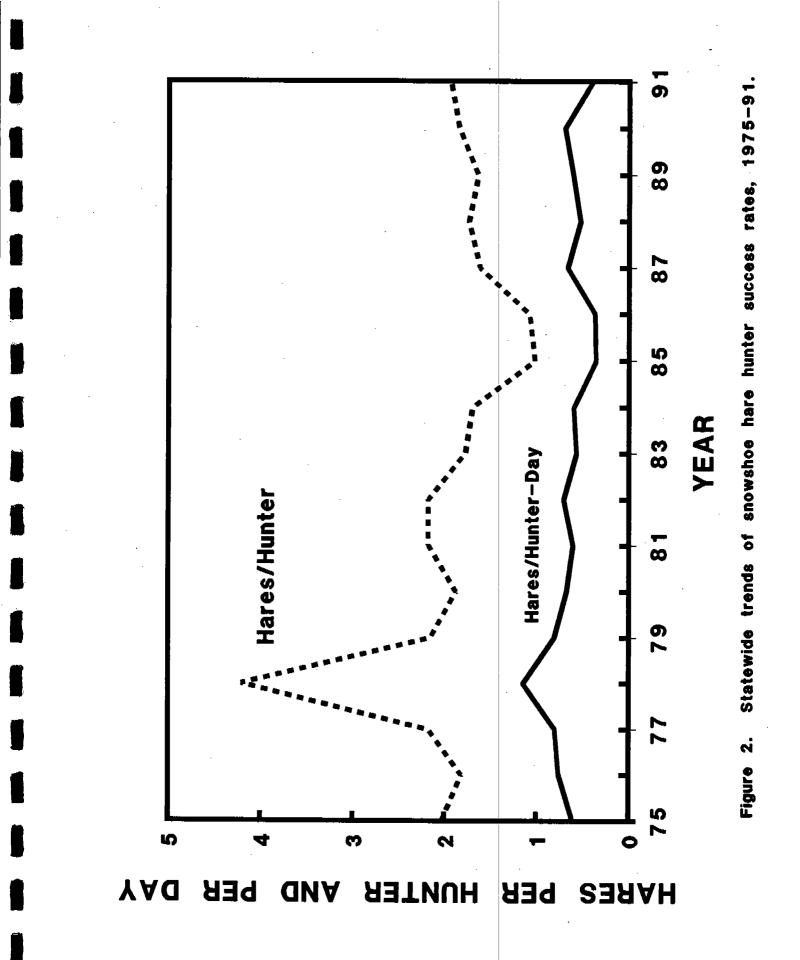
Results of the 1991 harvest questionnaire indicates a 43 percent decrease in hunter success compared to 1990. Success was below the 16-year average, even though hunters spent 8 percent more time afield in 1991.



Statewide trends of snowshoe hare harvest statistics, 1975-91.

Figure 1.

TOTAL (X 1,000)



REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	SNOWSHOES BAGGED	SNOWSHOES PER HUNTER-DAY	۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰	そ OF HARVEST
NODENEDN DECTON		<b></b>				
NORTHERN REGION		005	212	0.38	7.11	<i>c c</i> 2
BOX ELDER	21	835	313		6.37	6.62
CACHE	15	748	226	0.30		4.78
DAVIS	2	539	17	0.03	4.59	0.37
MORGAN	3	104	226	2.17	0.89	4.78
RICH	18	730 [′]	956	1.31	6.22	20.22
SUMMIT	17	869	208	0.24	7.41	4.41
WEBER	4	347	86	0.25	2.96	1.84
REGIONAL TOTALS	80	4,175	2,035	0.49	35.56	4.3.02
CENTRAL REGION						
JUAB	3	139	69	0.50	1.19	1.47
SALT LAKE	2	156	34	0.22	1.33	0.74
SANPETE	16	695	539	0.78	5.93	11.40
TOOELE	16	1,200	417	0.35	10.22	8.83
UTAH	14	365	260	0.71	3.11	5.52
WASATCH	19	782	173	0.22	6.67	3.68
REGIONAL TOTALS	70	3,340	1,496	0.45	28.45	31.62
SOUTHERN REGION	•	2.4		0.00	0.20	0.00
BEAVER	1	. 34 .	0	0.00	0.30	0.00
GARFIELD	2	52	52	1.00	0.44	1.10
IRON	0	0	0	0.00	0.00	0.00
KANE	1	17	0	0.00	0.15	0.00
MILLARD	0	0	0	0.00	0.00	0.00
PIUTE	1	34	0	0.00	0.30	0.00
SEVIER	14	800	487	0.61	6.82	10.30
WASHINGTON	0	0	0	0.00	0.00	0.00
WAYNE	4	156	69	0.44	1.33	1.47
REGIONAL TOTALS	23	1,095	608	0.56	9.33	12.87
NORTHEASTERN REG						
DAGGETT	5	382	52	0.14	3.26	1.10
DUCHESNE	9	1,617	295	0.18	13.78	6.25
UINTAH	11	608	86	0.14	5.19	1.84
REGIONAL TOTAL	25	2,609	434	0.17	22.22	9.19
SOUTHEASTERN REG	ION					
CARBON	7	330	69	0.21	2.81	1.47
EMERY	7	191	86	0.45	1.63	1.84
GRAND	0	0	0	0.00	0.00	0.00
SAN JUAN	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	14	521	156	0.30	4.44	3.31
UNKNOWN	0	0	0	0.00	0.00	0.00
 STATE TOTALS	212	11,742	4,731	0.40	100.00	100.00

Table 11. Summary of snowshoe hare hunter success and distribution of harvest and hunting pressure by region and county, 1991.

*Total hunter trips from questionnaire returns.

Region and					Year			
County	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region	<b>.</b>	<b>•</b> - •						
Box Elder	2.93	0.14	0.38	0.35	0.78	0.33	0.54	0.38
Cache	1.27	0.75	0.00	1.67	0.21	1.10	0.56	0.30
Davis	0.29	0.11	0.50	0.25	0.40	1.50	0.00	0.03
Morgan	0.14	0.00	0.03	0.00	0.67	0.36	0.80	2.17
Rich	0.58	0.06	0.56	1.27	0.33	0.51	0.76	1.31
Summit	0.61	0.63	0.29	0.50	0.36	0.73	1.05	0.24
Weber	0.31	0.17	1.00	0.38	0.25	0.50	0.25	0.25
REGIONAL TOTALS	1.30	0.33	0.29	0.76	0.40	0.63	0.70	0.49
<u>Central Region</u>								
Juab	0.33	0.00	1.44	0.00	0,17	0.00	0.53	0.50
Salt Lake	0.23	0.17	0.30	0.00	0.48	0.38	0.00	0.22
Sanpete	0.80	0.23	0.30	0.57	0,68	0.64	1.08	0.78
Tooele	0.68	0.24	0.21	0.75	0.28	0.77	0.32	0.35
Utah	0.71	0.64	0.53	0.39	0.44	0.37	0.51	0.71
Wasatch	0.44	0.32	0.68	0.56	0.77	1.00	0.17	0.22
REGIONAL TOTALS	0.55	0.33	0.54	0.48	0.50	0.65	0.55	0.45
Southern Region								
Beaver	0.00	0.00	0.00	0.00	0,00	0.00	0.50	0.00
Garfield	0.00	0.40	0.11	0.00	0.00	0.35	0.67	1.00
Iron	3.00	0.50	0.00	0.00	0,00	0.00	0.00	0.00
Kane	0.00	0.75	0.00	0.00	0,00	0.00	0.00	0.00
Millard	0.00	0.00	1.00	2.80	1,20	1.00	0.00	0.00
Piute	0.20	0.00	0.00	0.00	3,00	0.64	0.43	0.00
Sevier	0.00	0.25	0.63	0.60	0,75	0.55	0.96	0.61
Washington	0.00	0.50	0.00	0.00	2,00	0.00	0.00	0.00
Wayne	1.22	1.00	0.38	1.14	0.00	0.50	0.39	0.44
REGIONAL TOTALS	0.65	0.46	0.45	0.88	0.47	0.50	0.62	0.56
Northeastern Regi								
Daggett	0.33	1.00	0.50	1.00	1,96	1.00	0.50	0.14
Duchesne	0.43	0.30	0.41	0.65	0.63	0.54	1.33	0.18
Uintah	0.20	0.49	0.13	1.31	0.89	0.23	0.88	0.14
REGIONAL TOTALS	0.30	0.41	0.28	0,91	1.02	0.40	1.17	0.17
Southeastern Regi			·		•		·	
Carbon	0.13	0.29	0.09	1.00	0.46	1.00	0.71	0.21
Emery	0.19	0.67	0.13	0.57	0.94	0.54	0.37	0.45
Grand	0.00	0.00	0.75	0.00	0.00	0.00	2.00	0.00
San Juan	2.00	0.00	1.00	5.00	1.00	1.67	0.00	0.00
REGIONAL TOTALS	0.17	0.37	0.16	0.81	0.83	0.77	0.56	0.30
Unknown counties	0.00	0.00	0.00	0.40	0.42	0.00	0.00	0.00
STATE TOTALS	0.60	0.36	0.37	0.67	0.53	0.61	0.70	0.40
				· · · ·				

Table 12. Summary of snowshoe hare bagged per hunter-day by region and county, 1984-91.

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Region and	1004	1005			Year			
County	1984	1985	1986	1987	1988	1989	1990	<u> </u>
Northern Region								
Box Elder	36.79	3.12	3.49	3.26	14.80	3.11	10.57	6.62
Cache	4.40	3.73	0.00	10.20	4.86	11.40	5.15	4.78
Davis	0.62	1.87	0.58	0.40	1.21	0.78	0.00	0.37
Morgan	0.31	0.00	0.58	0.00	0.40	1.04	1.08	4.78
Rich	2.20	0.61	5.80	7.75	3.24	7.77	14.09	20.22
Summit	7.85	24.99	6.98	4.89	6.08	4.15	11.11	4.41
Weber	1.25	1.22	5.23	1.22	1.82	1.30	0.27	1.84
REGIONAL TOTALS	53.46	35.61	22.67	27.75	32.45	29.54	4 42.28	43.02
Central Region								
Juab	0.62	0.00	13.37	0.00	0.81	0.00	2.71	1.47
Salt Lake	0.93	0.61	1.74	0.00	2.43	0.78	0.00	0.74
Sanpete	1.25	1.87	5.80	6.93	10.14	9.33	7.05	11.40
Tooele	4.07	5.60	3.49	4.89	3.24	8.55	3.25	8.83
Utah	6.91	9.97	14.53	8.57	6.89	3.89	4.88	5.52
Wasatch	5.02	3.73	14.53	8.16	8.31	6.22	0.27	3.68
REGIONAL TOTALS	18.87	21.87	53.49	28.57		28.76	18.16	31.62
Southern Region				20107		20.70		51.02
Beaver	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00
Garfield	0.00	1.22	0.58	0.00	0.00	1.81	1.08	1.10
Iron	0.93	1.22	0.00	0.00	0.00	0.00	0.00	0.00
Kane	0.00	1.87	0.00	0.00	0.00	0.00	0.00	0.00
Millard	0.00	0.00	2.33	5.71				
Piute	0.00	0.00		0.00	1.21	1.55	0.00	0.00
			0.00		1.21	1.81	0.81	0.00
Sevier	0.00	1.22	2.91	2.44	1.82	2.85	7.05	10.30
Washington	0.00	2,48	0.00	0.00	0.40	0.00	0.00	0.00
Wayne	6.91	2.48	1.74	3.26	0.00	4.66	3.25	1.47
REGIONAL TOTALS	8.16	10.62	7.56	11.42	4.66	2.69	12.47	12.87
Northeastern Reg.								
Daggett	0.31	3.12	0.58	0.81	9.53	0.26	0.54	1.10
Duchesne	8.16	9.97	6.98	6.93	6.28	6.74	16.26	6.25
Uintah _	5.34	11.87	2.33	8.57	5.07	2.33	3.79	1.84
REGIONAL TOTALS	13.83	24.99	9.88	16.32	20.89	9.33	20.60	9.19
Southeastern Reg.	ion							
Carbon	3.45	4.37	2.33	5.71	1.21	10.88	2.71	1.47
Emery	0.93	2.48	1.16	6.53	6.49	7.51	2.71	1.84
Grand	0.00	0.00	1.74	0.00	0.00	0.00	1.08	0.00
San Juan	1.25	0.00	1.16	2.04	1.41	1.30	0.00	0.00
REGIONAL TOTALS	5.65	6,85	6.40	14.28	9.12	19,69	6.50	3.31
Unknown counties	0.00	0.00	0.00	1.63	1.01	0.00	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 13. Percentage distribution of snowshoe hare harvest by region and county, 1984-91.

Region and			·····		Year		·	· · · · ·
County _	1984	1985	1986	1987	1988	1989	1990	1991
Northern Region				<u> </u>		1705	4790	<u> </u>
Box Elder	7.49	8.34	3.46	6.30	10.16	5.64	13.69	7.11
Cache	2.06		2.81	4.10	12.64	6.27	6.46	6.37
Davis	1.31	6.09	0.43	1.09	1.62	0.31	0.19	4.59
Morgan	1.31	2.25	7.78	0.27	0.32	1.72	0.95	0.89
Rich	2.24	3.60	3.89	4.10	5.18	9.25	12.93	6.22
Summit	7.68	14.22	8.86	6.57	9.08	3.45		7.41
Weber	2.43	2.71	1.94	2.19	3.89	1.57	0.76	2.96
REGIONAL TOTALS	24.53	39.05	29.16	24.65	42.91	28.21	42.40	35.56
Central Region						20.21	46.40	
Juab	1.12	1.13	3.46	0.54	2.59	0.00	3.61	1.19
Salt Lake	2.43	1.35	2.16	2.19	2.70	1.25	0.00	1.33
Sanpete	0.93	2.93	7.13	8.21	8.00	8.78	4.56	5.93
Tooele	3.55	8.34	6.05	4.38	6.27	6.74	7.03	10.22
Utah	5.80	5.64	10.15	14.79	8.43	6.43	6.65	3.11
Wasatch	6.73	4.29	7.99	9.86	5.72	3.76	1.14	6.67
REGIONAL TOTALS	20.60	23.70	36.93	40.00	33.72	26.96	23.00	28.45
Southern Region								20.45
Beaver	1.31	0.00	0.00	0.00	1.83	0.63	0.38	0.30
Garfield	0.18	1.13	1.94		0.10	3.13	1.14	0.44
Iron	0.18	0.90	0.00	2.19	0.00	0.00	0.00	0.00
Kane	0.00	0.90	0.00	0.00	0.00	0.00	0.00	0.15
Millard	0.18	0.90	0.86	1.36	0.54	0.94	0.19	0.00
Piute	0.93	0.00	0.00	0.27	0.21	1.72	1.33	0.30
Sevier	1.31	1.80	1.73	2.73	1.29	3.13	5.13	6.82
Washington	0.00	1.80	0.00	0.00	0.10	0.16	0.00	0.00
Wayne	3.37	0.90	1.73	1.91	1.18	5.64	5.89	1.33
REGIONAL TOTALS	7.49	8.34	6.26	8.76	5.29	15.36	14.07	9,33
Northeastern Reg		•				10100	14.07	
Daggett	0.55	1.13	0.43	0.54	2.59	0.16	0.76	3.26
Duchesne	11.42	12.19	6.26	7.12	5.29	7.52	8.56	13.78
Uintah	15.73	8.80	6.48	4.38	3.02	6.27	3.04	5.19
REGIONAL TOTALS	27.71	22.12	13.17	12.04	10,91	13.95	12.36	22.22
Southeastern Reg.					<u> </u>	20.75	<u>+</u> 2.50	<u> </u>
Carbon	16.10	5.41	9.94	3.83	1.40	6.58	2.66	2.81
Emery	2.99	1.35	3.24	7.67	3.67	8.46	5.13	1.63
Grand	0.18	0.00	0.86	0.00	0.00	0.00	0.38	0.00
San Juan	0.37	0.00	0.43	0.27	0.75	0.47	0.00	0.00
REGIONAL TOTALS	19.66	6.76	14.47	11.78	5.83	15.52	8.17	4.44
Unknown counties		0.00	0.00	2.73	1.29	0.00	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 14. Percentage distribution of snowshoe hare hunting pressure by region and county, 1984-91.

	Total	Total	Hunter-Days	Hares Per	Hares Per
Year	Hunters	Harvest	Afield	Hunter-Day	Hunter
1975	5,961	12,072	19,770	0.61	2.03
1976	8,502	15,500	20,367	0.76	1.82
1977	9,752	21,232	26,535	0.80	2.18
1978	8,205	34,535	30,155	1.15	4.21
1979	6,787	14,641	18,115	0.81	2.16
1980	4,048	7,603	. 11,140	0.68	1.88
1981	3,554	7,750	12,782	0.61	2.18
1982	4,245	9,257	13,073	0.71	2.18
1983	3,544	6,302	11,088	0.57	1.78
1984	3,796	6,455	10,840	0.60	1.70
1985	3,365	3,429	9,494	0.36	1.02
1986	3,277	3,544	9,541	0.37	1.08
1987	3,702	6,005	8,947	0.67	1.62
1988	4,725	8,231	15,444	0.53	1.74
1989	4,895	8,006	13,233	0.61	1.64
1990	4,095	7,593	10,825	0.70	1.85
1991	3,427	4,731	11,742	0.40	1.38
Totals					
(1975-91)	85,880	176,886	253,091	<u> </u>	
Averages					
(1975-90)	5,153	10,760	15,084	0.66	1.94

Table 15. Statewide summary of snowshoe hare harvest statistics, 1975-91.

# <u>A P P E N D I C E S</u>

#### APPENDIX A

#### WEATHER CONDITIONS

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

The 1990-91 winter weather was relatively mild in terms of precipitation and in terms of cold temperature. Below average precipitation fell between December 1990 and February 1990. December 1990 through January 1991 temperatures were well below average. March and May precipitation was above normal, while April, June and July precipitation was below normal across the state.

Overall, temperatures remained below average April through June, while precipitation averages stayed mostly normal.

Weather Division Jan reo Mar Apr May Jun Jun Aug Sep Oct 190	Jan	Feb	Mar	Apr	May	nıf	P	Aug	Sep	ð	Nov	Dec
No.1 Western												
Normal	26.9	32.7	38.7	47.0	56.5	65.7	74.4	72.0	62.4	50.5	37.2	28.4
1991	21.8	35.4	39.0	45.4	53.6	64.7	75.2	74.0	62.4	50.7	36.6	24.3
Departure (degrees)	-5.1	2.7	0.3	-1.6	-2.9	-1.0	9.0	2.0	0.0	0.2	-0.6	-4.1
No.2 Dixie												
Normal	38.7	43.9	48.8	56.4	65.4	75.2	82.0	7.9.7	72.6	61.5	47.8	39.8
1991	38.5	50.7	45.9	55.9	63.0	73.2	82.9	81.1	74.5	64.0	47.S	40.2
Departure (degrees)	-0.2	6.8	-2.9	-0.5	-2.4	-2.0	0.9	1.4	1.9	2.5	-0.3	9.4
No.3 North Central												
Normal	27.0	31.9	38.6	47.4	57.1	62.9	74.6	72.2	63.1	51.3	38.0	28.9
1991	22.3	34.1	40.4	45.8	53.7	65.6	75.7	74.8	62.7	51.8	37.2	26.4
Departure (degrees)	-4.7	2.2	1.8	-1.6	-3.4	-0.3	1.1	2.6	-0,4	0.5	-0.8	-3.5
No.4 South Central												
Normal	27.0	31.6	38.6	44.9	54,0	63.1	70.4	68.0	60.2	49.8	37.1	28.8
1991	23.0	35.4	36.3	43.2	51.0	62.0	11.1	69.0	60.4	50.4	36.0	27.9
Departure (degrees)	4.0	3.8	-2.3	-1.7	-3.0	-1.1	0.7	1.0	<b>0.2</b>	9.6	-1.1	<del>0</del> .0-
No.5 Northern Mountains												
Normal	21.2	24.7	30.6	40.0	49.6	57.6	65.3	63.1	55.0	44.9	32.0	23.6
1661	18.2	28.6	32.0	38.3	48.5	58.6	66.2	65.8	55.9	45.3	31.7	22.2
Departure (degrees)	-3.0	3.9	1.4	-1.7	-1.1	1.0	0.9	2.7	0.9	0.4	-0.3	-1.4
No.6 Uintah Basin				•								
Normal	17.2	24.1	35.5	46.2	56.2	64.9	72.1	69.3	60.3	48.5	33.5	21.2
1991	10.5	24.9	37.4	45.1	55.7	64.9	71.4	70.4	61.0	49.1	32.3	21.1
Departure (degrees)	-6.7	0.8	1.9	-1.1	-0.5	0.0	-0.7	1.1	0.7	0.6	-1.2	-0.1
No.7 Southeast												
Normal	27.0	33.8	41.0	50.2	59.8	69.7	76.6	73.8	65.4	53.7	39.5	29.3
1661	21.8	34.9	40.5	48.6	59.1	69.69	76.5	75.1	66.3	55.5	37.8	27.6
Departure (degrees)	-5.2	1.1	-0.5	-1.6	-0.7	0.1	-0.1	1.3	0.9	1.8	-1.7	-1.7
STATE AVERAGES												
Normal	26.4	31.8	38.6	47,4	56.9	66.0	73.6	71.2	62.7	51.5	37.9	28.6
1661	22.3	34,9	38.8	46.0	54.9	65.5	74.1	72.9	63.3	52.4	37.0	27.1
Donartsina (domooc)	11	•	• •	•	•	1	•		ç	¢	•	

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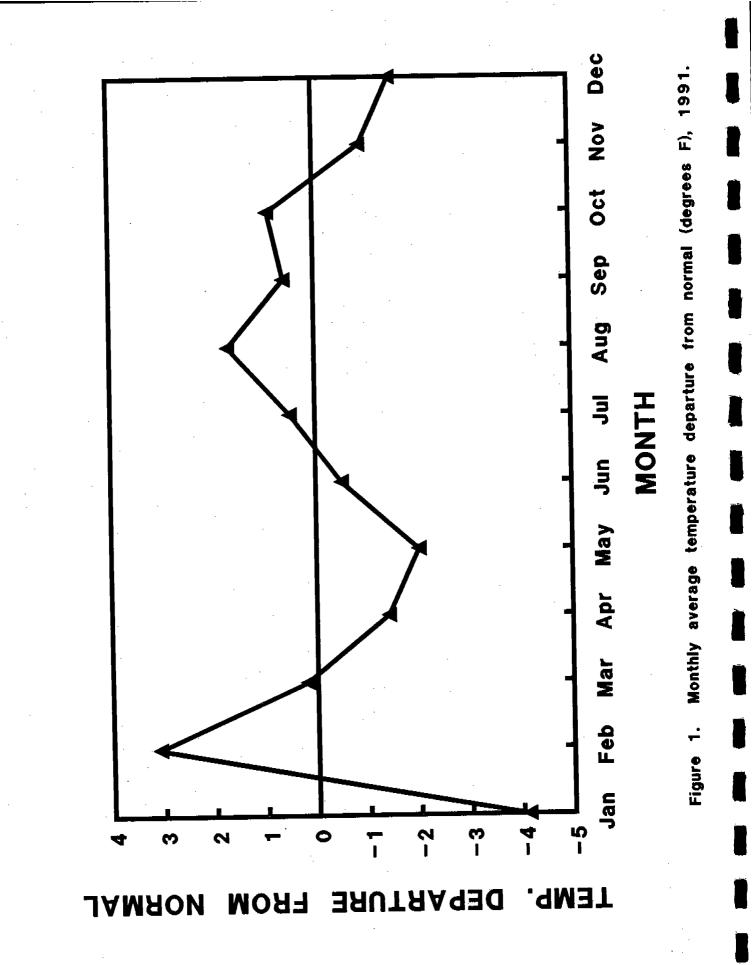
Dec 0.38 -0.16 0.85 0.96 -0.11 1.41 0.67-0.74 0.50-0.47 0.54 1.98 0.48 -1.50 0.25 -0.36 0.74 0.920.18 1.03 0.97 0.61 0.6 -0.45 AON 0.62 0.840.22 0.72 6.0 -0.27 1.34 1.20 2.31 0.970.98 0.22 1.62 0.79 0.49 -0.05 1.19 2.41 0.54 0.73 0.46 0.970.341.3 0.65 1.13 0.48 0.25 ð 2.08 0.77 0.921.26 0.34 1.45 0.78 1.03 1.31 1.97 0.52 0.870.68 -0.19 1.09 1.00 -0.09 1.01 1.3 0.30 

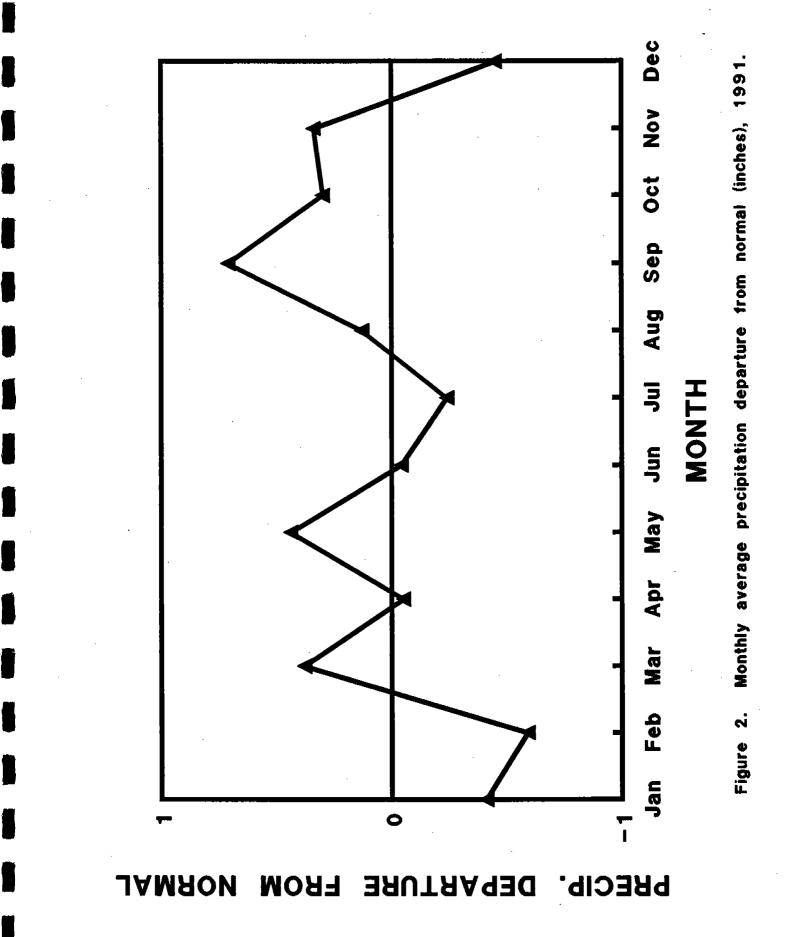
 Table 2. Comparison of 1991 monthly average precipitation to the normal for each weather division and statewide.

 Weather Division
 Jan
 Feb
 Mar
 Apr
 May
 Jun
 Jul
 Aug
 Sep
 Or

 0.38 0.55 0.93 0.76 1.65 0.89 66.0 2.18 1.19 1.42 0.421.15 2.23 1.08 1.05 0.34 1.00 0.71 0.78 1.44 0.66 0.85 1.6 0.71 0.72 0.82 0.10 0.61 -0.40 0.95 0.29 1.01 1.24 1.59 0.28 1.31 1.23 0.54 0.85 1.05 1.77 0.81 0.041.07 1.1 0.13 1.01 0.35 -0.28 0.63 0.78 0.41 -0.37 0.65 0.33 -0.32 0.56 -0.40 0.96 0.88 0.63 -0.25 0.54 0.58-0.04 0.77 0.76 0.75 -0.01 0.5 -0.24 0.67 0.76 0.0 0.360.28 -0.08 1.19 0.97 -0.22 0.54 0.36 -0.18 1.36 0.19 0.69 -0.03 0.40 0.72 -0.09 1.17 0.31 0.72-0.04 0.7 0.95 1.86 -0.39 0.91 0.66 0.27 1.6 3.05 1.45 0.941.44 0.501.54 2.53 **66**.0 0.78 -0.19 0.590.67 0.41 -0.26 1.5 0.441.01 0.10 0.09-0.73 2.48 0.91 0.821.96 0.52 1.04 0.77 -0.27 1.88 2.22 0.340.680.790.19 0.81 0.11 0.61 -0.42 1.11 -0.05 1.1 0.52 -0.22 3.03 0.74 1.42 1.61 1.6 1.55 -0.05 1.15 0.37 2.24 0.35 1.52 1.89 0.57 0.62 0.05 0.64 1.13 0.491.14 1.5 0.38-0.33 0.24 0.60-0.76 0.57 1.36 1.39 0.86 -0.53 1.06 0.41 -0.65 1.92 0.73 -1.19 -0.28 0.45 0.170.19 0.61 -0.42 1.05 0.5 -0.59 0.59 0.48-0.11 1.35 -0.54 1.56 1.08 -0.48 0.81 1.09 0.66 -0.43 2.16 1.15 -1.01 0.200.72 0.76 0.51-0.31 1.14 0.040.7 -0.41 No.5 Northern Mountains Departure (inches) STATE AVERAGES No.4 South Central No.3 North Central Departure (inches) Weather Division **Departure (inches)** Departure (inches) No.6 Uintah Basin Departure (inches) Departure (inches) Departure (inches) Departure (inches) No.1 Western No.7 Southeast Normal Normal Normal No.2 Dixie Normal Normal Normal Normal Normal 1991 1991 1991 1991 1991 1991 1991 1991

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#### APPENDIX B

#### LICENSE SALES

Small game license sales by type and cost are listed in Table 1. The number of licenses sold for all types, except resident combination decreased slightly in 1991.

The proportion of Utah's population hunting small game is declining (Table 2). In the early 1970's about 10 percent of Utah's population was hunting small game. By 2000, we project that only about 6 percent will be hunting small game.

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

	Adult		Juv.	Res.	Nor	n Res.		
	Small	Game	Small	Game	Smal	I Game	Combination	Licens
Year	Issued	Cost	Issued	Cost	Issued	Cost	Issued	Cost
1954	12,990	3.50	5,170	2.00	561	15.00	79,574	6.00
1955	12,086	3.50	5,369	2.00	478	15.00	79,960	6.00
1956	12,102	3.50	5,735	2.00	524	15.00	80,968	6.00
1957	12,239	3.50	6,192	2.00	505	15.00	81,271	6.00
1958	14,290	3.50	6,563	2.00	696	15.00	85,198	6.00
1959	13,421	3.50	5,966	2.00	669	15.00	90,069	6.00
1960	12,020	3.50	5,022	2.00	576	15.00	90,085	6.00
1961	12,177	3.50	6,108	2.00	617	15.00	88,180	6.00
1962	12,953	3.50	6,536	2.00	607	15.00	91,412	6.00
1963	13,365	3.50	6,319	2.00	642	15.00	94,768	6.00
1964	13,073	3.50	6,453	2.00	681	15.00	98,556	6.00
1965	12,913	3.50	6,755	2.00	716	15.00	100,410	6.00
1966	13,854	3.50	7,477	2.00	725	15.00	103,849	6.00
<b>1967</b>	18,588	4.50	12,851	2.50	652	20.00	86,218	10.00
1968	20,647	4.50	15,205	2.50	703	20.00	91,020	10.00
1969	20,221	4.50	15,567	2.50	853	20.00	96,117	10.00
1970	19,564	4.50	15,827	2.50	1,009	20.00	100,467	10.00
1971	20,681	4.50	16,044	2.50	1,000	20.00	102,284	10.00
1972	19,796	4.50	16,523	2.50	1,075	20.00	107,414	10.00
1973	18,836	4.50	16,522	2.50	964	20.00	155,436	10.00
1974	17,434	4.50	16,334	2.50	974	20.00	117,770	10.00
1975	17,057	4.50	15,869	2.50	967	20.00	115,362	10.00
1 <b>9</b> 76	33,078	6.00	16,261	3.00	1,141	20.00	76,587	18.00
1 <b>9</b> 77	36,473	6.00	15,795	3.00	1,270	20.00	74,600	18.00
1978	37,082	6.00	15,419	3.00	1,449	20.00	81,227	18.00
1979	36,721	6.00	14,200	3.00	1,575	20.00	84,450	18.00
<b>1980</b>	30,189	8.00	14,042	4.00	1,330	30.00	100,177	23.00
1981	37,804	8.00	13,874	4.00	1,559	30.00	83,486	23.00
1982	36,850	8.00	14,040	4.00	1,637	30.00	82,970	23.00
1983	39,602	8.00	13,814	4.00	1,685	30.00	73,529	23.00
1984	36,070	8.00	13,170	4.00	1,633	30.00	73,081	23.00
1985	30,102	12.00	12,987	6.00	1,500	40.00	82,137	35.00
1986	29,202	12.00	11,921	6.00	1,274	40.00	67,187	35.00
1987	26,781	12.00	11,228	6.00	1,235	40.00	66,715	35.00
1988	25,733	12.00	9,498	6.00	1,428	40.00	72,846	35.00
1989	25,845	12.00	5,769	6.00	1,422	40.00	74,274	35.00
1990	24,527	12.00	5,682	6.00	1,279	40.00	76,292	35.00
1991	23,276	12.00	5,626	6.00	1,212	40.00	70,2 <i>92</i> 79,165	35.00

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# Table 1. Statewide small game license sales information, 1954-91.

tu	rkey, chukar a	nd Hungarian partridge on	public lands.	, 
<u>.</u>	Utah	<b>Resident Small Game</b>	Proportion	
Year	<b>Population</b>	Licenses Sold 1	Hunting Small Game	
1971	1,101,000	101,421	9.2	
1972	1,135,000	110,691	9.8	
1973	1,169,000	115,129	9.8	١
1974	1,197,000	112,963	9.4	
1975	1,234,000	108,636	8.8	
1976	1,272,000	85,268	6.7	
<b>1977</b>	1,316,000	86,549	6.6	
1978	1,364,000	95,637	7.0	
1979	1,416,000	100,116	7.1	
1980	1,461,037	110,039	7.5	
1981	1,524,830	103,041	6.8	
1982	1,588,622	99,744	6.3	
1983	1,652,415	93,303	5.6	
1984	1,716,207	88,084	5.1	
1985	1,780,000	94,991	5.3	
1986a	1,665,000	82,777	5.0	
1987a	1,678,000	85,099	5.1	
1988	1,695,000	92,677	5.5	
<b>1989</b> a	1,715,000	92,031	5.4	
1 <b>990</b> a	1,722,850	90,532	5.3	
1 <b>991</b> a	1,774,241	89,297	5.0	· . ·
1 <b>995</b> a	1,879,301	105,000	5.6	
2000a	1,992,048	115,000	5.8	

Table 2. Actual (1971-1991) and projected (1995 and 2000) proportion of Utah population hunting small game based upon assumption of improved sportsman access to private lands and successful transplants of

1 Adjusted for waterfowl hunters subtracted from combination licenses,

R.S.G. = Adjusted combination plus juvenile small game plus adult small game.

a Utah Population Estimate Committee Report for July 1 (Office of State Planning Coordinator) Table 3. Small game license sales and income, 1971-91 (JSG=juvenile smalt game, RSG=adult resident small game,

CMB= combination license, NRSG = nonresident small game).

									No. Federal			8		2
		License Fees	Frees			Number of 1	Number of Licences Sold		Duck Stamps	Total Gro	ss Revenues	<b>Fotal Gross Revenues Attributed to Small Game (\$)</b>	Small Gam	e (S)
Year	JSC	RSG	CMB	NRSG	JSG4	RSG	CMB	NRSG	Sold3	JSG4	RSG	CMB2	NRSG	<b>TOTAL1</b>
1971	2.50	4.50	10.00	20.00	16,044	20,681	102,284	1,000	37,588	20,055	93,064	200,557	20,000	313,676
1972	2.50	4.50	10.00	20.00	16,523	19,796	107,414	4,075	33,042	20,653	89,082	230,553	21,500	340,288
1973	2.50	4.50	10.00	20.00	16,522	18,836	115,436	964	35,665	20,652	84;762	247,290	19,280	352,704
1974	2.50	4.50	10.00	20.00	16,334	17,434	117,770	974	38,575	20,417	78,453	245,504	19,480	344,374
197S	2.50	4.50	10.00	20.00	15,869	17,057	115,362	967	39,652	19,836	76,756	234,701	19,340	330,993
1976	3.00	6.00	18.00	20.00	16,261	33,078	76,587	1,141	40,658	24,391	198,468	184,675	22,820	407,534
1977	3.00	6.00	18.00	20.00	15,795	36,473	74,600	1,270	40,319	23,692	218,838	176,204	25,400	418,734
1978	3.00	6.00	18.00	20.00	15,419	37,082	81,227	1,449	38,091	23,128	222,492	221,719	28,980	467,339
1979	3.00	6.00	18.00	20.00	14,200	36,721	84,450	1,575	35,255	21,300	220,326	252,862	31,500	494,488
1980	4.00	8.00	23.00	30.00	14,042	30,189	100,177	1,330	34,369	28,084	241,512	425,120	39,900	694,716
1861	4.00	8.00	23.00	30.00	13,874	37,804	83,486	1,559	32,123	27,748	302,432	331,805	46,770	661,985
1982	4.00	8.00	23.00	30.00	14,040	36,850	82,970	1,637	34,116	28,080	294,800	315,597	49,110	638,477
1983	4.00	8.00	23.00	30.00	13,814	39,602	73,529	1,685	33,642	25,620	305,249	257,670	50,134	588,539
1984	4.00	8.00	23.00	30.00	13,170	36,070	73,081	1,633	34,237	26,340	288,560	250,544	48,990	565,444
1985	6.00	12.00	35.00	40.00	12,987	30,102	82,137	1,500	30,235	38,961	361,224	484,246	60,000	884,431
1986	6.00	12.00	35.00	40.00	11,946	39,567	67,435	1,274	25,533	35,838	354,804	395,973	50,960	786,615
1987	6.00	12.00	35.00	40.00	11,228	26,781	66,715	1,235	19,625	33,684	321,372	439,350	49,400	794,406.
1988	6.00	12.00	35.00	40.00	9,498	25,733	72,846	1,428	15,400	28,494	308,796	535,971	57,120	873,261
1989	6.00	12.00	35.00	40.00	5,769	25,845	74,274	1,422	13,857	17,307	310,140	563,691	56,880	891,138
1990	6.00	12.00	35.00	40.00	5,682	24,527	76,292	1,279	15,969	17,046	294,324	543,986	51,160	855,356
1991	6.00	12.00	35.00	40.00	5,626	23,276	79,165	1,212	18,770	16,878	279,312	563,485	48,480	859,675
1 Value d	loes not in	sclude cou	gar, bear, t	1 Value does not include cougar, bear, turkey permits and		ial hunting	area licenses.	It does not	l commercial hunting area licenses. It does not include NRSG					

nut unture cougar, near, turkey permits and commercial hunting area licenses. It does not include NKNG Revenue-this is assumed to be primarily non-resident bear and cougar hunters.

from combination liceuse sales when projecting revenue generated. The proportion of the combination license fee attributed They may fish and hunt big game but they do not hunt any other small game. Therefore, duck stamp sales are subtracted 2 Combination license values are based on the assumption that all waterfowl lumters purchased only combination licenses. to small game equals the resident small game license fee divided by the resident fishing license fee plus the resident big game license fee plus the resident small game license fee or \$9.33 for 1991.

3 Total Federal duck stamps sold does not include those sold during the second quarter, April-June, because persons purchasing stamps during this quarter tend not to be hunters. 4 Haff of the juvenile small game license sales were attributed to waterfowl hunters. Federal duck stamps are not required of juveniles less than 16 years of age. APPENDIX C: Regional and statewide summary of effort expended on upland game summer surveys.

Generally hours spent and miles driven on upland game surveys in Utah have declined since 1971. This is the result of competing uses of time for biologists and conservation officers. In addition, the restriction to a 40 hour work week by the Fair Standards and Labor Act has further eroded survey effort. When effort and results have reached a lower critical sample size, surveys have been eliminated.

onal and statewide summary
Table 1. Regional ar

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I	Northern		Central		Southern		Northeastern		Southeastern		STATE TOTALS	VIS
Species	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours
Pheasant												
1791	507	:	878	ł	796	:	588	ł	346	:	3,115	1
1972	469	:	<b>6</b> 96	ı	752	1	535	ł	797	ŀ	3,016	1
ET 91	322	ł	169	1	740	1	488	1	230	;	2,471	1
1974	479	1	819	:	848	;	508	ł	317	;	2,971	1
1975	490	1	846	:	566	I	515	1	393	:	3,237	I
1976	476	1	822	ı	577	1	434	:	400	ı	2,905	I
1771	484	:	131	ł	790	:	554	1	343	:	2,902	1
1978	479	:	642	I	654	:	512	:	588	ł	2,875	:
6261	438	ł	642	;	721	1	562	1	209	;	2,572	I
1980	358	1	672	ı	750	1	546	1	270	ı	2,596	1
1981	459	ł	525	;	108	;	535	:	330	1	2,650	ı
1982	437	:	639	1	583	ı	477	1	332	:	2,468	ı
1983	260	;	442	;	780	ł	426	1	330	1	2,238	ı
1984	444	:	359	;	473	ı	463	t	166	:	1,905	I
1985	383	1	303	;	650	ı	492	ı	180	:	2,008	1
1986	455	;	617	1	699	1	520	:	270	:	163,5	1
1987	432	1	518	;	574	1	546	:	\$	:	2,160	I
1988	334	1	436	1	604	ı	469	1	8	;	1,933	I
1989	499	:	427	ı	<b>45</b>	I	403	1	8	1	1,464	1
1990	518	:	509	ı	2	I	240	:	8	:	1,454	t
1991	485	:	496	;	120	ı	375	ı	8	1	1,566	1
Chukar												
1971	182	82	929	130	1,103	100	636	<b>\$</b> 7	496	105	3,346	467
1972	712	16	1,423	131	950	37	1,012	69	984	<b>8</b> 8	5,081	386
1973	1,063	119	1,494	167	Ę	9	705	48	702	89	4,036	412
1974	125	31	1,591	107	564	<b>6</b> 4	440	Ŕ	1,115	67	3,835	278
1975	188	ÐC	808	58	892	41	908	88	786	55	3,582	299
9461	875	75	<u>364</u>	110	465	32	727	67	687	3	3,718	350
1977	405	50	1,198	120	109	37	600	71	429	4	3,233	322
1978	359	28	459	4	135	14	315	53	536	23	1,804	159
1979	546	54	793	76	415	22	293	23	267	14	2,314	189
1980	283	68	1,668	124	235	12	•	0	23	10	2,239	214
1981	330	26	165	49	147	11	245	21	260	32	2	169
1982	473	34	571	35	475	35	260	37	101	6	1,880	171
<b>58</b> 61	17	15	<u>8</u>	17	20	7	488	4	103	-	818	8
1984	654	81	303	32	1	1	;	:	118	16	1,075	129
1985	236	73	453	35	I	I	:	:	174	12	863	121
1986	394	65	432	37	t	I	135	4	1	:	961	116
1987	813	119	398	36	0		305	32	175	. 23	1,691	213
1988	379	35	457	49	8	7	<b>;</b>	1	180	14	1,076	105
6861	105	17	505	8	=	80	:	ł	144	12	765	67
0661	ı	21	1,190	F	ł	1	85	<b>90</b>	235	20	1,510	126
1661	•	•	311	18	•	0	0	¢	225	=	536	50

Table 1 (continued)

Table 1 (continued)	ntinued)					REGION						
•	Northern		Central		Southern		Northeastern		Southeastern		STATE TOTALS	ALS
Species _	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Rours
Sage Grouse	8											
1791	1,743	296	<b>606</b>	145	1,423	98	1,465	<u>4</u>	1,089	128	6,629	811
1972	1,628	323	1,187	143	751	14	2,125	170	1,280	141	6,971	921
1973	3,146	353	927	147	1,171	116	1,952	238	496	41	7,692	568 ·
1974	2,026	321	1,551	115	1,881	193	2,964	248	887	124	9,309	1,001
1975	1,254	249	5963	123	714	226	1,868	236	1,098	131	5,897	965
1976	1,965	281	426	121	379	183	1,881	227	1,222	161	5,873	616
1977	1,966	305	1,370	EE1	465	157	1,995	215	928	116	6,724	926
1978	1,408	267	541	124	490	152	1,616	226	619	5	4,934	<b>3</b> 2
1979	1,051	150	700	132	563	143	1,719	203	279	20	4,312	648
1980	1,003	218	806	150	518	94	1,471	181	278	5	4.076	706
1981	619	194	169	8	285	ST	111	163	377	39	2,743	552
1982	1,669	169	762	6	454	8	862	116	ł	1	3,747	460
1983	610	158	720	2	284	51	202	125	108	10	2,714	805
1984	1,411	278	283	28	289	2	530	ĸ	151	11	2,664	526
1985	2,164	169	481	74	410	<b>4</b> 5	666	2	106	•	3,827	381
1986	1,024	197	281	66	169	43	948	ş	146	14	2,568	387
1987	1,939	205	172	37	286	20	1,114	124	195	18	3,706	434
1988	2,092	177	678	108	315	2	669	16	1	:	3,775	442
1989	465	108	360	56	4	61	557	19	167	24	1,595	268
1990	175	73	44	- 86	8	42	244	30	70	~	1,023	241
1661	554	210	270	21	30	21	99	21	<b>9</b> 8	13	1,000	287
			•						·			
Forest Grou	<b>ā</b> -											
1971	1,201	240	785	173	796	249	794	11	440	8	4,016	828
1972	1,370	212	804	103	214	260	1,346	140	351	82	4,085	L61
1973	627	127	917	105	296	429	949	147	761	72	3,550	<b>9</b> 88
1974	967	152	924	1 <b>5</b> 7	157	461	1,090	8	1,574	[33	4,712	1,002
1975	1,194	<u>1</u> 98	1,287	160	775	629	1,474	136	1,476	135	6,206	1,259
1976	1,516	351	1,503	216	427	271	1,108	140	1,127	134	5,681	1,112
1977	7.37	132	1,317	162	610	286	1,040	135	1,079	128	4,783	843
1978	1,300	297	1,171	129	432	219	1,083	147	626	114	4,612	906
6261	746	344	1,312	177	714	275	729	107	435	42	3,936	945
086T	577	201	1,260	158	160	230	502	74	266	30	2,765	702
1981	688	147	958	147	575	295	835	120	184	29	3,240	738
1982	506	74	1,488	151	I.	354	742	111	1	ł	2,736	696
<b>1983</b>	1,049	218	1,180	53	459	80	636	ĸ	;	20	3,324	504
1984	615	157	364	30	230	78	1	1	I	<del>4</del>	1,209	305
1985	828	202	436	52	564	8		:	ł	4	1,858	384
1986	266	127	380	41	254	51	412	61	ł	1	2,043	280
1987	1,148	147	305	11	200	. 29	438	58	:	;	2,091	347
1988	1,118	<u>4</u>	55	Q	160	53	558	11	ł	1	1,891	274
1989	795	109	635	69	45	<b>6</b> 0	573	75	286	33	2,334	289
0661	171	150	102	113	30	6	185	91			1,087	357
1661	1	178	536	54	30	64	0	Ð	:	2	566	236

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Northern         Northern           Miles         Ijours           88         24           88         24           88         24           88         24           88         192           24         24           88         11           88         11           68         11           67         9           67         9           1,135         126           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,145         156           1,148         156           1,148         156						REGION						
	Ì	ĒTā	Central		Souther	F	Northeast er	F	Southeast	era	STATE TOT	ALS
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				Hours	Miles	Hours	Miles		Miles	Hours	Miles	Honr
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Quail									1		
	-	24	289	40	344	28	587	49	140	13	1,552	154
0       264       25       23       24       23       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24 <td< td=""><td></td><td>6</td><td>342</td><td>30</td><td>575</td><td>66</td><td>870</td><td>89</td><td>120</td><td>œ</td><td>1,953</td><td>149</td></td<>		6	342	30	575	66	870	89	120	œ	1,953	149
4         4         27         83         6         227         23         23         23         24         23         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24 <td></td> <td>10</td> <td>264</td> <td>35</td> <td>32</td> <td>æ</td> <td>538</td> <td>38</td> <td>25</td> <td>17</td> <td>626</td> <td>108</td>		10	264	35	32	æ	538	38	25	17	626	108
8       10       23       84       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       6       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34       34 </td <td></td> <td>4</td> <td>43</td> <td>27</td> <td>853</td> <td>38</td> <td>227</td> <td>28</td> <td>214</td> <td>21</td> <td>1,361</td> <td>146</td>		4	43	27	853	38	227	28	214	21	1,361	146
		90	107	23	841	2	594	43	230	12	1.799	150
4       331       39       44       3       31       3       31       3       31       3       31       3       31       3       31       3       31       3       31       3       31       3       31       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3		10	206	29	503	62	597	4	75	10	1.462	155
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9       265       240       36       410       36       410       36       31       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       <	-	н	s	۲	478	41	346	32	15		1 002	5
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9       9       56       6       29       56       6       29       56       6       29       56       6       29       56       6       29       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5 <td< td=""><td></td><td>0</td><td>151</td><td>14</td><td>304</td><td>4</td><td>475</td><td>44</td><td>¢</td><td></td><td>UEG</td><td>8</td></td<>		0	151	14	304	4	475	44	¢		UEG	8
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250       55       56       6       1         270       23       65       3       1       1         374       39       65       3       1       1         374       39       65       3       1       1       335         374       39       65       1       1       1       1       335         374       39       6       1       1       1       1       1       335         374       39       6       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <td< td=""><td></td><td>27</td><td>37</td><td>6</td><td>:</td><td>1</td><td>:</td><td>I</td><td>ł</td><td>1</td><td>477</td><td>9</td></td<>		27	37	6	:	1	:	I	ł	1	477	9
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382        264        1,038        390        761          2700        270        903        400        580          270        265        903        400        580          270        270        903        400        580          270        270        903        400        580          240        240        722        203        590          240        177        272        240        590            177        276        240        590            177        278        240        240            163        276        240        240	1977	360	1	262	I	1,329	ł	400	1	556	1	2,907	ı
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150     120     669     373     1     240     1       1     1     1     1     129     1     240     1       90     1     664     1     379     1       150     1     666     1     266     1     360     1       90     1     62     1     97     1     210     1       90     1     105     1     105     1     330     1	1986	240	ł	148	ſ	534	1	358	:	330	1	1,610	ł
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Species	Concon D-4	Daily Bag	Possession	
<u>Species</u>	Season Dates	<u>Limit</u>	Limit	Area Open
Pheasant	Nov. 2-15	2 cocks	4 cocks	Statewide.
	Nov. 2-Dec. 1	2 cocks	4 cocks	All state and federal lands (including private lands leased by the Division subject to restrictions and closure imposed by administering agencies) in Carbon, Duchesne, Emery, Grand, Juab, Millard, San Juan, Sanpete, Sevier, Tooele and Uintah counties.
Mourning				
Dove	Sept. 2-30	10	20	Statewide (except lands closed under CLOSED AREAS).
Band-Tailed				
Pigeon	Sept. 2-30	5	10	Beaver, Garfield, Grand, Iron, Kane, Millard, Piute, San Juan, Sanpete, Sevier, Utah, Washington and Wayne counties.
Chukar	Sept.14-Nov. 30	) 5	10	Cache, Morgan, Rich, Sanpete, Summit, Wasatch, and Weber counties and portions of the following counties lying east of Interstate 15: Box Elder, Juab, Millard, Salt Lake, and Utah; those parts of Duchesne and Uintah counties south of Highway SR-40 and west of Highway SR-88 and the Book Cliffs Seep Ridge Road; and that part of Sevier County north of Interstate 70 from Salina to Cove Fort.
	Sept. 14, 1991- Jan. 31, 1992	5	10	Beaver, Carbon, Emery, Garfield, Grand, Iron, Kane, Piute, San Juan, Tooele, Washington and Wayne counties; those parts of Box Elder, Juab, Millard, Salt Lake, and Utah counties lying west of I-15; and that part of Sevier County south of Interstate 70 from Salina to Cove Fort.

APPENDIX D: Season dates, bag limits and areas open by upland game species, 1991.

APPENDIX D	(continued)
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pecies	Season Dates	Daily Bag Limit	Possession Limit	Area Open
-				· · · ·
Sage Grouse	Sept. 14-22	3	. 6	Piute and Wayne counties and that part of Garfiel County beginning at the
				Garfield-Piute county line and Highway SR-22; then southerly on SR-22 to Antimony Creek;
				easterly along this cree and across the Griffin Top to the junction of the Escalante-Bicknell
		· · ·		road; northerly on this road to the Garfield- Wayne county line; westerly along this
				county line to the Garfield-Piute county line; westerly along thi county line to SR-22; ar that part of Sevier
· .	·			County south and west of Interstate 70 and US-89.
	Sept. 14-22	2	4	Beaver, Carbon, Daggett, Grand, Iron, Kane, Rich and Uintah counties;
		· .		those parts of Utah and Duchesne counties beginning near Soldier Summit at the Utah-
				Wasatch county line; the south and east along the county line to Reservation Ridge; east along this ridge to
	· · ·		· .	Argyle Creek; east along this creek to the Duchesne-Carbon county
			· .	line; west along this county line to the drainage divide between
				the Spanish Fork and Price rivers; north alou this drainage divide to the Utah-Wasatch county
				line near Soldier Summit that part of Duchesne County north and east o
				the Duchesne River; that part of Box Elder Count; west of I-15; and Garfield County except
				that part listed in Season Dates (A)(1) of this proclamation.

orest	Sept.	14-	Nov.	30	4	8	Statewide
Grouse	-			(a	.ggregate)	(aggregate)	

## APPENDIX D (continued)

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Species	Season Dates	Daily Bag Limit	Possession Limit	Area Open		
Quail	Nov. 2-15	5 10		Beaver, Box Elder, Carbon, Daggett, Davis, Duchesne, Emery, Garfield, Grand, Iron, Juab, Kane, Millard, Piute, Salt Lake, San Juan, Sevier, Uintah, Utah, Wayne and Weber counties.		
	Nov. 2-Dec. 31	5	10	Washington County.		
Hungarian Partridge	Sept. 14-Nov. 30	5	10	Cache, Davis, Morgan, Rich, Summit, and Weber counties; and that portion of Box Elder County east of Interstat 15.		
Wild Turkey	Sept. 14- Jan. 31, 1992	5	10	Tooele County and that part of Box Elder County west of Interstate 15.		
General Season	May 1-24		Limit 1 e Turkey	Kane and Wayne counties; that part of Grand Count south of the Dolores and Colorado rivers; that part of San Juan County beginning at the LaSal Junction of Highway SR-4 and US-191; then easter! on SR-46 to the Lisbon Valley Road; southeasterly on this road to the Island Mesa Road; easterly on this road to the Island Mesa Road; easterly on this road to the state line; north along this state line to the Grand-San Juan county line; westerly along this county line to its intersection with US-191 southerly on US-191 to the LaSal Junction and SR-46; and those parts of Interstate 15. All of Garfield County except the Tropic area describe in (L) WILD TURKEY (LIMITED ENTRY SEASON) (permit required) below.		
Wild Turkey Limited Entry Seasc	April 11-26 on	Season Male T	Limit 1 urkey	<b>Tropic-</b> Boundary begins at the junction of Bryce		

5 Permits Available Canyon National Park and

## APPENDIX D (continued)

Species	Season Dates	Daily Bag Possessior Limit Limit	Area Open
		in Each Area	the Kane-Garfield county
			line; then east along
			this county line to a
			point 3.0 miles east of
			the road to Kodachrome Basin directly south of
			Henrieville; directly
			north to Henrieville and
			Highway SR-12; north-
			easterly on SR-12 to the Dixie National Forest
			boundary; west along thi
			forest boundary to the
			Bryce Canyon National
			Park boundary; south-
			easterly along this
			boundary to the Kane-
			Garfield county line.
			New Harmony-Boundary
			begins at Cedar City and
			Highway SR-56; then
			westerly on SR-56 to
		•	Pinto Junction; south- westerly on the Pinto
			Road to Page Ranch;
			southeasterly on the Pag
			Ranch-Pace Draw-New
			Harmony road to New
			Harmony and Ash Creek;
			southwesterly up this creek to the summit 2.0
	·		miles west of Mount
			Baldy; south from the
			summit to Leap creek;
•			southeasterly along this
			creek to Interstate 15; northerly on I-15 to
			Cedar City and the
·			Junction of SR-56.
			Marysvale-Boundary begin
			at Deer Creek and Highwa SR-89; then southwesterl
			along Deer Creek to Gold
·	· · ·		Mountain and to Mount
			Belknap and the Beaver-
			Piute county line; south
			easterly along this county line to Mount
		· · ·	Holly; easterly to Gold
			Gulch and the Gold Gulch
			Road; easterly on this
			road to SR-89; northerly
			on SR-89 to Marysvale an the Deer Creek Road.
			the beer treek koau.
			Pine Valley (west)-
			Boundary begins at Page
			Ranch and Pinto Road; then southwesterly on

## APPENDIX D (continued)

		Daily Bag	Possession	
<u>Species</u>	Season Dates	Limit	<u>Limit</u>	Area Open
			· ·	SR-18; south on SR-18 to St. George and the junction with Interstate 15; northeasterly on I-15 to Leap Creek; north- westerly along this creek to the summit 2.0 miles west of Mount Baldy; north from the summit to Ash Creek; northeasterly along this creek to New Harmony; northwesterly up pace Draw on the New Harmony to Page Ranch Road to Page Ranch and the junction with the Pinto Road.
Ptarmigan	Sept. 8-Oct. 16	4	8	Daggett, Duchesne, Summit and Uintah counties.
Cottontail Rabbit	Sept. 14, 1991- Feb. 29, 1992	10	20	Statewide.
Snowshoe Hare	Sept. 14, 1991- Feb. 29, 1992	5	10	Statewide.

	Questionnaires	Total		Useable		Licensees Who
Year	Mailed	Returns	Percent	Returns	Percent	Did Not Hunt
1962	10,068	4,122	40.9	3,433	34.1	22.0
1963	11,058	5,062	45.8	4,325	39.1	21.0
1964	10,718	4,840	45.2	4,180	39.0	23.0
1965	11,917	6,232	52.3		0.0	34.0
1966	13,131	5,734	43.7	5,734	43.7	34.6
1967	12,012	5,764	48.0	5,764	48.0	25.1
1968	14,068	6,138	43.6	6,138	43.6	25.6
1969	15,036	6,429	42.8	6,429	42.8	28.0
1970	14,730	6,639	45.1	6,639	45.1	38.8
1971	15,149		43.2		0.0	
1972	15,272			6,399	41.9	
1973	17,572			7,999	45.5	
1974	27,379	9,157	33.4	8,027	29.3	·. <b></b>
1975	26,657	10,880	40.8	9,132	34.3	
1976	21,250	7,889	37.1	6,226	29.3	
1977	20,984	9,329	44.5	8,099	38.6	
1978	24,733	7,575	30.6	6,529	26.4	
1979	27,616	10,498	38.0	9,274	33.6	26.4
1980	27,952	9,857	35.3	8,496	30.4	33.1
1981	13,925	7,941	57.0	6,367	45.7	31.4
1982	22,609	10,167	45.0	8,734	38.6	27.0
1983	23,430	10,324	44.1	9,497	40.5	28.7
1984	12,026	6,455	53.7	6,324	52.6	31.1
1985	10,772	5,904	54.8	5,843	54.2	35.2
1986	11,103	5,329	48.0	5,256	47.3	34.2
1987	10,022	4,294	42.8	4,272	42.6	30.1
1988	15,350	6,650	43.3	6,527	42.5	35.6
1989	12,894	5,135	39.8	5,105	39.6	36.7
1 <b>99</b> 0	12,236	5,264	43.0	5,175	42.3	39.1
1991	15,054	6,419	42.6	6,212	41.3	42.7

APPENDIX E. Summary of upland game harvest questionnaire returns, 1962-91.