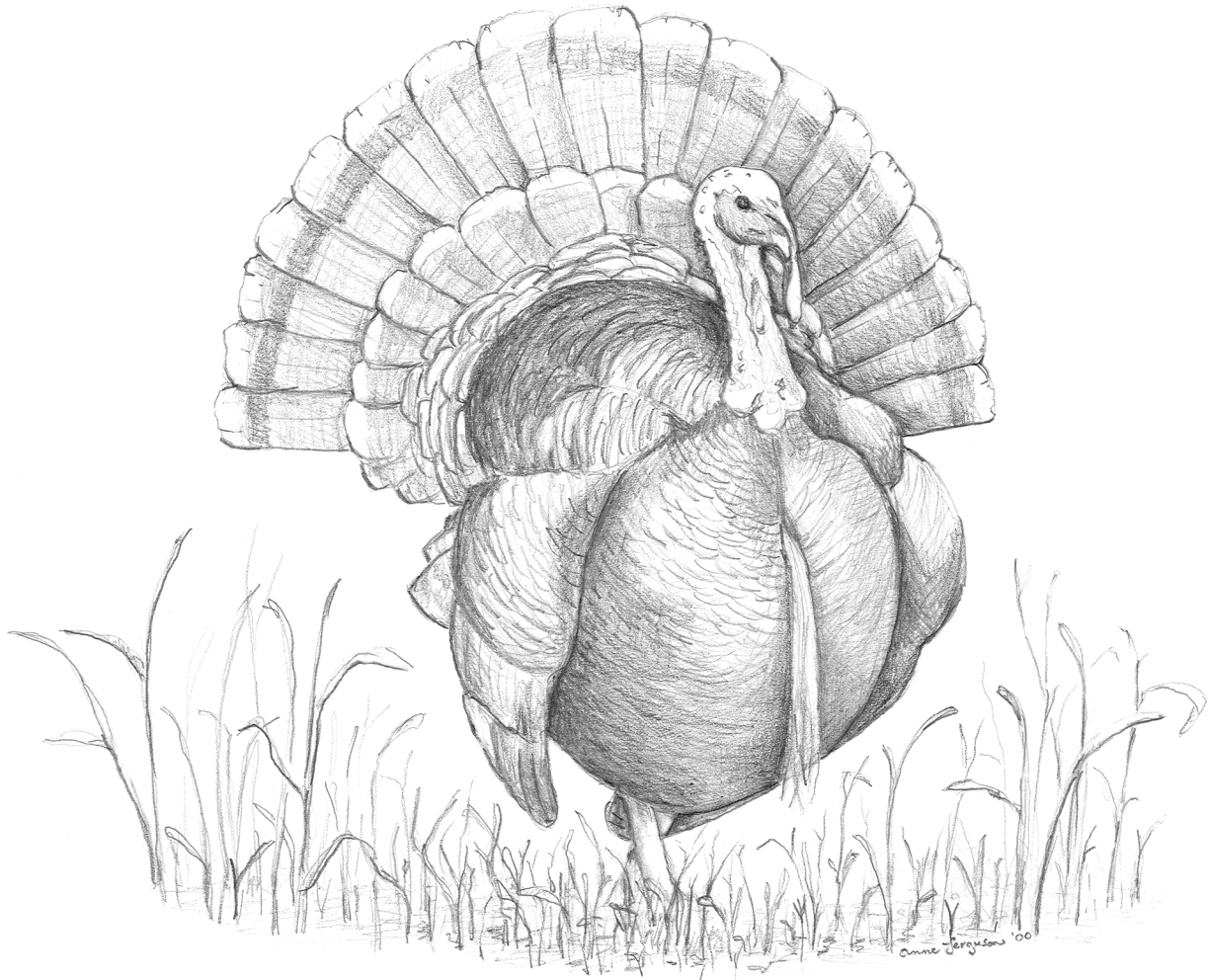
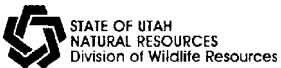


UTAH UPLAND GAME ANNUAL REPORT 1999



Publication 00-27

State of Utah
Department of Natural Resources
Division of Wildlife Resources



STATE OF UTAH
NATURAL RESOURCES
Division of Wildlife Resources



Your purchase
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UTAH
UPLAND GAME

Annual Report

1999

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PUBLICATION NO. 00-27

Annual Performance Report for Federal Aid Project W-16-RD-3

State of Utah
Department of Natural Resources
DIVISION OF WILDLIFE RESOURCES

An Equal Opportunity Employer

John Kimball
Director

"Finding out how many there are left is the least of the purposes of game census.

Measuring the response of game populations to changes - deliberate or accidental - in their environment is the big purpose.

Continuous census is the yardstick of success or failure in conservation."

Aldo Leopold 1932

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ANNUAL PERFORMANCE REPORT

State: UTAH

Grant Number: W-16-RD

Segment: 3

Grant Title: Statewide Upland Game Management Surveys and Inventories

Grant Agreement Period: Oct. 1, 1998 thru Sept. 30, 1999

Abstract: This report identifies progress and accomplishments of Segment No. 3 objectives, 1998-99. Results of annual population surveys and inventories conducted during the segment W-16-RD-2 and harvest surveys conducted under W-16-RD-3 along with summaries of long-term trends of population indices derived and harvest estimates will be included in the Utah Upland Game Annual Report 1998. Data obtained in 1998 will be compared to 1997 and long-term averages.

The Federal Aid Annual Performance Report for W-16-RD-2 will be included in the Utah Upland Game Annual Report 1998, rather than this Annual Performance Report because of the annual reporting scheme initiated under W-65-R and because of the way population surveys and inventories and harvest data are collected.

Annual population surveys and inventories are collected during one segment and harvest surveys are conducted during the subsequent segment. The Utah Upland Game Annual Report is an attempt to summarize population survey and inventory data and harvest estimates for the same calendar year.

This reporting scheme may seem awkward, especially when one looks a Utah Upland Game Annual Report and sees a copy of a Federal Aid Annual Performance Report included for a segment that ended before harvest survey data was actually collected.

Because this reporting scheme is somewhat confusing, but makes the most sense from a biological perspective to report population survey and inventory information for the same calendar year as harvest, it is hoped that the above explanation clarifies any confusion. Further, it is recommended that the reporting scheme remain the same.

The 1998 Utah Upland Game Annual Report (includes survey and inventory data from W-16-RD-2 and harvest data from W-16-RD-3) will be published in February 2000 and the 1999 Utah Upland Game Annual Report (includes survey and inventory data from W-16-RD-3 and harvest data from W-16-RD-4) will be published in July 2000.

I. OBJECTIVES OF GRANT PROPOSAL:

1. To annually monitor and evaluate 16 upland game species harvest and populations in Utah using appropriate surveys and inventories--on-going objective.
2. To administer Utah's upland game programs and to manage 16 upland game species based on population data obtained through Objective 1--on-going objective.
3. In conjunction with the Utah State University Extension Fisheries and Wildlife Specialist, compile, develop and publish a handbook pertaining to field identification, basic biology and ecology and sexing and aging techniques for Utah upland game.

Progress Statement and Summary of Work Completed During The Segment For Each Objective:

1. To annually monitor and evaluate 16 upland game species harvest and populations in Utah using appropriate surveys and inventories.

ANNUAL PERFORMANCE REPORT

UTAH W-16-RD STATEWIDE UPLAND GAME MANAGEMENT SURVEYS AND INVENTORIES

Ongoing Objective. 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, 1998 through February 10, 1999, 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. Pheasant crowing territory counts were selectively conducted by DWR's northern and central regions. Crowing territory counts are used by biologists to determine if habitat improvement projects are successful in increasing populations, and also as another index to local pheasant breeding populations.

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, 1999.

Random brood counts were conducted on chukar and Hungarian partridge, forest grouse (ruffed and blue), sage grouse, sharp-tailed grouse, wild turkey and quail from June 15-August 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 1998 for comparable grounds 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 pre-established 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 (1998) resident small game license file and combination license file was used. The modified computerized pull-apart mailer was again used to obtain harvest data. Separate questionnaires were mailed to all ptarmigan, band-tailed pigeon, sharp-tailed grouse 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 Utah Division of Wildlife Resources Public Services Section. Ptarmigan, band-tailed pigeon, sharp-tailed grouse and wild turkey questionnaires were analyzed separately by Utah Division of Wildlife Resources Wildlife Section personnel.

Upland game hunters were checked at checking stations, and random field 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.

One ten mile helicopter transect was flown in Utah's west desert in August, 1999 to determine chukar population densities. Index derived was chukars per mile. This survey is flown only in Utah's west desert. Data derived from this survey has been very useful in compiling a fall hunt forecast for chukars.

One snowshoe hare track and pellet survey was conducted in Cache County. This is currently the only data being collected on Utah snowshoe hares outside of harvest data. This survey seems to be useful so far. We hope to collect this data into the future and to conduct a correlation analysis with harvest data to see if we might be able to predict harvest levels based on the track and pellet county survey.

ANNUAL PERFORMANCE REPORT
UTAH W-16-RD STATEWIDE UPLAND GAME MANAGEMENT SURVEYS AND INVENTORIES

The winter flock count survey for wild turkey was fully implemented during the winter 1998-99. This technique seems to provide a useful index to Utah's turkey population. Data is used by local biologists to derive turkey harvest recommendations. We will continue to use this technique into the future to assess turkey populations.

New sage and sharp-tailed grouse leks were described and mapped during the segment as located.

Completion of the 4-Corners Band-tailed Pigeon Management Plan continues to wane. Several sections of the plan are being submitted by outside authors to the project leader who serves on and off as the plan's editor. Personnel changes in other states and higher priority projects in Utah and in the states of Arizona, Colorado and New Mexico have delayed the completion of the plan indefinitely. Further discussion on plan completion will occur at the March (2000) Pacific Flyway Regulations Meeting.

2. Ongoing Objective. To administer Utah's upland game programs and to manage 16 upland game species based on population data obtained through Objective 1.

Data collected in Objective 1 was used by DWR personnel to formulate harvest recommendations for 16 species of upland game in Utah. DWR personnel met in April, 1999 to formulate harvest recommendations for fall 1999 upland game seasons. DWR recommendations were presented at 5 Regional Advisory Councils and the public throughout the state in May. In June, recommendations were presented to the Utah Wildlife Board who made final decisions for recommendations to include in the 1999-2000 Utah Upland Game Proclamation.

In October and November, 1999, the project leader also presented DWR recommendations for wild turkey conservation permits and limited entry turkey hunting unit permits to 5 Regional Advisory Councils, the public and the Utah Wildlife Board. A separate Turkey Addendum to the Upland Game Proclamation was compiled, published and distributed. The purpose of the Turkey Addendum was to provide for the publishing of all Utah turkey hunting regulations, permit numbers and season dates in one document available at the time that turkey permit applications are submitted by hunters.

3. Objective To Be Completed Over 2 Years. In conjunction with the Utah State University Extension Fisheries and Wildlife Specialist, compile, develop and publish a handbook pertaining to field identification, basic biology and ecology and sexing and aging techniques for Utah upland game.

Objective 3 was not implemented in this segment. The Grant Agreement budget for Objectives 1 and 2 was underestimated and used up the funds intended for Objective 3. The apportionment for Wildlife Restoration Act funding was insufficient to increase the segment budget for Objective 3 and the task could not be implemented with only state funds which were also insufficient. We will continue to apply for sufficient funding, if available, otherwise this objective may not be accomplished in the Grant Period.

Location of Work Performed: Statewide.

Actual Cost:

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.

This is the twenty-ninth addition 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-16-RD. Information contained herein was collected and compiled by conservation officers, biologists, wildlife 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. 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 1999, a total of 55,553 Utah sportsmen spent 402,068 days afield in pursuit of various upland game species (Table 1). The harvest of upland game totaled 478,976 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 the general mail harvest questionnaire) of each species in Table 3.

The regulations for 1999 upland game hunting seasons are shown in Appendix D.

GENERAL HARVEST QUESTIONNAIRE

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

A total of 14,630 upland game questionnaires, a 15.63 percent sample of Utah's potential upland game hunters, were mailed. Of the total, 656 (4.48%) questionnaires were undeliverable. Of the 13,974 questionnaires delivered, 5,426 (38.83%) useable upland game questionnaires were returned. Of those, 2,148 purchased a license but did not hunt upland game. By dividing the total of 93,607 eligible licensees by the usable returns (5,426), a projection factor of 17.251567 is derived.

The 1999 hunter questionnaire sample size was greater than 10 percent of the total hunter population, 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 hunters and days-afield may be over-estimated where small samples are obtained, harvest per hunter-day should be relatively precise.

Table 1. Summary of harvest statistics from the general mail questionnaire for 1999.

Species	Hunters Afield	Total Harvest	Hunter-Days Afield	Bag Per Hunter-Day	Bag Per Hunter For Season
Pheasant	36,211	77,545	120,502	0.64	2.14
Mourning Dove	20,926	153,487	63,796	2.41	7.33
Band-Tailed Pigeon	49	156	103	0.66	2.10
Chukar Partridge	14,388	64,727	53,842	1.20	4.50
Sage Grouse	4,830	6,503	10,161	0.64	1.35
Forest Grouse	16,941	60,949	56,671	1.08	3.60
Quail	4,002	14,422	13,007	1.11	3.60
Hungarian Partridge	6,211	32,036	20,063	1.60	5.16
Wild Turkey					
Merriam's	327	111	1,188	0.09	0.34
Rio Grande	413	289	1,373	0.21	0.70
Sharp-Tailed Grouse	332	413	584	0.74	1.24
White-Tailed Ptarmigan	34	23	53	0.43	0.68
Cottontail Rabbit	15,475	66,142	54,894	1.20	4.27
Snowshoe Hare	2,139	2,173	5,831	0.37	1.02
Total	--	478,976	402,068	--	--

Total hunters afield for all species of upland game = 55,553

Table 2. Number and percent of total upland game hunters afield who reported hunting each species during 1991-99.

Species	Number of Hunters									Percent of Total								
	1991	1992	1993	1994	1995	1996	1997	1998	1999	1991	1992	1993	1994	1995	1996	1997	1998	1999
Pheasant	42,813	41,640	39,640	36,705	38,391	41,854	37,622	35,130	36,211	69.14	71.27	66.52	74.12	69.60	72.92	69.51	69.24	71.37
Mourning Dove	22,632	18,021	19,725	20,743	20,896	23,180	22,594	18,030	20,926	36.55	30.85	33.10	41.89	37.88	40.38	41.74	35.53	41.24
Band-Tailed Pigeon*	15	18	8	13	59	37	58	68	49	0.02	0.03	0.01	0.03	0.11	0.06	0.11	0.13	0.10
Chukar	10,577	11,125	10,128	8,455	9,097	10,197	9,665	9,283	14,388	17.08	19.04	17.00	17.07	16.49	17.76	17.86	18.30	28.36
Sage Grouse	8,018	7,393	6,594	5,133	5,987	5,574	4,178	3,559	4,830	12.95	12.65	11.07	10.37	10.85	9.71	7.72	7.01	9.52
Forest Grouse	14,421	15,000	12,029	9,827	10,088	15,492	10,206	9,166	16,941	23.29	25.67	20.19	19.85	18.29	26.99	18.86	18.06	33.39
Quail	2,644	2,861	3,649	2,936	4,374	4,622	3,637	3,211	4,002	4.27	4.90	6.12	5.93	7.93	8.05	6.72	6.33	7.89
Hungarian Partridge	2,662	3,198	2,090	1,899	2,294	2,299	2,328	2,350	6,211	4.30	5.47	3.51	3.83	4.16	4.01	4.30	4.63	12.24
Wild Turkey*																		
Merriam's	532	484	466	285	296	320	339	309	327	0.86	0.83	0.78	0.58	0.54	0.56	0.63	0.61	0.64
Rio Grande	18	20	41	105	123	166	229	254	413	0.03	0.03	0.07	0.21	0.22	0.29	0.42	0.50	0.81
Sharp-Tailed Grouse*	--	--	--	--	--	--	--	235	332	--	--	--	--	--	--	--	0.46	0.65
White-Tailed Ptarmigan*	13	11	9	4	20	12	18	45	34	0.02	0.02	0.02	0.01	0.04	0.02	0.03	0.09	0.07
Cottontail Rabbit	21,137	20,509	17,578	12,709	13,840	14,470	12,263	10,585	15,475	34.13	35.10	29.50	25.67	25.09	25.21	22.66	20.86	30.50
Snowshoe Hare	3,427	3,732	2,755	1,565	1,983	2,276	1,912	1,093	2,139	5.53	6.39	4.62	3.16	3.60	3.97	3.53	2.15	4.22
Total Hunters**	61,922	58,423	59,590	49,518	55,159	57,401	54,125	50,740	55,553									

*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 upland game bird species.

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

Table 3. Percent of hunter trips resulting in failure to bag at least one bird, 1961-99.

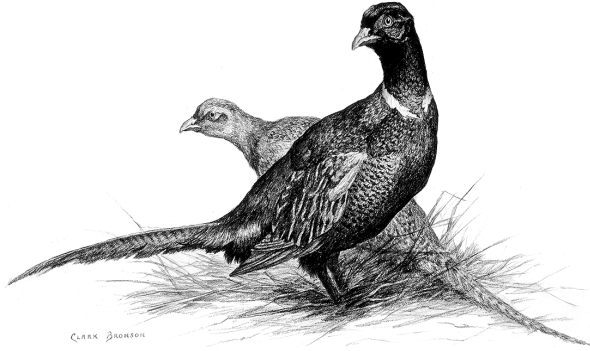
Year	Pheasant			Mourning Dove			Chukar			Sage Grouse			Forest Grouse			Quail			Hungarian Partridge		
	No Bag	Hunting Trips	%	No Bag	Hunting Trips	%	No Bag	Hunting Trips	%	No Bag	Hunting Trips	%	No Bag	Hunting Trips	%	No Bag	Hunting Trips	%	No Bag	Hunting Trips	%
1961	714	3,204	22	51	583	9	318	539	59	--	--	--	--	--	109	383	28	72	123	59	
1962	500	2,685	19	39	456	9	147	362	41	--	--	--	--	--	62	201	31	36	108	33	
1963	795	3,317	24	53	691	8	248	550	45	220	468	47	188	281	67	71	305	23	59	177	33
1964	911	3,115	29	60	681	9	266	568	47	45	154	29	144	229	63	94	316	30	62	150	41
1965	1,165	4,009	29	--	--	--	486	851	57	82	168	49	225	311	72	128	371	34	93	233	40
1966	1,242	4,297	29	136	1,067	13	523	881	48	54	131	41	133	331	40	106	315	34	63	219	29
1967	1,353	4,833	28	153	1,319	12	477	915	52	138	266	52	194	475	41	161	424	38	116	315	37
1968	1,422	5,223	27	236	1,312	18	495	1,095	45	185	449	41	177	665	27	171	457	39	132	347	28
1969	1,897	5,335	36	214	1,568	14	647	1,250	62	241	648	37	273	656	42	182	465	39	148	292	51
1970	1,546	4,686	33	193	1,274	15	466	962	48	257	603	43	209	666	31	126	314	40	101	210	48
1971	1,783	5,049	35	210	1,333	16	464	934	50	234	625	37	223	673	33	162	385	42	87	210	41
1972	1,743	4,617	38	270	1,421	19	457	827	55	259	593	44	271	794	34	154	339	45	120	224	54
1973	1,659	4,699	35	209	1,596	13	414	824	50	226	553	41	329	1,019	32	128	311	41	97	196	49
1974	2,347	5,323	44	323	1,951	17	511	955	54	292	668	44	388	1,259	31	157	333	47	108	227	48
1975	2,472	5,604	44	329	2,554	13	607	1,105	55	374	901	42	535	1,354	40	177	406	44	121	220	55
1976	1,739	4,294	40	273	1,709	16	408	781	52	259	783	33	371	1,131	33	105	266	39	87	184	47
1977	1,874	5,175	36	295	1,967	15	511	943	54	394	972	41	528	1,388	38	125	299	42	106	247	43
1978	1,507	4,858	31	279	1,986	14	343	882	39	301	853	35	419	1,419	30	103	306	34	85	246	35
1979	2,222	7,024	32	343	2,671	13	528	1,150	46	400	1,215	33	585	1,691	35	130	403	32	119	243	49
1980	1,684	5,867	29	258	2,145	12	458	1,008	45	392	944	42	501	1,283	39	87	254	34	75	206	36
1981	1,305	4,637	28	239	1,558	15	302	669	45	184	493	37	297	741	40	97	241	40	57	172	33
1982	1,768	6,725	26	363	2,338	16	406	824	49	269	620	43	325	919	35	128	292	44	89	176	51
1983	1,645	7,153	23	348	2,381	15	362	880	41	294	729	40	300	1,118	27	105	310	34	82	225	36
1984	1,245	4,643	27	274	1,711	16	287	548	52	202	435	46	270	640	42	84	189	44	51	76	67
1985	1,207	4,017	30	221	1,500	15	208	426	49	161	376	43	228	656	35	61	148	41	35	54	65
1986	1,211	3,615	33	224	1,476	15	237	537	44	139	368	38	221	667	33	58	125	46	36	61	59
1987	863	2,837	30	140	1,047	13	194	537	36	90	307	29	143	671	21	46	111	41	34	94	35
1988	1,372	3,953	35	244	1,525	16	308	77	40	187	557	34	224	1,184	19	63	171	37	73	154	47
1989	1,126	2,985	38	184	1,184	16	263	614	43	183	468	39	257	961	27	68	160	43	53	108	49
1990	988	2,745	36	161	1,234	13	282	632	45	162	483	34	233	810	39	54	132	41	46	117	39
1991	1,062	2,461	43	205	1,301	16	309	608	51	198	461	43	262	829	32	69	152	45	67	153	44
1992	905	2,760	33	156	1,150	14	298	701	43	169	432	39	208	969	21	68	168	40	67	186	36
1993	1,035	2,086	50	194	1,038	19	354	533	66	191	347	55	346	633	55	85	192	44	75	110	68
1994	889	2,088	43	230	1,180	19	278	481	58	148	292	51	243	559	43	64	167	38	78	108	72
1995	919	2,452	37	224	1,286	17	259	554	47	169	347	49	277	790	35	95	241	39	54	123	44
1996	742	2,259	33	173	1,164	15	225	526	43	119	255	47	187	775	24	81	215	38	38	103	37
1997	743	2,159	34	181	1,193	15	246	537	46	110	220	50	183	641	29	67	181	37	53	118	45
1998	542	1,773	31	141	869	16	175	454	39	65	163	40	160	802	20	42	143	29	32	105	30
1999	854	2,503	34	315	1,339	24	341	946	36	135	298	45	260	1,135	23	98	247	40	111	369	30
AVERAGES (1961-98)			33			14			48			39			34			38			45

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 band-tailed pigeon, wild turkey, 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.



Pheasant

The 1998-99 winter was very mild. Temperatures were well above normal in November through March, while precipitation was below normal in November through March.

During the nesting season, statewide monthly average temperatures were below normal (April-June). Average precipitation was above normal (April-August). Total pheasants observed on roadside routes was below 1998, while young per hen was the same as in 1998. The percentage of hens with young was 4 percent greater than in 1998.

Harvest statistics compiled from the questionnaire indicated approximately the same total pheasants harvested compared to 1998. Total harvest increased 3 percent from 1998, but remained 50 percent below the long-term average. Opening weekend success was down compared to the previous year based upon field bag check data.

The pheasant hunt is the most popular upland game hunt in Utah. Despite its popularity among Utah sportsmen, Utah's pheasant population continues to decline steadily. Primary reasons for population declines are due to outright losses of critical habitat and degradation of remaining habitat.

Beginning in 1997, one special youth (ages 12-15) youth pheasant hunt was provided in conjunction with the Box Elder County Cooperative Wildlife Management Unit. Approximately 75 youth hunters, recent graduates from Utah Hunter Education classes, participated in the hunt held on private property during the second Saturday of Utah's general pheasant season. The hunters were divided and allowed to go afield during a morning and afternoon hunt. Pen-reared pheasants were released prior to each hunt. Youth hunters were allowed to go afield, accompanied by a guardian, and had the opportunity to harvest two cock pheasants. Approximately 50% of the released pheasants were harvested.

Prior to going afield, youth hunters were provided with rules for the hunt and safety and ethics training. Upon returning from the field, youth hunters were provided with demonstrations on proper field dressing and game care.

In 1998, two youth pheasant hunts were provided—one on the Willard Bay and one on the James Walter Fitzgerald Wildlife Management areas. Hunts occurred on the second Saturday of the general pheasant season. Each wildlife management area (WMA) was closed to the general public during the youth hunts. A total of 200 youth hunters (100 at each WMA) participated in the 1998 hunts.

In 1999, four special youth pheasant hunts were offered; one on each of the following Wildlife Management areas: Willard Bay (100 hunters), James Walter Fitzgerald (100 hunters), Pahvant (100 hunters) and Mallard Springs (50 hunters).

The Conservation Reserve Program (CRP), begun in 1985 and reauthorized in 1996, has done little for Utah pheasant populations. Most CRP lands in Utah are in dryland farming areas. Pheasants prefer irrigated agricultural areas.

Breeding Territory Counts

Spring pheasant breeding territory counts have been conducted sporadically since 1993. Data on the number of territorial males per square mile are shown in Table 16. The number of territorial males in 1999 was up over the 1994-98 average.

Winter Sex Ratio Counts

Winter sex ratio counts provide an index as to how harvest of roosters only is affecting pheasant populations. In Utah, one rooster for every two, three or four hens is most common. One rooster for every ten hens is biologically acceptable in that one rooster can easily service ten hens in the wild. Based on this biological concept, hunting of rooster pheasants only does not appear to be affecting the populations.

Results of the survey for the winter of 1998-99 and long-term trends are shown in Tables 1 and 2 of this section. Statewide comparisons to the winter of 1997-98 and the 10-year (1989-98) average are as follows:

	<u>Winter of</u> <u>1998-99</u>	<u>Percent</u> <u>change</u> <u>from</u> <u>1997-98</u>	<u>Percent</u> <u>change</u> <u>from</u> <u>Average</u>
Total pheasants counted (roadside)	--	--	--
Hens per cock	--	--	--
Pheasants observed per 100 hours	--	--	--
Total hours effort (roadside)	--	--	--

Winter sex ratio data was not collected in Utah in the winter of 1998-99. This particular survey has been conducted for years in Utah. Rooster:hen ratios have never reached the point that biologists were concerned about impacts from hunting. This survey will be discontinued due to increased demands on personnel time.

Roadside Counts

A summary of summer roadside pheasant counts for 1999 is shown in Table 3. Long-term trends of pheasants per mile, young per mile, young per hen, percent of hens with young and mean brood size are found in Tables 4-8. Summer 1999 survey results compared to 1998 and the 10-year (1989-98) average follow:

	<u>1999</u>	<u>Percent</u> <u>change</u> <u>from</u> <u>1998</u>	<u>Percent</u> <u>change</u> <u>from</u> <u>Average</u>
Total pheasants observed	558	-8	-20
Total miles driven	920.5	-14	-23
Pheasants per mile	0.61	+7	+8
Average brood size	4.91	-2	+2
Young per hen	3.54	0	-1
Percent of hens with young	72	+4	-5

Total pheasants observed decreased 8 percent while pheasants per mile increased 7 percent. Percent of hens with young increased 4 percent while average brood size decreased 2 percent.

Fewer pheasants were observed on roadside counts in 1999 than in 1998. However, reproductive success per adult hen and percentage of hens with young was the same or up from the previous year.

Harvest

Hunter Questionnaire

Results of the hunter questionnaire for 1999 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 1999 harvest statistics to 1998 and the previous 51-year average follow:

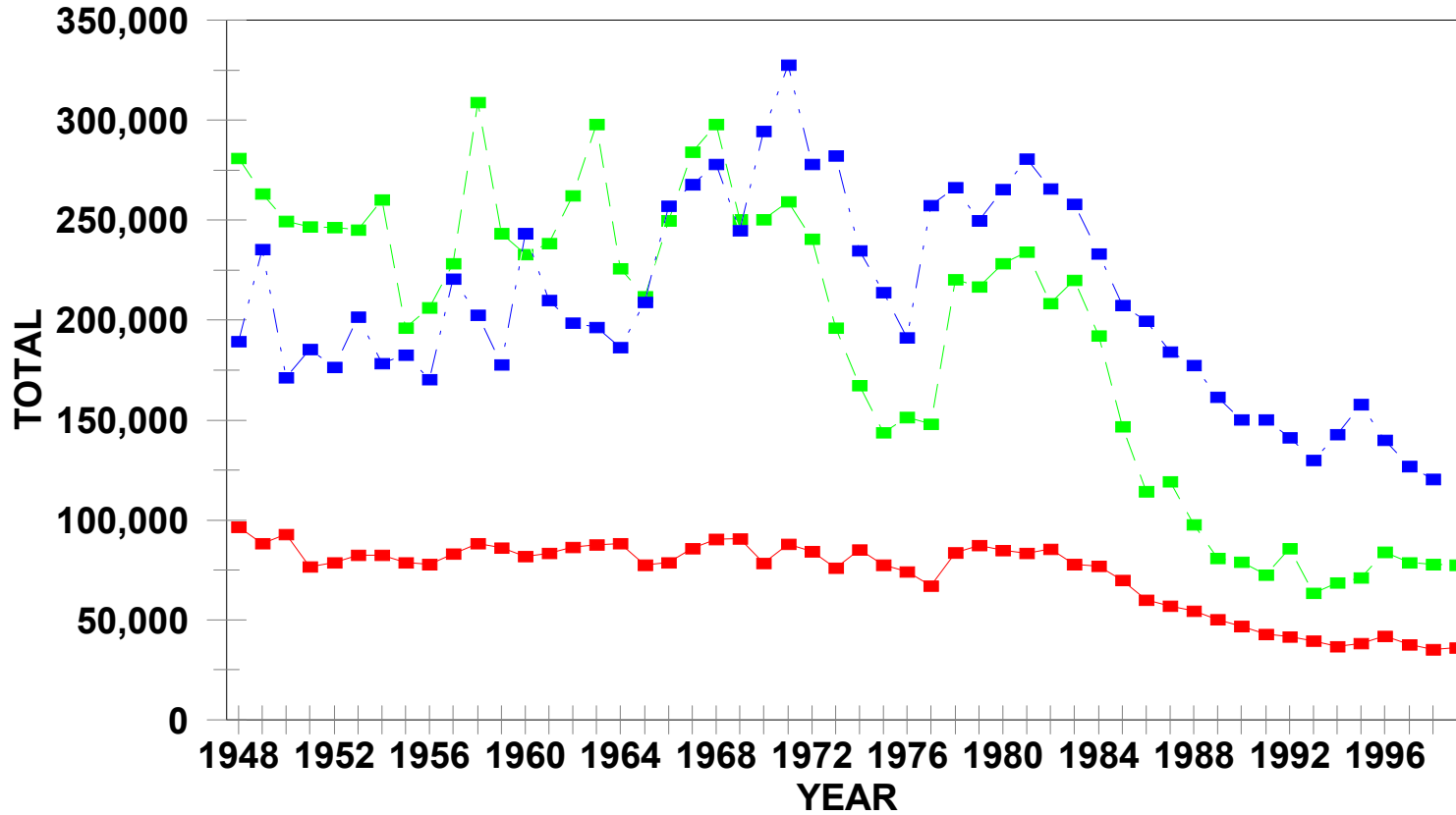
	<u>1999</u>	Percent change from 1998	Percent change from Average
Pheasant hunters	36,211	+3	-50
Pheasants harvested	77,545	0	-60
Hunter-days afield	120,502	-5	-42
Pheasants per hunter-day	0.64	+5	-27
Pheasants per hunter	2.14	-4	-16

Total hunters increased 3 percent from 1998 and remained 50 percent below the long-term average. Total harvest remained the same as in 1998. Hunter success (pheasants per hunter-day) increased 5 percent from 1998. Pheasants per hunter decreased 4 percent and remains 16 percent below the long-term average.

Long-term trends (1948-98) of total hunters, hunter-days, harvest and hunter success are shown in Figures 1 and 2. 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 fragmentation resulting in increased predation.

Cache County accounted for 18.38 percent of the entire pheasant harvest, while Box Elder County accounted for 15.91 percent and Utah County for 15.84 percent.

Figure 1. Statewide trends of pheasant harvest statistics, 1948-99.

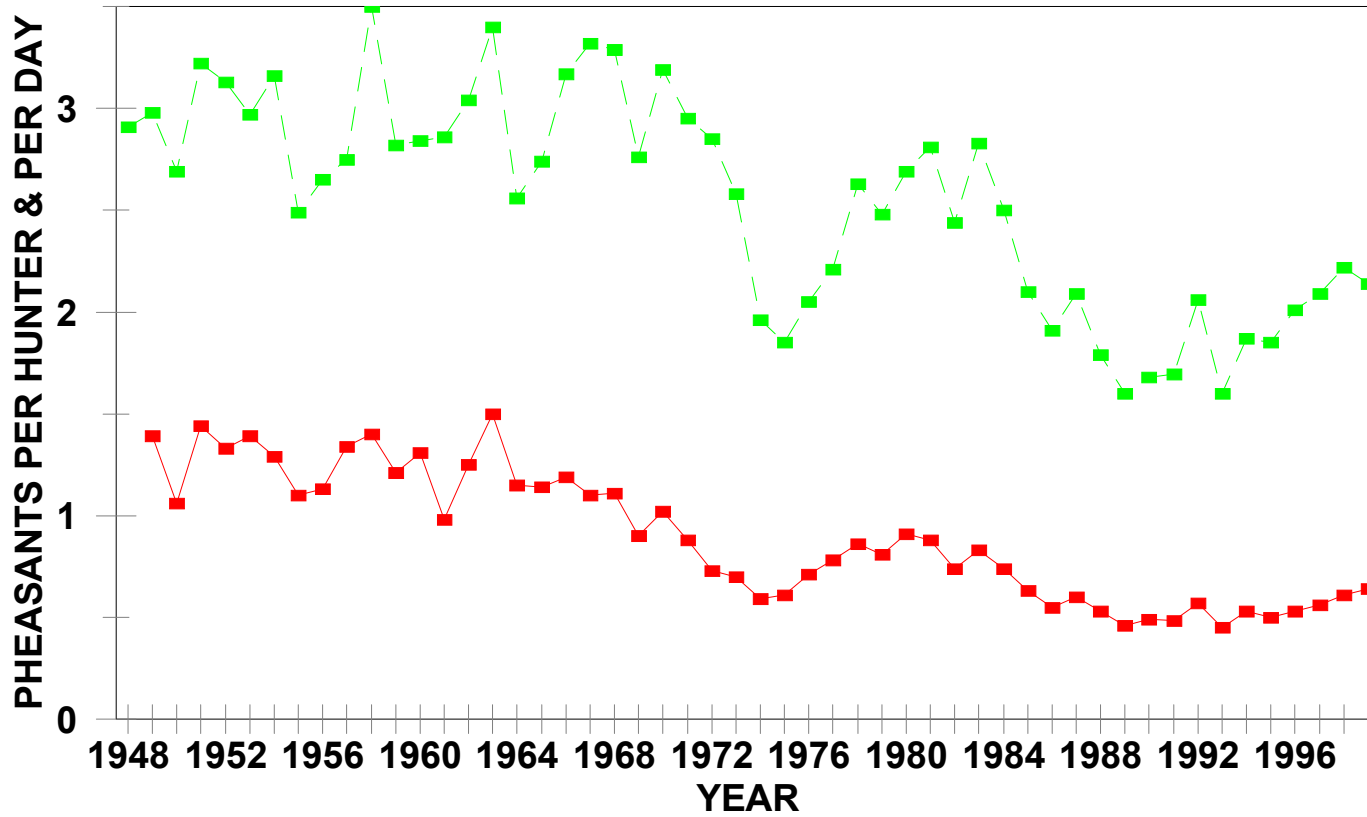


—■— Hunters

- - ■ - - Harvest

- - ■ - - Hunter-Days Afield

Figure 2. Statewide trends of pheasant hunter success rates, 1948-99.



—■— Pheasants Per Hunter-Day —■— Pheasants Per Hunter

Field Bag Checks

Field bag checks provide an index of opening day or weekend hunter harvest success rates.

A summary of pheasant field bag check data for 1999 is shown in Table 14. The hunter success trend determined via bag checks since 1993 is found in Table 15. A comparison of 1999 data, on a statewide basis, to 1998 and the 10-year (1989-98) average follow:

	<u>1999</u>	<u>Percent change from 1998</u>	<u>Percent change from Average</u>
Total hunters checked	279	+43	-54
Total hours hunted	645	+62	-61
Pheasants per hunter (complete hunts)	0.38	-17	+3
Pheasants bagged per 100 hours	16	-33	-9
Average hours per hunter-day (complete hunts)	2.35	+23	+1
Hours hunted per pheasant bagged (complete hunts)	6.17	+50	+4

In 1999, hunters spent 23 percent more time afield on an average day during the opening weekend. Hours hunted per pheasant bagged increased 50 percent. Pheasants per hunter decreased 17 percent over 1998 but was 3 percent above the 10-year average.

Table 2. Trend of pheasant winter sex ratio counts, 1993-99.

Region and County	1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		Average 1993-1998	
	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr	Hens/ Cock	Birds/ 100 Hr		
Northern Region														
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0
Central Region														
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	0.50	19	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Utah	3.91	974	2.33	737	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	3.81	641	2.33	737	--	--	--	--	--	--	--	--	3.07	689
Southern Region														
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0
Northeastern Region														
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0
Southeastern Region														
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	3.81	641	2.33	737	--	--	--	--	--	--	--	--	3.07	689

Table 3. Pheasant summer inventory, 1999.

Region and County	No. Routes	Total Miles	Total	Distinct Broods		Mixed Obser.		Adults w/o				Total Pheas.	Pheas./ Mile	Young/ Mile	Mean Brood	Young/ Ad. Hen	%Hens w/Young	
				Hens	Young	Hens	Young	Cocks	Young	Total Hens	Total Young							Total Cocks
Northern Region																		
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Central Region																		
Juab	1	35	4	4	8	0	0	6	2	6	8	6	20	0.57	0.23	2.00	1.33	67
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	3	166	10	10	67	0	1	7	8	18	68	7	93	0.56	0.41	6.70	3.78	56
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Utah	3	209	22	22	103	18	69	28	14	54	172	28	254	1.22	0.82	4.68	3.19	74
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	7	410	36	36	178	18	70	41	24	78	248	41	367	0.90	0.60	4.94	3.18	69
Southern Region																		
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	1	99	0	0	0	1	21	4	0	1	21	4	26	0.26	0.21	ERR	21.00	100
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	1	120	15	15	76	6	35	9	2	23	111	9	143	1.19	0.93	5.07	4.83	91
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	2	219	15	15	76	7	56	13	2	24	132	13	169	0.77	0.60	5.07	5.50	92
Northeastern Region																		
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	1	164.5	1	1	1	0	0	3	0	1	1	3	5	0.03	0.01	1.00	1.00	100
Uintah	1	127	1	1	5	0	0	6	5	6	5	6	17	0.13	0.04	5.00	0.83	17
REGIONAL TOTALS	2	291.5	2	2	6	0	0	9	5	7	6	9	22	0.08	0.02	3.00	0.86	29
Southeastern Region																		
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	11	920.5	53	53	260	25	126	63	31	109	386	63	558	0.61	0.42	4.91	3.54	72

Table 4. Trend of pheasants observed per mile during summer roadside pheasant counts, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	0.19	0.32	0.21	0.56	0.34	0.72	0.23	0.31	0.17	--	--	
Cache	0.23	0.09	0.41	0.59	1.09	--	--	--	--	--	--	
Davis	0.41	0.48	0.39	0.15	0.01	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	0.52	1.26	0.48	1.05	--	--	--	--	--	--	--	
REGIONAL TOTALS	0.3	0.42	0.35	0.58	0.24	0.72	0.23	0.31	0.17	--	--	0.37
Central Region												
Juab	0.5	0.14	--	0.77	0.16	0.14	0.15	0.00	0.06	0.03	0.57	
Salt Lake	--	1.26	1.24	--	0.31	--	--	--	--	--	--	
Sanpete	1.7	1.23	0.85	0.67	0.35	0.53	0.38	0.72	0.56	0.68	0.56	
Tooele	--	0.17	0.55	0.14	--	0.27	0.00	0.07	--	--	--	
Utah	1	1.45	0.58	2.56	0.93	1.58	0.96	0.98	0.81	0.85	1.22	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	1.5	1.09	0.73	1.79	0.48	0.92	0.61	0.70	0.65	0.71	0.90	0.92
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	0.34	0.38	--	1.38	--	--	--	--	0.68	0.26	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	0.71	1.19	
Washington	0.06	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	0.06	0.34	0.38	--	1.38	--	--	--	--	0.69	0.77	0.57
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	0.39	0.93	0.59	0.22	0.14	0.22	0.23	0.17	0.13	0.06	0.03	
Uintah	0.24	0.52	0.29	0.18	0.18	0.36	0.34	0.02	0.09	0.02	0.13	
REGIONAL TOTALS	0.32	0.71	0.51	0.17	0.16	0.28	0.28	0.11	0.11	0.05	0.08	0.27
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	
Emery	1	0.61	0.28	0.56	0.39	--	--	--	--	--	--	
Grand	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	1	0.61	0.28	0.56	0.39	--	--	--	--	--	--	0.57
STATE TOTALS	0.71	0.71	0.51	0.75	0.40	0.68	0.44	0.46	0.41	0.57	0.61	0.56

Table 5. Trend of young observed per mile during summer roadside pheasant counts, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	0.16	0.27	0.14	0.41	0.28	0.52	0.15	0.22	0.12	--	--	
Cache	0.14	0.06	0.23	0.42	0.94	--	--	--	--	--	--	
Davis	0.22	0.31	0.26	0.04	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	0.39	0.97	0.30	0.77	--	--	--	--	--	--	--	
REGIONAL TOTALS	0.20	0.32	0.21	0.41	0.19	0.52	0.15	0.22	0.12	--	--	0.26
Central Region												
Juab	0.08	0.09	--	0.62	0.08	0.08	0.12	0.00	0.06	--	0.23	
Salt Lake	--	0.97	0.93	--	0.24	--	--	--	--	--	--	
Sanpete	1.30	0.91	0.67	0.53	0.28	0.34	0.32	0.50	0.44	0.43	0.41	
Tooele	--	0.10	0.53	0.11	--	0.10	--	0.03	--	--	--	
Utah	1.00	1.15	0.49	1.97	0.69	1.12	0.72	0.71	0.60	0.56	0.82	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	1.10	0.87	0.59	1.38	0.37	0.63	0.47	0.50	0.49	0.46	0.60	0.69
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	0.31	0.28	--	1.18	--	--	--	--	0.56	0.21	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	0.51	0.93	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	0.31	0.28	--	1.18	--	--	--	--	0.54	0.60	0.58
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	0.20	0.58	0.42	0.08	0.02	0.10	0.15	0.11	0.07	0.04	0.01	
Uintah	0.14	0.35	0.21	0.10	0.13	0.25	0.25	0.00	0.03	--	0.04	
REGIONAL TOTALS	0.17	0.46	0.37	0.08	0.07	0.17	0.20	0.07	0.06	0.03	0.02	0.17
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	
Emery	1.00	0.43	0.22	0.43	0.29	--	--	--	--	--	--	
Grand	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	1.00	0.43	0.22	0.43	0.29	--	--	--	--	--	--	0.47
STATE TOTALS	0.62	0.48	0.38	0.55	0.30	0.46	0.33	0.32	0.30	0.41	0.42	0.42

Table 6. Trend of young per adult hen ratios found during summer roadside pheasant counts, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	7.00	5.86	1.92	3.04	4.67	3.32	3.29	3.44	3.50	--	--	
Cache	2.60	5.50	1.57	3.38	6.00	--	--	--	--	--	--	
Davis	1.30	2.41	3.00	1.00	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	4.80	5.50	2.60	3.35	--	--	--	--	--	--	--	
REGIONAL TOTALS	2.90	3.86	2.02	3.05	4.80	3.32	3.29	3.44	3.50	--	--	3.35
Central Region												
Juab	0.23	4.00	--	8.00	1.00	1.50	4.00	0.00	--	--	1.33	
Salt Lake	--	3.80	4.22	--	10.00	--	--	--	--	--	--	
Sanpete	3.20	3.34	4.17	4.60	4.77	2.15	9.00	3.00	4.29	2.29	3.78	
Tooele	--	2.00	--	3.00	--	0.60	--	2.00	--	--	--	
Utah	3.80	4.31	6.41	4.22	3.76	2.95	3.85	3.08	3.74	2.71	3.19	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	4.70	3.92	5.27	4.28	3.92	2.53	4.51	3.04	3.96	2.50	3.18	3.86
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	15.00	4.86	--	7.23	--	--	--	--	5.78	21.00	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	3.59	4.83	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	15.00	4.86	--	7.23	--	--	--	--	5.02	5.50	8.03
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	1.68	2.60	3.81	0.86	1.00	3.40	3.67	3.60	4.00	7.00	1.00	
Uintah	2.33	3.30	3.33	1.70	3.33	6.60	6.00	--	1.00	--	0.83	
REGIONAL TOTALS	2.01	2.82	3.73	1.02	2.40	5.00	4.83	3.00	2.29	7.00	0.86	3.41
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	
Emery	3.60	3.50	5.00	6.50	3.71	--	--	--	--	--	--	
Grand	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	3.60	3.50	5.00	6.50	3.71	--	--	--	--	--	--	4.46
STATE TOTALS	2.95	3.70	3.81	3.40	4.31	2.84	4.44	3.08	3.75	3.53	3.54	3.58

Table 7. Trend of the percent of hens observed with broods during summer roadside pheasant counts, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	100	100	83	74	89	68	57	89	100	--	--	
Cache	56	67	70	38	100	--	--	--	--	--	--	
Davis	47	50	50	0	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	100	80	60	85	--	--	--	--	--	--	--	
REGIONAL TOTALS	76	74	69	67	90	68	57	89	100	--	--	77
Central Region												
Juab	6	100	--	--	100	50	100	0	--	--	67	
Salt Lake	--	67	89	--	100	--	--	--	--	--	--	
Sanpete	81	78	83	90	85	59	100	71	100	55	56	
Tooele	--	--	--	--	--	40	--	100	--	--	--	
Utah	66	89	76	86	94	75	78	63	83	60	74	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	51	81	80	87	92	68	81	66	88	57	69	75
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	100	100	--	85	--	--	--	--	94	100	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	76	91	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	100	100	--	85	--	--	--	--	88	92	93
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	61	60	84	--	50	60	33	80	67	100	100	
Uintah	56	79	100	--	67	100	100	0	50	0	17	
REGIONAL TOTALS	59	67	86	--	60	80	67	67	57	100	29	71
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	
Emery	64	64	100	83	57	--	--	--	--	--	--	
Grand	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	64	64	100	83	57	--	--	--	--	--	--	74
STATE TOTALS	64	76	79	85	85	69	76	68	85	69	72	76

Table 8. Trend of average brood size for pheasants, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	8.00	5.40	3.20	4.00	5.40	6.78	6.67	4.00	--	--	--	
Cache	4.00	4.50	5.20	4.67	6.00	--	--	--	--	--	--	
Davis	4.50	4.20	6.00	--	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	4.30	--	4.33	3.94	--	--	--	--	--	--	--	
REGIONAL TOTALS	5.40	5.00	4.53	4.03	5.50	6.78	6.67	4.00	--	--	--	5.24
Central Region												
Juab	4.00	4.00	--	8.00	2.00	3.00	4.00	0.00	--	0.00	2.00	
Salt Lake	--	5.00	4.25	--	7.00	--	--	--	--	--	--	
Sanpete	4.20	4.40	5.00	4.00	5.89	4.18	5.83	4.62	4.29	5.22	6.70	
Tooele	--	3.00	--	--	--	1.00	--	2.00	--	--	--	
Utah	5.10	5.00	5.13	5.44	3.78	4.13	4.89	4.72	4.70	4.93	4.68	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	4.40	4.70	4.92	5.35	4.32	4.06	5.03	4.59	4.53	5.04	4.94	4.69
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	3.80	5.40	--	--	--	--	--	--	5.64	--	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	4.73	5.07	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	3.80	5.40	--	--	--	--	--	--	5.36	5.07	4.85
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	2.70	5.30	4.50	0.68	2.00	5.67	--	3.00	4.00	1.75	1.00	
Uintah	4.20	4.90	3.33	3.00	4.75	6.60	6.00	--	--	0.00	5.00	
REGIONAL TOTALS	3.50	5.10	4.18	0.80	3.83	6.25	6.00	3.00	4.00	1.75	3.00	3.84
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	
Emery	5.70	5.60	4.50	7.00	6.50	--	--	--	--	--	--	
Grand	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	5.70	5.60	4.50	7.00	6.50	--	--	--	--	--	--	5.86
STATE TOTALS	4.60	4.80	4.61	3.93	5.81	4.68	5.24	4.33	4.49	5.02	4.91	4.75

Table 9. Summary of pheasant hunter success and distribution of harvest and hunting pressure by region and county, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	340	16,544	12,334	0.75	13.73	15.91
CACHE	332	18,804	14,249	0.76	15.60	18.38
DAVIS	96	5,140	1,362	0.27	4.27	1.76
MORGAN	2	34	120	3.50	0.03	0.16
RICH	3	51	17	0.33	0.04	0.02
SUMMIT	5	155	327	2.11	0.13	0.42
WEBER	206	10,989	3,795	0.35	9.12	4.89
REGIONAL TOTALS	984	51,720	32,208	0.62	42.92	41.54
CENTRAL REGION						
JUAB	104	4,519	3,605	0.80	3.75	4.65
SALT LAKE	27	966	431	0.45	0.80	0.56
SANPETE	153	7,435	5,537	0.74	6.17	7.14
TOOELE	103	5,002	2,294	0.46	4.15	2.96
UTAH	431	18,114	12,283	0.68	15.03	15.84
WASATCH	2	69	86	1.25	0.06	0.11
REGIONAL TOTALS	820	36,107	24,238	0.67	29.96	31.26
SOUTHERN REGION						
BEAVER	8	465	155	0.33	0.39	0.20
GARFIELD	1	51	0	0.00	0.04	0.00
IRON	6	224	86	0.38	0.19	0.11
KANE	0	0	0	0.00	0.00	0.00
MILLARD	143	7,538	6,279	0.83	6.26	8.10
PIUTE	3	86	0	0.00	0.07	0.00
SEVIER	109	6,745	3,174	0.47	5.60	4.09
WASHINGTON	15	655	241	0.37	0.54	0.31
WAYNE	7	310	189	0.61	0.26	0.24
REGIONAL TOTALS	292	16,078	10,126	0.63	13.34	13.06
NORTHEASTERN REGION						
DAGGETT	2	69	86	1.25	0.06	0.11
DUCHESNE	71	3,519	3,139	0.89	2.92	4.05
UINTAH	91	5,020	3,622	0.72	4.17	4.67
REGIONAL TOTALS	164	8,608	6,848	0.80	7.14	8.83
SOUTHEASTERN REGION						
CARBON	47	3,036	1,656	0.55	2.52	2.14
EMERY	72	4,416	2,415	0.55	3.67	3.11
GRAND	4	414	0	0.00	0.34	0.00
SAN JUAN	2	51	34	0.67	0.04	0.04
REGIONAL TOTALS	125	7,918	4,105	0.52	6.57	5.29
Unknown	118	69	17	0.25	0.06	0.02
STATE TOTALS	2,503	120,502	77,545	0.64	100.00	100.00

*Total hunter trips from questionnaire returns.

Table 10. Summary of pheasants bagged per hunter-day by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	0.64	0.44	0.55	0.57	0.67	0.65	0.64	0.75
Cache	0.59	0.48	0.60	0.54	0.67	0.60	0.78	0.76
Davis	0.29	0.21	0.34	0.24	0.24	0.44	0.38	0.27
Morgan	(0.00)	0.00	1.06	0.14	0.50	0.75	0.20	3.50
Rich	(0.00)	0.33	1.00	0.50	0.00	0.50	0.71	0.33
Summit	(0.00)	0.00	0.00	0.75	0.00	0.13	0.00	2.11
Weber	0.39	0.20	0.29	0.45	0.32	0.26	0.42	0.35
REGIONAL TOTALS	0.50	0.33	0.46	0.47	0.50	0.52	0.61	0.62
Central Region								
Juab	0.66	0.40	0.49	0.71	0.64	0.58	0.58	0.80
Salt Lake	0.39	0.53	0.55	0.30	0.65	0.49	0.53	0.45
Sanpete	0.60	0.44	0.59	0.34	0.55	0.53	0.57	0.74
Tooele	0.24	0.15	0.33	0.50	0.31	0.42	0.51	0.46
Utah	0.65	0.48	0.58	0.55	0.52	0.65	0.70	0.68
Wasatch	(0.30)	0.50	2.00	1.50	0.53	0.78	1.38	1.25
REGIONAL TOTALS	0.59	0.45	0.56	0.53	0.52	0.59	0.64	0.67
Southern Region								
Beaver	0.38	0.28	0.39	0.24	0.18	0.33	0.39	0.33
Garfield	(0.00)	0.00	1.00	0.50	0.00	1.00	0.75	0.00
Iron	0.26	0.29	0.44	0.25	0.25	0.14	0.20	0.38
Kane	(0.00)	0.00	0.00	0.00	2.00	0.00	0.00	0.00
Millard	0.76	0.58	0.62	0.58	0.56	0.50	0.55	0.83
Piute	(1.00)	0.25	0.63	0.50	0.91	14.00	0.33	0.00
Sevier	0.49	0.32	0.41	0.27	0.39	0.57	0.60	0.47
Washington	0.61	0.93	0.56	0.45	0.24	0.45	0.33	0.37
Wayne	(1.14)	0.29	0.57	0.50	0.20	0.08	0.21	0.61
REGIONAL TOTALS	0.62	0.47	0.52	0.42	0.45	0.58	0.53	0.63
Northeastern Region								
Daggett	(0.00)	1.20	0.00	0.00	0.18	1.50	0.50	1.25
Duchesne	0.79	0.77	0.85	0.90	0.86	0.65	0.59	0.89
Uintah	0.68	0.44	0.80	0.49	0.65	0.73	0.67	0.72
REGIONAL TOTALS	0.74	0.67	0.83	0.74	0.76	0.70	0.63	0.80
Southeastern Region								
Carbon	0.48	0.57	0.30	0.35	0.59	0.50	0.54	0.55
Emery	0.53	0.52	0.62	0.41	0.60	0.54	0.77	0.55
Grand	(1.40)	0.57	0.61	0.00	0.50	0.62	0.61	0.00
San Juan	(1.00)	0.00	0.00	0.00	0.64	2.00	0.67	0.67
REGIONAL TOTALS	0.53	0.53	0.00	0.38	0.59	0.53	0.70	0.52
Unknown Counties	0.00	1.45	0.53	0.30	6.40	0.50	0.00	0.25
STATE TOTALS	0.57	0.45	0.67	0.50	0.50	0.56	0.61	0.64

()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, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	11.67	12.59	9.93	12.03	14.74	14.21	12.43	15.91
Cache	9.68	9.76	8.04	11.72	11.55	10.75	19.21	18.38
Davis	4.38	2.92	2.82	3.89	3.30	7.39	3.41	1.76
Morgan	(0.07)	(0.00)	0.00	0.44	0.03	0.12	0.03	0.16
Rich	0.00	(0.00)	0.06	0.05	0.05	0.03	0.15	0.02
Summit	0.02	(0.00)	0.00	0.00	0.08	0.00	0.00	0.42
Weber	(8.03)	6.59	5.13	5.55	9.91	11.31	5.97	4.89
REGIONAL TOTALS	33.85	31.86	25.98	33.67	39.67	43.80	41.19	41.54
Central Region								
Juab	2.47	3.21	2.16	3.05	3.74	2.34	2.96	4.65
Salt Lake	2.23	2.51	2.76	2.00	1.53	1.74	0.69	0.56
Sanpete	5.94	5.70	4.32	5.81	2.32	4.17	3.91	7.14
Tooele	1.72	1.24	0.93	1.10	1.67	2.71	2.81	2.96
Utah	27.43	28.75	24.51	25.18	25.42	17.39	18.64	15.84
Wasatch	0.50	(0.06)	0.06	0.05	0.74	0.28	0.33	0.11
REGIONAL TOTALS	40.30	41.47	34.74	37.18	35.41	28.62	29.33	31.26
Southern Region								
Beaver	0.69	0.31	0.48	0.74	0.41	0.25	0.21	0.20
Garfield	0.00	(0.00)	0.00	0.03	0.05	0.10	0.09	0.00
Iron	0.55	0.21	0.39	0.72	0.38	0.65	0.09	0.11
Kane	0.00	(0.00)	0.00	0.00	0.00	0.01	0.00	0.00
Millard	7.62	8.04	7.71	7.72	6.03	5.96	7.17	8.10
Piute	(0.02)	(0.19)	0.06	0.13	0.05	0.16	0.03	0.00
Sevier	3.62	3.83	4.53	3.79	2.10	4.42	5.59	4.09
Washington	0.43	0.46	2.52	1.64	1.09	1.15	0.90	0.31
Wayne	(0.02)	(0.17)	0.06	0.20	0.11	0.07	0.09	0.24
REGIONAL TOTALS	12.96	13.19	15.75	14.99	10.24	12.78	14.16	13.06
Northeastern Region								
Daggett	0.00	(0.00)	0.18	0.00	0.00	0.16	0.03	0.11
Duchesne	5.73	5.97	8.49	4.40	8.11	4.33	3.67	4.05
Uintah	3.07	3.58	2.40	3.38	3.00	3.43	4.60	4.67
REGIONAL TOTALS	8.79	9.55	11.07	7.78	11.11	7.92	8.30	8.83
Southeastern Region								
Carbon	0.84	1.28	2.19	1.00	1.06	1.94	1.28	2.14
Emery	2.92	2.44	5.10	4.96	2.13	3.80	5.08	3.11
Grand	(0.24)	(0.14)	0.12	0.36	0.00	0.85	0.60	0.00
San Juan	(0.10)	0.06)	0.00	0.00	0.00	0.21	0.06	0.04
REGIONAL TOTALS	4.10	3.94	7.41	6.32	3.19	6.80	7.02	5.29
Unknown Counties	0.00	0.00	5.04	0.05	0.38	0.07	0.00	0.02
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.

Table 12. Percentage distribution of pheasant hunting pressure by county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	11.21	10.00	11.49	12.92	17.81	14.65	11.87	13.73
Cache	9.40	7.55	10.33	10.74	13.47	13.69	15.05	15.60
Davis	5.78	6.01	6.06	6.97	3.35	7.55	5.49	4.27
Morgan	(0.07)	0.15	0.22	0.10	0.11	0.06	0.09	0.03
Rich	(0.00)	0.08	0.03	0.05	0.00	0.09	0.13	0.04
Summit	(0.00)	0.01	0.01	0.05	0.00	0.12	0.04	0.13
Weber	9.64	11.34	10.23	11.06	6.75	9.74	8.72	9.12
REGIONAL TOTALS	36.11	35.14	38.37	41.90	41.48	45.91	41.38	42.92
Central Region								
Juab	2.79	2.41	3.26	2.64	2.79	3.47	3.12	3.75
Salt Lake	3.71	2.35	1.91	2.55	2.13	1.45	0.79	0.80
Sanpete	5.44	4.41	5.24	3.40	4.34	4.57	4.20	6.17
Tooele	2.99	2.71	1.75	1.65	1.58	3.28	3.36	4.15
Utah	25.12	22.66	22.98	23.13	16.92	15.68	16.37	15.03
Wasatch	(0.12)	0.05	0.01	0.25	0.28	0.13	0.15	0.06
REGIONAL TOTALS	40.18	34.59	35.15	33.62	28.04	28.58	27.98	29.96
Southern Region								
Beaver	0.47	0.78	1.02	0.86	0.08	0.31	0.33	0.39
Garfield	(0.00)	0.00	0.01	0.05	0.00	0.01	0.07	0.04
Iron	0.45	0.60	0.85	0.75	0.30	0.31	0.28	0.19
Kane	(0.02)	0.00	0.00	0.00	0.06	0.00	0.00	0.00
Millard	6.06	5.97	6.58	5.17	6.31	6.44	7.98	6.26
Piute	(0.11)	0.11	0.11	0.05	0.28	0.07	0.06	0.07
Sevier	4.48	6.25	4.89	3.89	3.24	4.57	5.72	5.60
Washington	0.43	1.21	1.56	1.20	0.53	1.13	1.69	0.54
Wayne	(0.08)	0.09	0.19	0.11	0.03	0.18	0.26	0.26
REGIONAL TOTALS	12.10	15.01	15.20	12.09	10.81	13.02	16.39	13.34
Northeastern Region								
Daggett	(0.00)	0.07	0.00	0.00	0.06	0.06	0.04	0.06
Duchesne	4.33	4.95	2.73	4.48	7.00	3.63	3.82	2.92
Uintah	2.99	2.43	2.23	3.05	4.20	4.32	4.20	4.17
REGIONAL TOTALS	7.32	7.45	4.97	7.53	11.26	8.01	8.06	7.14
Southeastern Region								
Carbon	1.51	1.73	1.75	1.50	2.16	1.68	1.47	2.52
Emery	2.63	4.37	4.21	2.60	4.31	2.45	4.07	3.67
Grand	(0.06)	0.09	0.31	0.12	0.80	0.19	0.61	0.34
San Juan	(0.04)	0.05	0.00	0.01	0.25	0.01	0.06	0.04
REGIONAL TOTALS	4.23	6.25	6.27	4.23	7.52	4.33	6.20	6.57
Unknown Counties	0.05	1.56	0.04	0.63	0.88	0.15	0.00	0.06
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

()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, 1948-99.

Year	Hunters	Harvest	Hunter-Days Afield	Pheasants Per Hunter-Day	Pheasants Per Hunter
1948	96,534	280,914	--	--	2.91
1949	88,369	263,340	189,453	1.39	2.98
1950	92,724	249,428	235,309	1.06	2.69
1951	76,576	246,575	171,233	1.44	3.22
1952	78,773	246,559	185,383	1.33	3.13
1953	82,595	245,307	176,480	1.39	2.97
1954	82,370	260,289	201,774	1.29	3.16
1955	78,793	196,195	178,359	1.10	2.49
1956	77,826	206,239	182,512	1.13	2.65
1957	83,025	228,319	170,387	1.34	2.75
1958	88,290	309,015	220,725	1.40	3.50
1959	86,268	243,276	202,730	1.21	2.82
1960	81,976	232,812	177,719	1.31	2.84
1961	83,493	238,439	243,305	0.98	2.86
1962	86,336	262,448	209,921	1.25	3.04
1963	87,647	297,873	198,582	1.50	3.40
1964	88,242	225,775	196,314	1.15	2.56
1965	77,409	211,876	186,215	1.14	2.74
1966	78,721	249,814	209,082	1.19	3.17
1967	85,664	284,000	257,033	1.10	3.32
1968	90,453	297,752	267,788	1.11	3.29
1969	90,573	250,241	277,887	0.90	2.76
1970	78,585	250,503	244,958	1.02	3.19
1971	87,878	259,189	294,618	0.88	2.95
1972	84,311	240,573	327,669	0.73	2.85
1973	75,968	196,012	278,033	0.70	2.58
1974	85,252	167,408	282,294	0.59	1.96
1975	77,566	143,783	234,615	0.61	1.85
1976	74,029	151,476	214,023	0.71	2.05
1977	67,195	148,168	191,142	0.78	2.21
1978	83,800	220,398	257,305	0.86	2.63
1979	87,462	216,700	266,245	0.81	2.48
1980	84,868	228,442	249,770	0.91	2.69
1981	83,408	234,217	265,381	0.88	2.81
1982	85,368	208,437	280,624	0.74	2.44
1983	77,847	220,074	265,731	0.83	2.83
1984	76,840	192,190	258,169	0.74	2.50
1985	69,889	146,807	233,328	0.63	2.10
1986	59,987	114,389	207,346	0.55	1.91
1987	57,118	119,236	199,470	0.60	2.09
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
1992	41,640	85,803	150,244	0.57	2.06
1993	39,640	63,336	141,399	0.45	1.60
1994	36,705	68,698	129,872	0.53	1.87
1995	38,391	71,202	142,755	0.50	1.85
1996	41,854	83,987	157,755	0.53	2.01
1997	37,622	78,693	140,135	0.56	2.09
1998	35,130	77,889	126,792	0.61	2.22
1999	36,211	77,545	120,502	0.64	2.14
Totals (1948-99)	3,761,955	9,921,624	10,671,640	--	--
Averages (1948-98)	73,054	193,021	206,885	0.88	2.55

Table 14. Pheasant field bag check summary, 1999.

Region and County	All Hunts					Complete Hunts						
	Total Parties	Total Hunters	Total Hours	Total Birds	Birds/100 Hr	Complete Hunts	Total Hunters	Total Hours	Total Birds	Birds/100 Hr	Birds/Hunter	
Northern Region												
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Central Region												
Juab	--	38	109	20	18	--	38	109	20	18	0.53	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	41	105	12	11	--	41	105	12	11	0.29	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	0	79	213.5	32	15	0	79	213.5	32	15	0.41	
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	74	200	431	46	11	37	92	187	33	18	0.36	
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	74	200	431	46	11	37	92	187	33	18	0.36	
STATE TOTALS	74	279	645	78	12	37	171	401	65	16	0.38	

Table 15. Pheasant hunter success trend as determined by field check, 1993-99.

Region and County	1993		1994		1995		1996		1997		1998		1999	
	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter
Northern Region														
Box Elder	--	0.23	--	--	--	--	--	--	--	--	--	--	--	--
Cache	12	0.63	--	--	8	0.27	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	60	0.26	--	--	8	0.27	--	--	--	--	--	--	--	--
Central Region														
Juab	--	--	--	--	--	--	--	--	--	--	--	--	18	0.53
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	12	0.50	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	14	0.63	13	0.29	--	--	--	--	--	--	--	--	--	--
Utah	12	0.36	--	--	10	0.32	0	0.00	--	--	--	--	11	0.29
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	12	0.39	13	0.29	10	0.32	0	0.00	--	--	--	--	15	0.41
Southern Region														
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	7	0.38	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	7	0.38	--	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region														
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	6	0.20	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	6	0.20	--	--	--	--	--	--	--	--
Southeastern Region														
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Emery	22	0.29	15	0.33	28	0.55	17	0.38	17	0.36	24	0.46	18	0.36
Grand	42	0.40	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	24	0.31	15	0.33	28	0.55	17	0.38	17	0.36	24	0.46	18	0.36
STATE TOTALS	19	0.31	14	0.31	11	0.33	16	0.38	17	0.36	24	0.46	16	0.38

Table 16. Trends of spring pheasant breeding territory counts, 1994-99.

Region and County	Territorial Males per Square Mile						Average 1994-98
	Year						
	1994	1995	1996	1997	1998	1999	
Northern Region							
Spring Creek-1	6.00		8.00				7.00
Spring Creek-2	7.00		13.00				10.00
BudPhelps WMA	5.00		10.00				7.50
Mendon	3.00		4.00				3.50
Pertersboro	0.00		2.00				1.00
REGIONAL AVERAGE	4.20		7.40				5.80
Central Region							
North Utah County (Sections 26,27,30,31)		1.97	2.80	2.48	4.66	5.95	2.98
Central Utah County (Sections 4,18)		6.83	8.80	5.88	6.99	10.97	7.13
South Utah County (Sections 11,25)		0.83	0.00	0.67	2.17	2.63	0.92
REGIONAL AVERAGE		3.21	3.87	3.01	4.61	6.52	3.67
Southern Region							
Clear Lake WMA (Entire WMA)		7.00	16.00				11.50
Pahvant WMA (Entire WMA)		3.00	9.00				6.00
REGIONAL AVERAGE		5.00	12.50				8.75
Northeastern Region							
Daggett							
Duchesne							
Uintah							
REGIONAL AVERAGE							
Southeastern Region							
Carbon							
Emery							
Huntington					15.50	10.50	15.50
Lawrence					24.50	24.50	24.50
Castle Dale					7.00	7.50	7.00
Moore					13.00	53.00	13.00
Grand							
San Juan							
REGIONAL AVERAGE					15.00	23.88	15.00
STATE AVERAGE	4.20	4.11	7.92	3.01	9.80	15.20	8.31

Migratory Upland Game Birds



Mourning Dove

The breeding density index increased 96 percent in 1999, and was 11 percent above average.

Harvest statistics derived from the questionnaire indicated an increase in number of hunters, but a slight decrease in harvest compared to 1998.

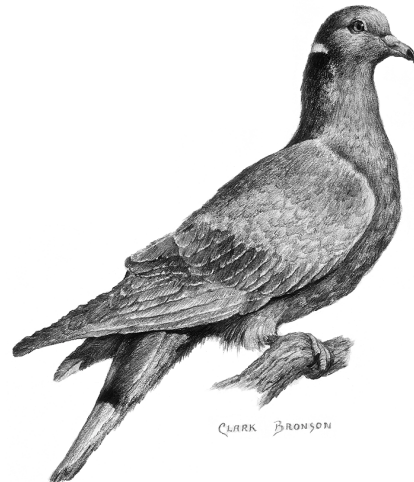
Beginning in 1998, Utah mourning dove and band-tailed pigeon hunters were required to register under the federally mandated, Migratory Game Bird Harvest Information Program (HIP). The purpose of HIP is to ensure standardized harvest data collection for migratory game birds. HIP is administered by the U.S. Fish and Wildlife Service.

Field bag checks indicated a decrease in hunter success on opening day. Hunters who participated hunted more hours per day than the previous year, and spent more time afield per dove harvested.

Aging of wings indicated the juvenile per 100 adult ratio increased to 138 compared to 120 in 1998. Juvenile per 100 adult ratio was 38 percent above the long-term average.

Band-tailed Pigeon

A free band-tailed pigeon hunting permit was required in 1999 to obtain mailing addresses for a harvest questionnaire. Pigeon hunters were also required to register in the HIP program. One hundred nine hunters obtained permits and only 49 went afield. One hundred three pigeons were harvested. The majority of the harvest occurred on the LaSal Mountains.



MOURNING DOVE

Call Count Survey

Results of the 1999 call count survey are found in Table 1 of this section. The long-term trend of the state's breeding density index (average doves heard per route) is shown in Table 2. Indices shown in each of these tables are unweighted and consequently differ from those published in the annual Mourning Dove Status Report compiled by the U.S. Fish and Wildlife Service. However, indicated trends are similar (Figure 1). The following is a comparison of the results of the 1999 survey compared to 1998 and the 10-year(1989-98) average:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Average doves heard per route	10.47	+96	+11
Average doves seen per route	5.33	+60	-37

Coo count data (doves heard per route) indicated substantially increased breeding activity in late May compared to 1998, and was 11 percent above the long-term average of doves heard per route.

Harvest

Hunter Questionnaire

Information obtained from the hunter questionnaire for 1999 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 1999 compared to 1998 and the previous 48-year average:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Mourning dove hunters	20,926	+16	-5
Mourning doves harvested	153,487	-4	-25
Hunter-days afield	63,796	-5	-9
Mourning doves per hunter-day	2.41	+1	-25
Mourning doves per hunter	7.33	-17	-19

Hunter success increased slightly from 1998. Total harvest decreased 4 percent compared to 1998. Numbers of dove hunters increased 16 percent and hunter-days afield decreased 5 percent. Doves per hunter decreased 17 percent from 1998.

Figure 1. Mourning dove breeding density index trend, 1964-99.

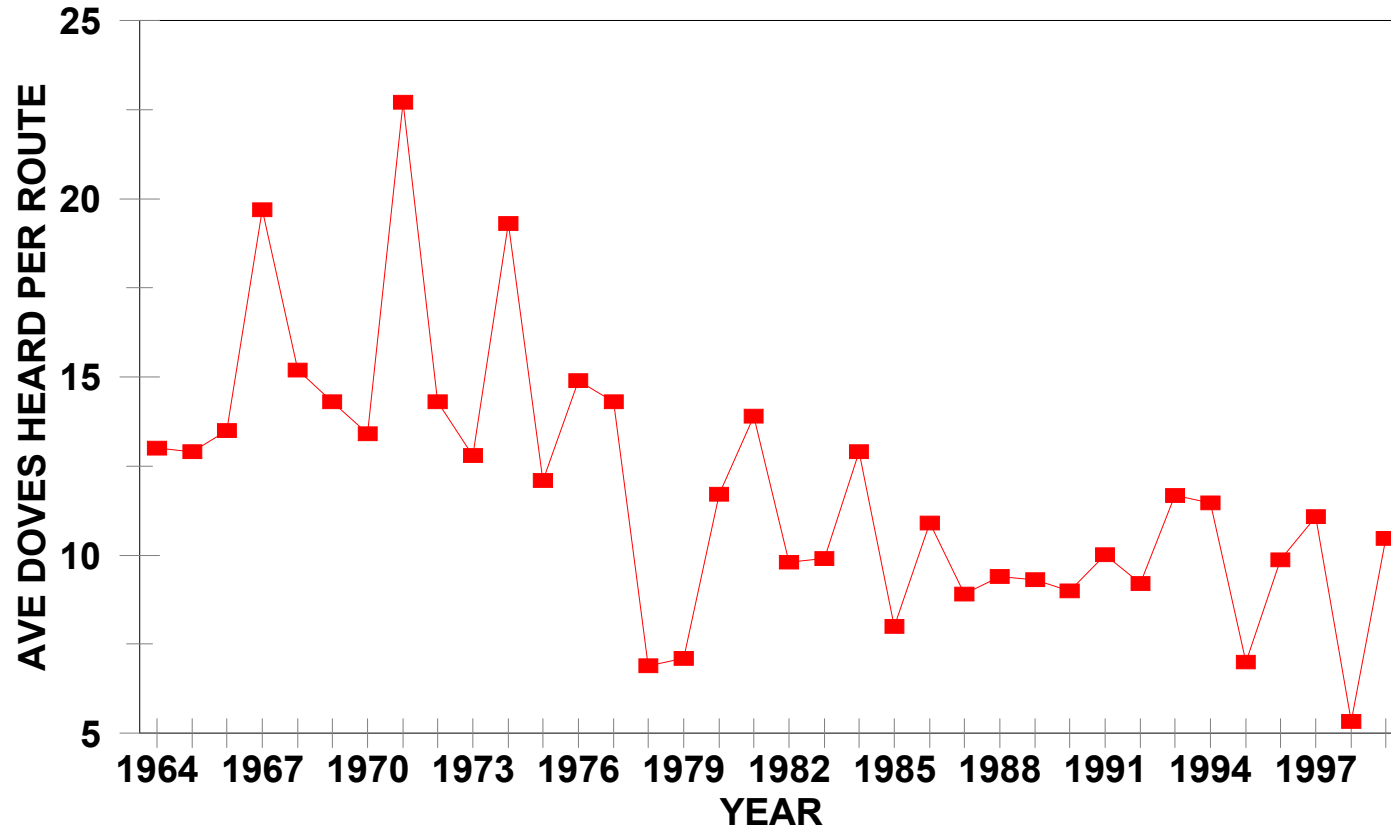


Figure 2. Statewide trends of mourning dove harvest statistics, 1951-99.

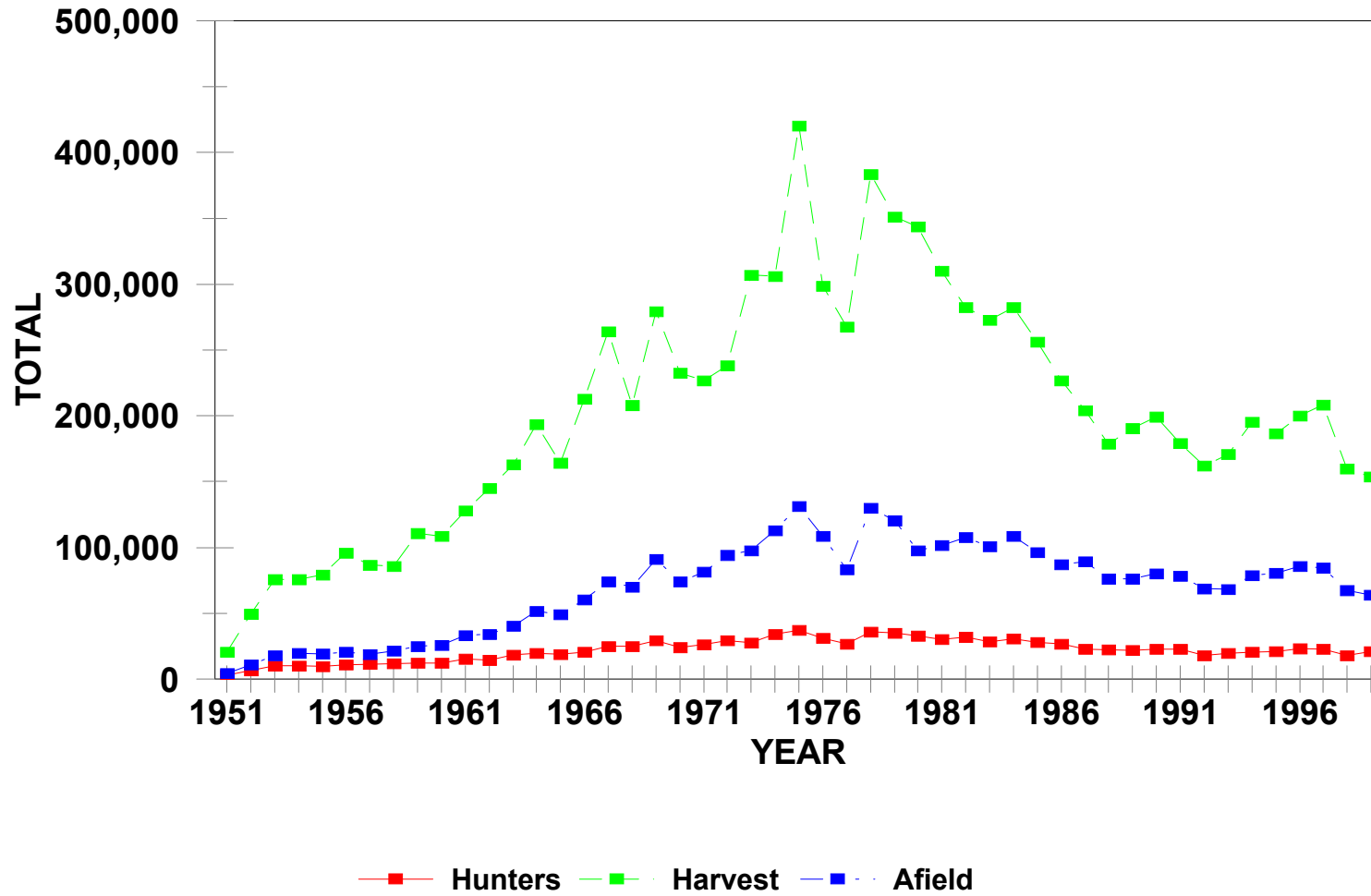
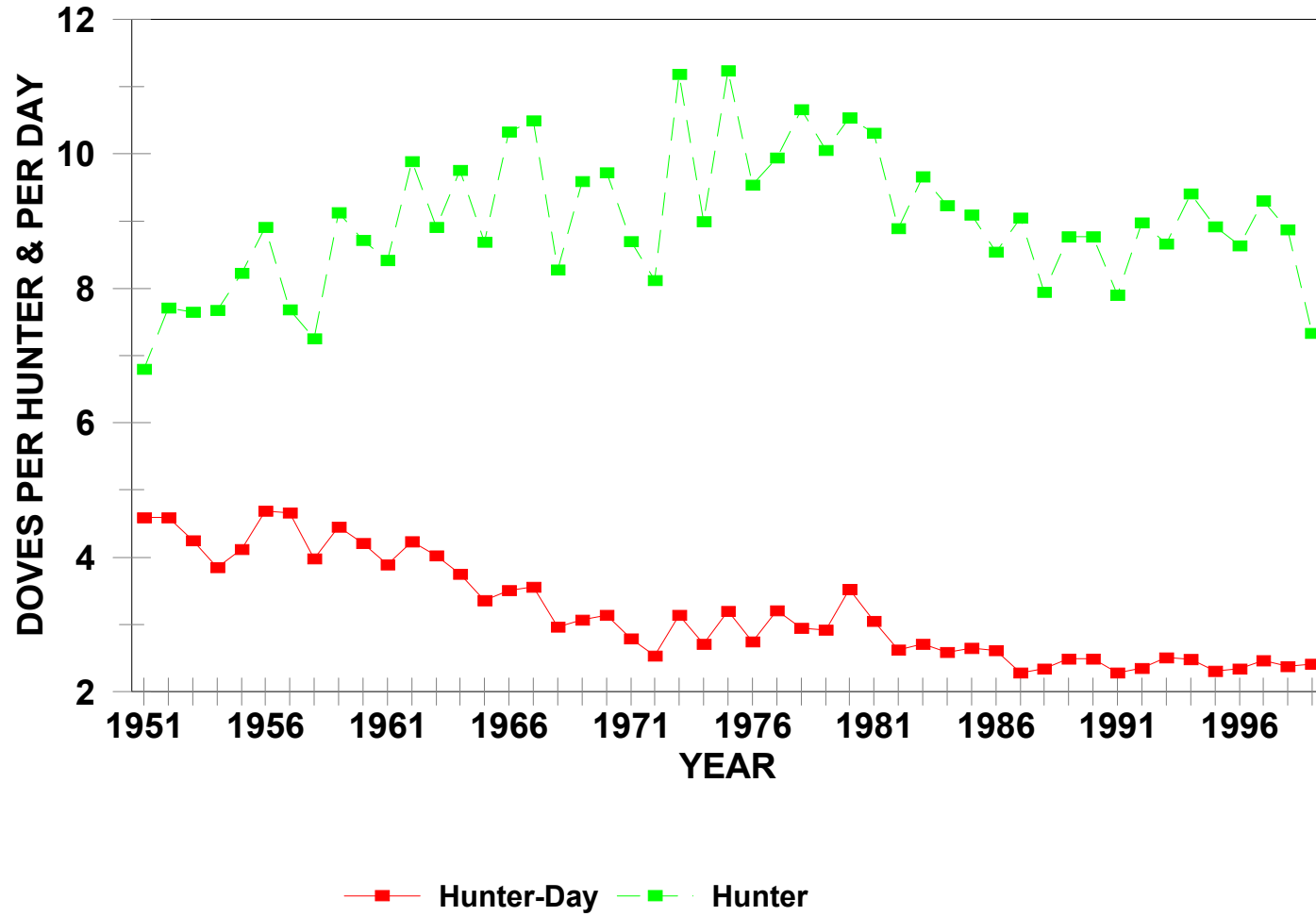


Figure 3. Statewide trends of mourning dove hunter success rates, 1951-99.



Field Bag Checks

A summary of field bag check data for 1999 is shown in Table 8. Hunter success trends determined via this method are shown in Table 9. Results of the 1999 survey compared to 1998 and the 10-year average (1989-98) follow:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Total hunters checked	262	-47	-66
Total hours hunted	674	-55	-77
Doves per hunter (complete hunts)	1.75	0	-35
Doves bagged per 100 hours (complete hunts)	43	-2	-41
Average hours per hunter-day (complete hunts)	4.10	+4	+8
Hours hunted per dove bagged (complete hunts)	2.35	+4	+57

Field bag checks indicated an opening day decrease in hunter success. The total number of hunters checked was down 47 percent from 1998. Dove hunters spent more time afield per hunter-day than in 1998, and more time was spent per dove bagged.

Age Composition of the Harvest

A summary of the age composition of harvested mourning doves from 1989 through 1999 is contained in Table 10. Hatching dates for immature doves harvested in Utah since 1990 are shown in Table 11.

Following is a comparison of data collected in 1999 compared to 1998 and the 10-year average (1989-98):

	<u>1999</u>	Percent change from 1998	Percent change from Average
Sample size	274	-56	-83
Immatures/100 adults	138	+15	+38
Percent hatched August 3+	43	-22	+32
Percent hatched July 25+	82	-2	+82
Percent hatched before July 25	18	+13	+29

Sample size decreased 56 percent in 1999. The 120 immatures per 100 adults in the harvest was up 15 percent from the previous year and is 38 percent above the long-term average.

Table 1. Summary of the mourning dove call-count survey for 1999.

Region and County	Route Number	Total Doves Heard / Route	Total Doves Seen / Route
Northern Region			
Box Elder	R1500	3	4
Summit	R1020	5	1
REGIONAL TOTALS		8	5
Central Region			
Juab	R2830	47	5
REGIONAL TOTALS		47	5
Southern Region			
Beaver	R3820	5	12
Garfield	R1090	0	0
Iron	R4001	24	1
Millard	R3640	3	8
Sevier-Sanpete	R0370	5	14
Washington	R4311	2	1
Wayne-Sevier	R0660	8	2
REGIONAL TOTALS		47	38
Northeastern Region			
Duchesne	R0080	12	2
Uintah	R0220	7	2
REGIONAL TOTALS		19	4
Southeastern Region			
Emery	R0540	8	3
San Juan	R1171	27	25
San Juan	R1451	1	0
REGIONAL TOTALS		36	28
STATE TOTALS		157	80
STATE AVERAGES		10.47	5.33
PERCENT CHANGE (from previous year)		96	60

Table 2. Regional and county summary of mourning dove breeding population trend as indicated by the number of doves heard per route during call count surveys, 1983-99.

Region and County	Route Number	Number of Doves Heard Per Route																
		1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region																		
Box Elder	R1500	1	0	0	1	2	0	0	1	1	4	5	7	4	0	3	--	3
Summit	R1020	--	1	4	5	3	5	3	3	3	4	4	4	1	1	3	3	5
REGIONAL TOTALS		1	1	4	6	5	5	3	4	4	8	9	11	5	1	6	3	8
Central Region																		
Juab	R2830	25	19	20	19	16	23	13	36	38	15	42	41	23	41	22	--	47
REGIONAL TOTALS		25	19	20	19	16	23	13	36	38	15	42	41	23	41	22	--	47
Southern Region																		
Beaver	R3820	3	6	6	4	17	13	14	9	--	3	1	16	5	1	12	5	5
Garfield	R1090	3	15	3	1	1	0	16	0	0	3	2	0	0	0	0	0	0
Iron	R4001	19	31	41	26	23	20	10	12	15	26	49	40	9	4	37	26	24
Millard	R3640	5	14	2	2	3	5	4	5	8	7	7	10	5	16	7	8	3
Sevier-Sanpete	R0370	3	5	4	4	3	3	2	6	2	5	2	6	3	5	6	4	5
Washington	R4311	14	1	0	6	7	1	6	12	14	12	16	20	14	1	4	1	2
Wayne-Sevier	R0660	--	17	3	2	0	3	7	5	0	3	6	0	4	15	3	0	8
REGIONAL TOTALS		47	89	59	45	54	45	59	49	39	59	83	92	40	42	69	44	47
Northeastern Region																		
Duchesne	R0080	0	1	8	3	4	8	13	11	7	3	2	--	2	6	3	4	12
Uintah	R0220	9	10	5	20	12	6	0	2	3	2	3	7	5	6	3	1	7
REGIONAL TOTALS		9	11	13	23	16	14	13	13	10	5	5	7	7	12	6	5	19
Southeastern Region																		
Emery	R0540	11	10	3	10	11	15	8	2	5	8	14	13	18	7	30	17	8
San Juan	R1171	30	57	25	60	31	37	43	31	38	34	21	8	12	43	19	10	27
San Juan	R1451	5	7	2	0	1	2	1	0	3	9	1	0	0	2	14	1	1
REGIONAL TOTALS		46	74	30	70	43	54	52	33	46	51	36	21	30	52	63	28	36
STATE TOTALS		128	194	126	163	134	141	140	135	137	138	175	172	105	148	166	80	157
STATE AVERAGES		8.53	12.93	8.40	10.87	8.93	9.40	9.33	9.00	9.79	9.20	11.67	11.47	7.00	9.87	11.07	5.33	10.47
PERCENT CHANGE (from previous year)		0	52	-35	29	-18	5	-1	-4	1	-8	27	-2	-39	41	12	-52	96

Table 3. Summary of mourning dove hunter success and distribution of harvest and hunting pressure by region and county, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	133	5,227	11,575	2.21	8.19	7.54
CACHE	57	3,364	7,625	2.27	5.27	4.97
DAVIS	16	1,104	1,949	1.77	1.73	1.27
MORGAN	13	448	1,328	2.96	0.70	0.87
RICH	0	0	0	0.00	0.00	0.00
SUMMIT	2	103	155	1.50	0.16	0.10
WEBER	74	5,468	8,418	1.54	8.57	5.49
REGIONAL TOTALS	295	15,716	31,052	1.98	24.64	20.23
CENTRAL REGION						
JUAB	112	4,209	13,645	3.24	6.60	8.89
SALT LAKE	28	1,345	3,329	2.47	2.11	2.17
SANPETE	45	2,570	6,193	2.41	4.03	4.04
TOOELE	152	7,556	17,061	2.26	11.84	11.12
UTAH	242	11,023	25,635	2.33	17.28	16.70
WASATCH	12	793	1,897	2.39	1.24	1.24
REGIONAL TOTALS	591	27,498	67,764	2.46	43.10	44.15
SOUTHERN REGION						
BEAVER	23	1,552	5,399	3.48	2.43	3.52
GARFIELD	4	310	707	2.28	0.49	0.46
IRON	26	1,259	3,312	2.63	1.97	2.16
KANE	1	17	86	5.00	0.03	0.06
MILLARD	120	5,572	20,080	3.60	8.73	13.08
PIUTE	3	414	483	1.17	0.65	0.31
SEVIER	35	3,640	7,763	2.13	5.71	5.06
WASHINGTON	40	3,105	8,539	2.75	4.87	5.56
WAYNE	2	120	345	2.86	0.19	0.22
REGIONAL TOTALS	254	15,992	46,717	2.92	25.07	30.44
NORTHEASTERN REGION						
DAGGETT	0	0	0	0.00	0.00	0.00
DUCHESNE	13	690	1,431	2.08	1.08	0.93
UINTAH	17	759	1,483	1.95	1.19	0.97
REGIONAL TOTALS	30	1,449	2,915	2.01	2.27	1.90
SOUTHEASTERN REGION						
CARBON	17	1,104	1,500	1.36	1.73	0.98
EMERY	19	983	2,311	2.35	1.54	1.51
GRAND	6	638	310	0.49	1.00	0.20
SAN JUAN	7	414	914	2.21	0.65	0.60
REGIONAL TOTALS	49	3,139	5,037	1.60	4.92	3.28
UNKNOWN	120	0	0	0.00	0.00	0.00
STATE TOTALS	1,339	63,796	153,487	2.41	100.00	100.00

* Total hunter trips from questionnaire returns.

Table 4. Summary of mourning doves bagged per hunter-day by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	2.56	2.49	2.63	2.91	2.69	2.79	2.51	2.21
Cache	2.16	1.88	2.54	1.78	1.94	1.76	1.38	2.27
Davis	1.19	1.39	1.26	2.09	1.37	1.65	1.45	1.77
Morgan	2.47	0.88	2.93	3.65	2.45	2.57	2.83	2.96
Rich	2.27	1.18	1.67	0.83	1.54	2.00	1.33	0.00
Summit	3.25	0.25	2.61	5.00	2.00	0.48	2.50	1.50
Weber	1.79	1.50	1.57	2.07	1.74	1.56	1.35	1.54
REGIONAL TOTALS	1.99	2.16	2.36	2.36	2.15	2.12	1.87	1.98
Central Region								
Juab	3.34	4.25	2.72	3.35	3.53	3.06	4.01	3.24
Salt Lake	2.14	1.88	2.79	1.95	2.36	1.67	3.03	2.47
Sanpete	2.06	3.21	1.78	2.27	2.68	2.15	2.05	2.41
Tooele	2.14	2.06	2.45	2.02	2.48	3.40	2.34	2.26
Utah	1.77	2.12	2.43	1.72	1.94	2.15	2.57	2.33
Wasatch	2.37	1.83	2.15	2.21	1.70	2.46	1.87	2.39
REGIONAL TOTALS	2.10	2.51	2.43	2.07	2.33	2.51	2.70	2.46
Southern Region								
Beaver	3.41	1.52	3.72	2.73	3.23	4.09	4.19	3.48
Garfield	1.67	3.50	1.47	3.18	1.00	1.22	1.00	2.28
Iron	3.96	2.42	3.60	3.91	3.20	4.70	2.73	2.63
Kane	4.05	4.09	3.00	10.00	2.87	2.32	0.00	5.00
Millard	3.30	4.40	3.20	3.44	3.25	3.44	2.21	3.60
Piute	1.33	2.83	4.50	2.59	3.30	5.00	6.00	1.17
Sevier	2.42	2.10	2.36	1.21	1.76	2.06	1.99	2.13
Washington	2.54	2.74	2.28	3.06	3.41	2.45	2.62	2.75
Wayne	2.86	1.00	2.11	1.44	2.00	2.53	1.17	2.86
REGIONAL TOTALS	3.09	2.98	2.94	2.84	2.79	2.93	2.37	2.92
Northeastern Region								
Daggett	3.25	7.00	0.00	0.00	1.00	9.00	1.00	0.00
Duchesne	2.24	2.52	3.06	2.62	2.41	2.52	3.31	2.08
Uintah	2.06	2.12	3.35	2.01	1.96	2.19	2.14	1.95
REGIONAL TOTAL	2.15	2.32	3.25	2.08	2.15	2.32	2.40	2.01
Southeastern Region								
Carbon	2.15	1.51	2.82	0.96	1.93	1.85	1.02	1.36
Emery	3.10	3.73	2.06	2.10	2.11	1.55	2.16	2.35
Grand	0.00	2.21	1.50	0.47	2.08	1.00	3.71	0.49
San Juan	2.61	3.46	4.42	4.48	4.17	0.73	5.13	2.21
REGIONAL TOTALS	2.46	3.27	2.19	2.15	2.09	1.95	2.23	1.60
Unknown counties	0.00	2.40	1.50	2.28	1.58	0.96	0.00	0.00
STATE TOTALS	2.35	2.51	2.48	2.31	2.34	2.46	2.38	2.41

Table 7. Statewide summary of mourning dove harvest statistics, 1951-99.

Year	Total Hunters	Total Harvest	Hunter-Days Afield	Doves Per Hunter-Day	Doves Per Hunter
1951	3,007	20,448	4,455	4.59	6.80
1952	6,420	49,498	10,784	4.59	7.71
1953	9,887	75,636	17,797	4.25	7.65
1954	9,901	75,941	19,724	3.85	7.67
1955	9,653	79,444	19,282	4.12	8.23
1956	10,744	95,729	20,411	4.69	8.91
1957*	11,298	86,769	18,620	4.66	7.68
1958	11,853	85,934	21,591	3.98	7.25
1959	12,142	110,856	24,911	4.45	9.13
1960	12,440	108,477	25,766	4.21	8.72
1961	15,192	128,001	33,434	3.89	8.42
1962	14,663	144,826	34,281	4.23	9.89
1963	18,258	162,769	40,490	4.02	8.91
1964	19,829	193,538	51,671	3.75	9.76
1965	18,710	164,087	48,835	3.36	8.69
1966	20,594	212,696	60,608	3.51	10.33
1967	25,161	263,949	74,171	3.56	10.49
1968	25,105	207,922	70,186	2.96	8.28
1969	29,131	279,311	90,965	3.07	9.59
1970	23,908	232,469	73,984	3.14	9.72
1971	26,064	226,645	81,271	2.79	8.70
1972	29,341	238,354	94,046	2.53	8.12
1973	27,435	307,062	97,788	3.14	11.19
1974	34,021	306,076	112,967	2.71	9.00
1975	37,378	420,308	131,312	3.20	11.24
1976	31,293	298,505	108,780	2.74	9.54
1977	26,905	267,487	83,218	3.21	9.94
1978	35,985	383,696	130,173	2.95	10.66
1979	34,903	351,161	120,459	2.92	10.06
1980	32,627	343,851	97,644	3.52	10.54
1981	30,060	310,068	101,728	3.05	10.31
1982**	31,756	282,188	107,728	2.62	8.89
1983	28,258	272,979	100,568	2.71	9.66
1984	30,573	282,307	108,793	2.59	9.23
1985	28,183	256,045	96,507	2.65	9.09
1986	26,583	226,985	87,084	2.61	8.54
1987***	22,553	204,030	89,378	2.28	9.05
1988	22,457	178,469	76,219	2.34	7.95
1989	21,696	190,328	76,372	2.49	8.77
1990	22,700	199,007	80,076	2.49	8.77
1991	22,632	178,853	78,405	2.28	7.90
1992	18,021	161,902	68,937	2.35	8.98
1993	19,725	170,834	68,143	2.51	8.66
1994	20,743	195,089	78,594	2.48	9.41
1995	20,896	186,336	80,688	2.31	8.92
1996	23,180	200,167	85,613	2.34	8.64
1997	22,594	208,331	84,638	2.46	9.3
1998	18,030	160,014	67,234	2.38	8.87
1999	20,926	153,487	63,796	2.41	7.33
Totals					
(1951-99)	1,075,414	9,938,864	3,420,125	--	--
Averages					
(1951-98)	21,969	203,862	69,924	3.20	9.04

* Estimated.

**Bag limit increased to 15.

***Bag limit reduced to 10.

Table 8. Mourning dove field bag check summary, 1999.

Region and County	All Hunts					Complete Hunts					
	Total Parties	Total Hunters	Total Hours	Total Birds	Birds/100 Hr	Complete Hunts	Total Hunters	Total Hours	Total Birds	Birds/100 Hr	Birds/Hunter
Northern Region											
Box Elder	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Central Region											
Juab	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	15	78	233	115	49	4	54	167	78	47	1.44
Southern Region											
Beaver	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region											
Daggett	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region											
Carbon	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
LEHI CHECK STATION	--	--	--	--	--	--	--	--	--	--	--
NEPHI CHECK STATION	48	106	441	283	64	22	56	248	200	81	3.57
THIOKOL CHECK STATION	35	78	--	262	ERR	24	49	237	198	84	4.04
STATE TOTALS	98	262	674	660	98	50	159	652	278	43	1.75

Table 9. Mourning dove hunter success trend as determined by field bag checks, 1994-99.

Region and County	1994		1995		1996		1997		1998		1999	
	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter
Northern Region												
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	47	1.44
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	327	6.13	121	2.71	--	--	--	--	100	1.60	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	154	4.05	144	2.57	--	--	210	5.79	238	5.17	--	--
REGIONAL TOTALS	193	4.64	127	2.67	--	--	210	5.79	186	3.55	--	--
LEHI CHECK STATION	88	3.09	40	1.58	30	1.19	31	1.03	--	--	--	--
NEPHI CHECK STATION	127	3.79	114	4.13	66	2.48	115	3.61	59	2.33	81	3.57
THIOKOL CHECK STATION	--	--	95	4.66	56	2.70	95	3.24	121	5.05	84	4.04
STATE TOTALS	83	2.88	56	2.22	28	1.16	28	1.76	44	1.76	43	1.75

Table 10. Age composition (Immatures/100 Adults) of Mourning Doves Harvested, 1989-99.

Region and County	1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		1989-98 Average	
	I/	100A(n)	I/	100A(n)	I/	100A(n)	I/	100A(n)	I/	100A(n)	I/	100A(n)	I/	100A(n)	I/	100A(n)	I/	100A(n)	I/	100A(n)	I/	100A(n)	I/	100A(n)
Northern Region																								
Box Elder	82	435	239	487	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	82	435	239	487	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	161	461
Central Region																								
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	83	11	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	83	11	--	--	--	--	--	--	--	--	12	18	83	11
Southern Region																								
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	141	41	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	141	41	--	--	--	--	--	--	--	--	--	--	141	41
Northeastern Region																								
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region																								
Carbon	--	--	128	73	--	--	68	84	64	18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Emery	85	37	79	143	81	96	169	70	104	104	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	50	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	56	39	93	137	36	30	63	150	--	--	132	95	60	176	--	--	--	--	88	108	33	53	--	--
REGIONAL TOTALS	56	86	93	353	68	126	81	304	97	122	132	95	60	176	--	--	67	92	88	108	33	53	82	162
LEHI CHECK STATION	92	978	116	144	109	587	--	--	95	1,048	151	601	124	452	77	525	67	92	--	--	--	--	104	553
NEPHI CHECK STATION	64	955	134	829	126	772	93	406	72	588	123	515	84	730	86	546	152	78	423	296	186	87	136	572
THIOKOL CHECK STATION	--	--	--	--	115	370	90	177	80	289	154	424	142	445	98	493	82	613	235	216	148	116	125	378
STATE TOTALS	77	2,454	127	1,813	114	1,855	92	887	86	2,047	73	1,635	96	1,855	116	1,564	100	1,652	120	620	138	274	100	1,637

Table 11. Percent of harvest by hatching date of immature mourning doves in Utah, 1990-99.

Date Hatched	Age (Days)	P	PERCENT OF HARVEST BY HATCH DATE										SAMPLE SIZE									
			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Aug 3+	29	none	52.2	--	37.8	--	53.7	56.1	--	45.9	55	43.0	254	--	118	--	22	37	--	17	48	14
Jul 31	32	1	26.7	--	32.1	--	19.5	21.2	--	21.6	18	24.0	130	--	100	--	8	14	--	8	16	8
Jul 25	38	2	13.1	--	10.9	--	9.8	10.6	--	18.9	11	15.0	64	--	34	--	4	7	--	7	10	5
Jul 18	45	3	4.3	--	9.3	--	7.3	6.1	--	5.4	9	9.0	21	--	29	--	3	4	--	2	8	3
Jul 9	54	4	2.3	--	4.5	--	7.3	4.5	--	8.1	5	3.0	11	--	14	--	3	3	--	3	4	1
Jun 30	63	5	0.6	--	4.2	--	0.0	1.5	--	0.0	2	6.0	3	--	13	--	0	1	--	0	2	2
Jun 21	72	6	0.4	--	1.0	--	2.4	0.0	--	0.0	0.0	0.0	2	--	3	--	1	0	--	0	0	0
Jun 8	85	7	--	--	0.3	--	0.0	0.0	--	0.0	0.0	0.0	--	--	1	--	0	0	--	0	0	0
May 22	102	8	--	--	--	--	0.0	0.0	--	0.0	0.0	0.0	--	--	--	--	0	0	--	0	0	0
Apr 27	127	9	0.4	--	--	--	0.0	0.0	--	0.0	0.0	0.0	2	--	--	--	0	0	--	0	0	0
Apr 21	133	10	0.0	--	--	--	0.0	0.0	--	0.0	0.0	0.0	--	--	--	--	0	0	--	0	0	0
			100	--	100	--	100	100	--	100	100	100	487	--	312	--	41	66	--	37	88	33

P = Last primary molted.

BAND-TAILED PIGEON

Banding

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

Harvest

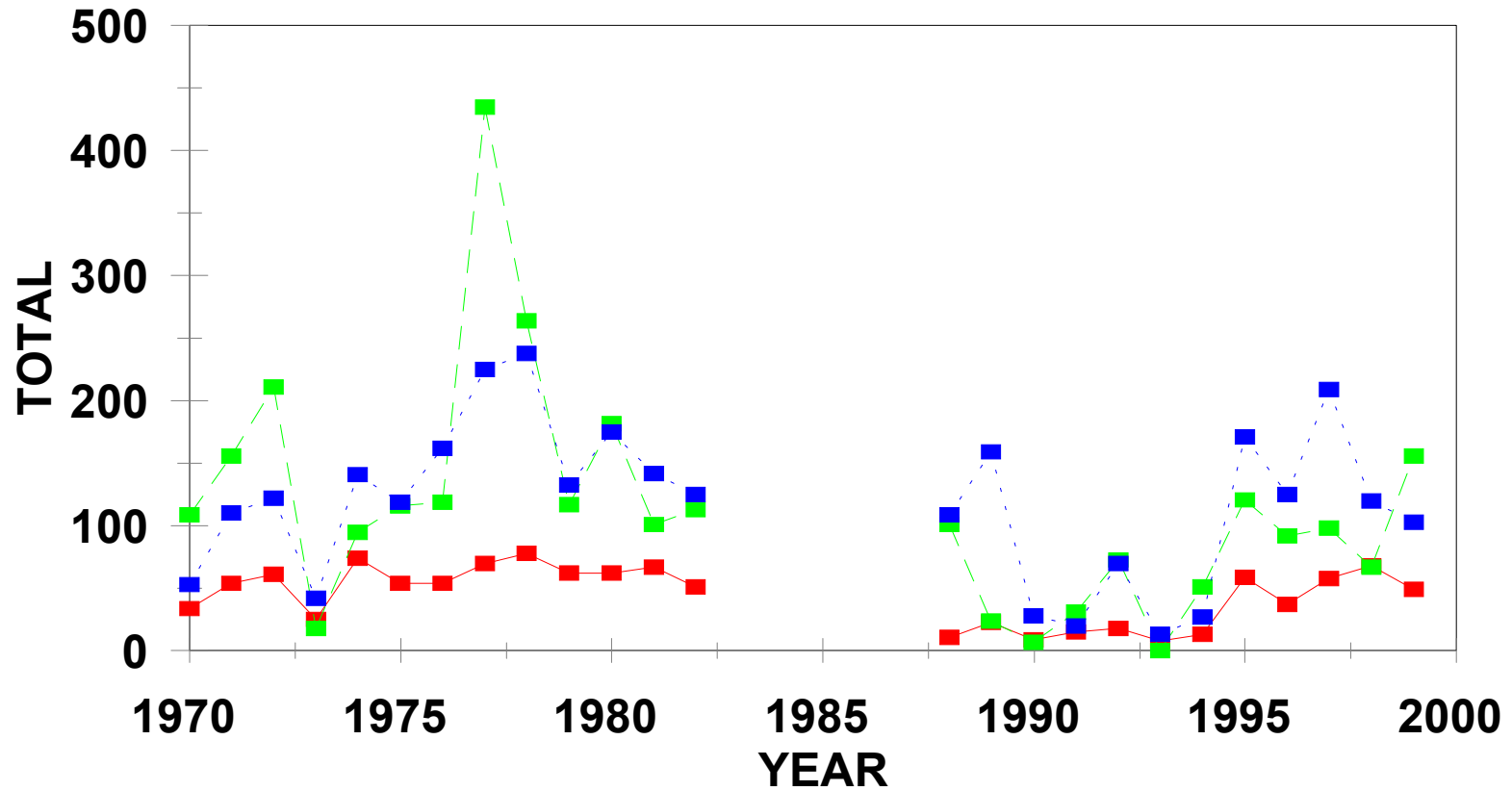
Results of the 1999 band-tailed pigeon harvest is in Table 13. Free hunting permits were required in 1999 as well as registration in the HIP program. A harvest questionnaire was sent to participants. Only 109 hunters obtained the band-tailed pigeon permit in 1999. Harvest trends since 1970 are shown in Figures 4 & 5 and Table 14.

	<u>1999</u>	Percent change from 1998	Percent change from Average
Band-tailed pigeon hunters afield	49	-28	+10
Band-tailed pigeon harvest	103	+54	-9
Hunter-days afield	156	+30	+32
Pigeons per hunter-day	0.66	+18	-33
Pigeons per hunter	2.10	+112	-23

Band-tailed pigeon hunters afield decreased from 1998, but was 10 percent above the long-term average.

One hundred three pigeons were estimated to have been harvested in 1999.

Figure 4. Band-tailed pigeon harvest statistics, 1970-99.



—■— Total Hunters

- -■- Total Harvest

- -■- Hunter-Days Afield

Figure 5. Trends of band-tailed pigeon hunter success rates, 1970-99.

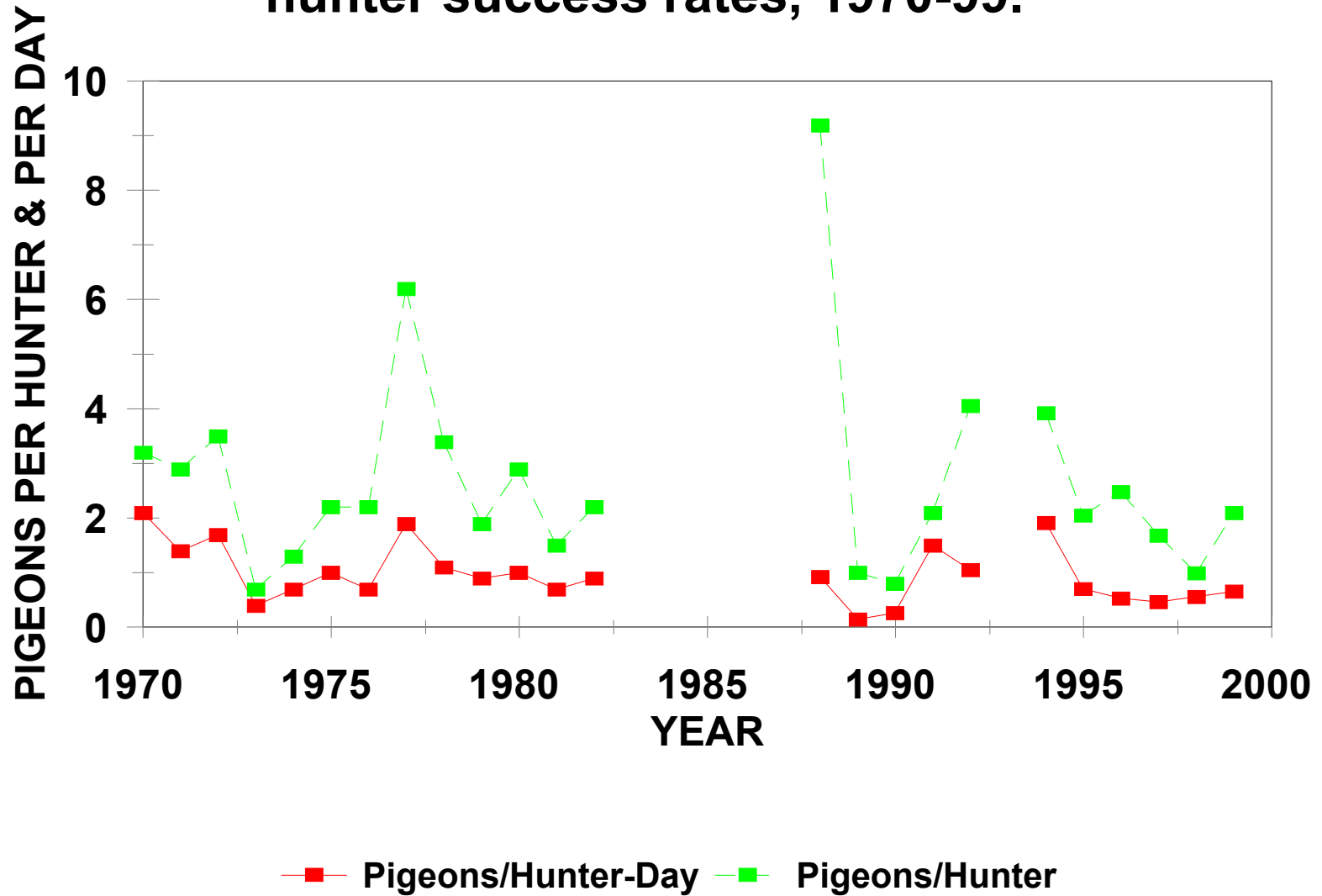


Table 13. Band-tailed pigeon harvest statistics, 1999.

Area Hunted	Hunters Afield	Hunter-Days Afield	Harvest	Pigeons/ Hunter-Day	Pigeons/ Hunter	Percent Pressure*	Percent Harvest	Pigeons Crippled	Pigeons Observed
Beaver County	--	--	--	ERR	ERR	0	0.00	0	
Blue Mountain-Elk Ridge	3	3	3	1.00	1.00	2	2.91	0	47
Iron County	6	22	0	0.00	0.00	14	0.00	0	0
Kane County	6	22	16	0.73	2.67	14	15.53	0	31
LaSal Mountain	25	81	84	1.04	3.36	52	81.55	3	947
Washington County	6	19	0	0.00	0.00	12	0.00	0	0
Other	3	9	0	0.00	0.00	6	0.00	0	934
Totals	49	156	103	0.66	2.10	100	100	3	1,959

*Based on hunter-days.

Projection Factor = 3.11428571429 (NUMBER OF PERMITS ISSUED/NUMBER OF QUESTIONNAIRES RETURNED)
 109 PERMITS SOLD
 35 QUESTIONNAIRES RETURNED
 32% QUESTIONNAIRE RETURN RATE

Table 14. Statewide summary of band-tailed pigeon harvest statistics, 1970-99.

Year	Total Hunters	Total Harvest	Hunter-Days Afield	Pigeons/Hunter-Day	Pigeons/Hunter
1970	34	109	53	2.10	3.20
1971	54	156	110	1.40	2.90
1972	61	211	122	1.70	3.50
1973	25	18	42	0.40	0.70
1974	74	95	141	0.70	1.30
1975	54	116	119	1.00	2.20
1976	54	119	162	0.70	2.20
1977	70	435	225	1.90	6.20
1978	78	264	238	1.10	3.40
1979	62	117	133	0.90	1.90
1980	62	182	175	1.00	2.90
1981	67	101	142	0.70	1.50
1982	51	113	125	0.90	2.20
1983	--	--	--	--	--
1984	--	--	--	--	--
1985	--	--	--	--	--
1986	--	--	--	--	--
1987	--	--	--	--	--
1988	11	101	109	0.93	9.20
1989	23	24	159	0.15	1.00
1990	9	7	28	0.26	0.80
1991	15	31	20	1.50	2.10
1992	18	73	70	1.05	4.06
1993	8	0	13	--	--
1994	13	51	27	1.92	3.92
1995	59	121	171	0.71	2.05
1996	37	92	125	0.53	2.49
1997	58	98	209	0.47	1.69
1998	68	67	120	0.56	0.99
1999	49	103	156	0.66	2.10
Totals (1970-99)	1,114	2,804	2,994	--	--
Averages (1970-98)	44	113	118	0.98	2.71



Chukar Partridge

Late winter and early spring precipitation, critical to successful chukar production, was normal in 1999 (Figure 3).

Results of the aerial survey indicated that chukars per square mile was down 34 percent over 1998.

Harvest statistics from the general mail questionnaire reflected an 80 percent increase in total harvest by 55 percent more hunters than in 1998. Hunter success (chukars per hunter-day) increased 10 percent from 1998 while time afield increased 63 percent.

Aerial Survey

Results of the annual aerial survey for 1999 are shown in Table 1 of this section. Following are the survey results for 1999 compared to 1998 and the 1996-98 average.

	<u>1999</u>	Percent change from <u>1998</u>	Percent change from <u>Average</u>
Coveys flushed	65	+25	+138
Total chukars observed	623	-34	+40
Chukars per square mile	77.88	-34	+37
Chukars per survey hour	356.00	-49	+3

This population survey technique was implemented in 1996. The survey allows for rapid counting of localized chukar populations versus ground brood count surveys. Chukars observed per square mile decreased 34 percent over 1998. Chukars observed per survey hour decreased 49 percent over 1998.

Harvest

Hunter Questionnaire

Results of the hunter questionnaire survey for 1999 are shown in Table 2. Long-term trends of chukars bagged per hunter-day, percent of harvest and percent of pressure (hunter-days) by county are found in Tables 3-5 and total statewide harvest statistics in Table 6 and Figures 1 and 2. Following is a comparison of 1999 harvest statistics to 1998 and the previous 41-year average:

	<u>1999</u>	Percent change from <u>1998</u>	Percent change from <u>Average</u>
Chukar hunters	14,388	+55	+9
Chukars harvested	64,727	+80	+76
Hunter-days afield	53,842	+63	+33
Chukars per hunter-day	1.20	+10	+37
Chukars per hunter	4.50	+16	+67

Chukar hunters and hunter effort increased from 1998. Chukars per hunter-day increased 10 percent from 1998 and was 37 percent above the long-term average. Total harvest increased 80 percent in 1999.

Field Bag Checks

A summary of field bag check data for 1999 is shown in Table 7. The hunter success trend determined via this method are shown in Table 8. Data for the 1999 season compared to 1998 and the 10-year (1989-98) average follow:

	<u>1999</u>	Percent change from <u>1998</u>	Percent change from <u>Average</u>
Total hunters checked	1	-99	-97
Total hours hunted	2	-99	-99
Chukars per hunter (complete hunts)	2.00	+108	+27
Chukars bagged per 100 hours (complete hunts)	100	+257	+130
Average hours per hunter-day (complete hunts)	2.00	-42	-48
Hours hunted per chukar bagged (complete hunts)	1.00	-72	-70

Total hunters checked in 1999 decreased over 1998.

Figure 1. Statewide trends of chukar partridge harvest statistics, 1958-99.

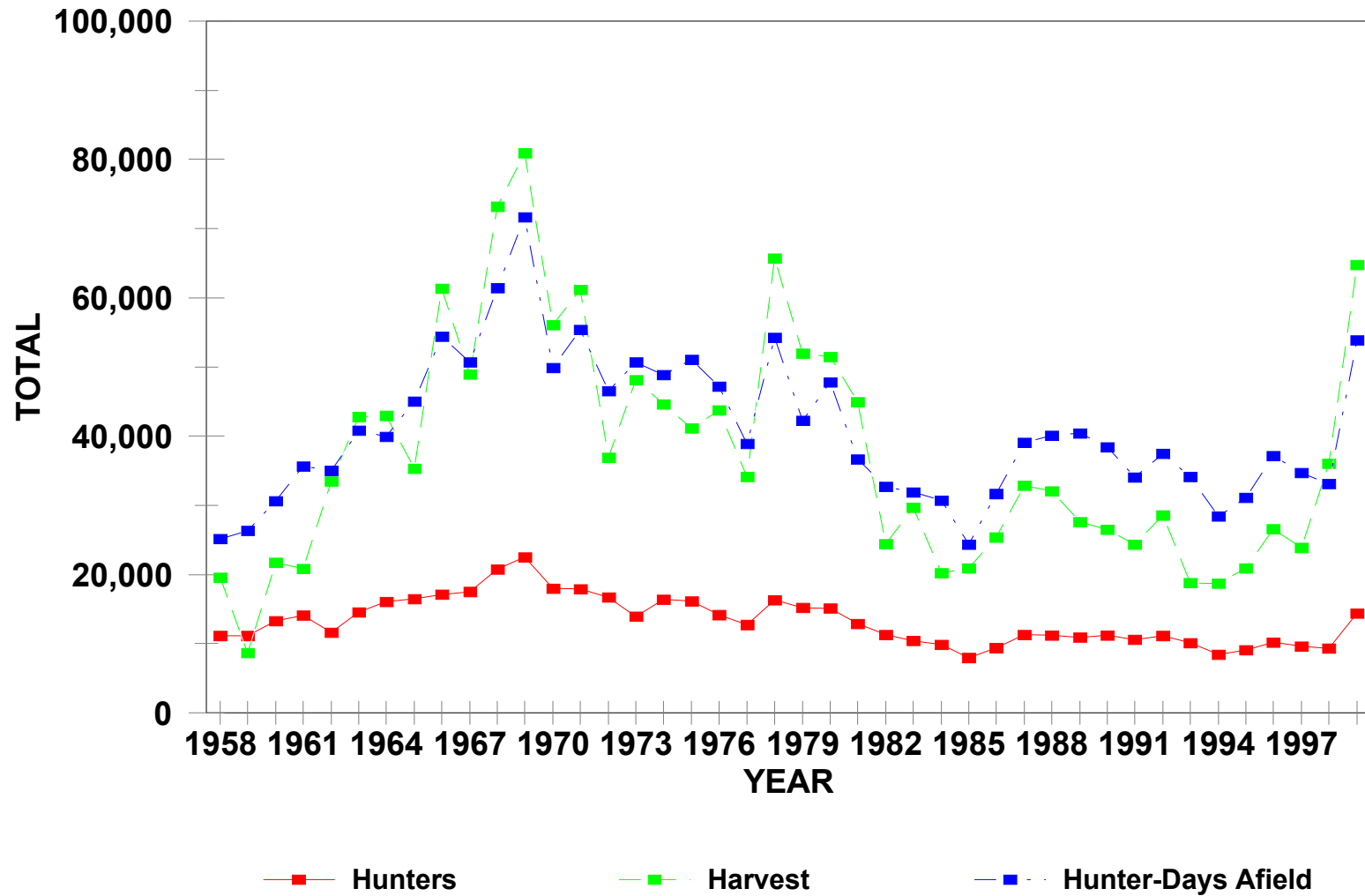
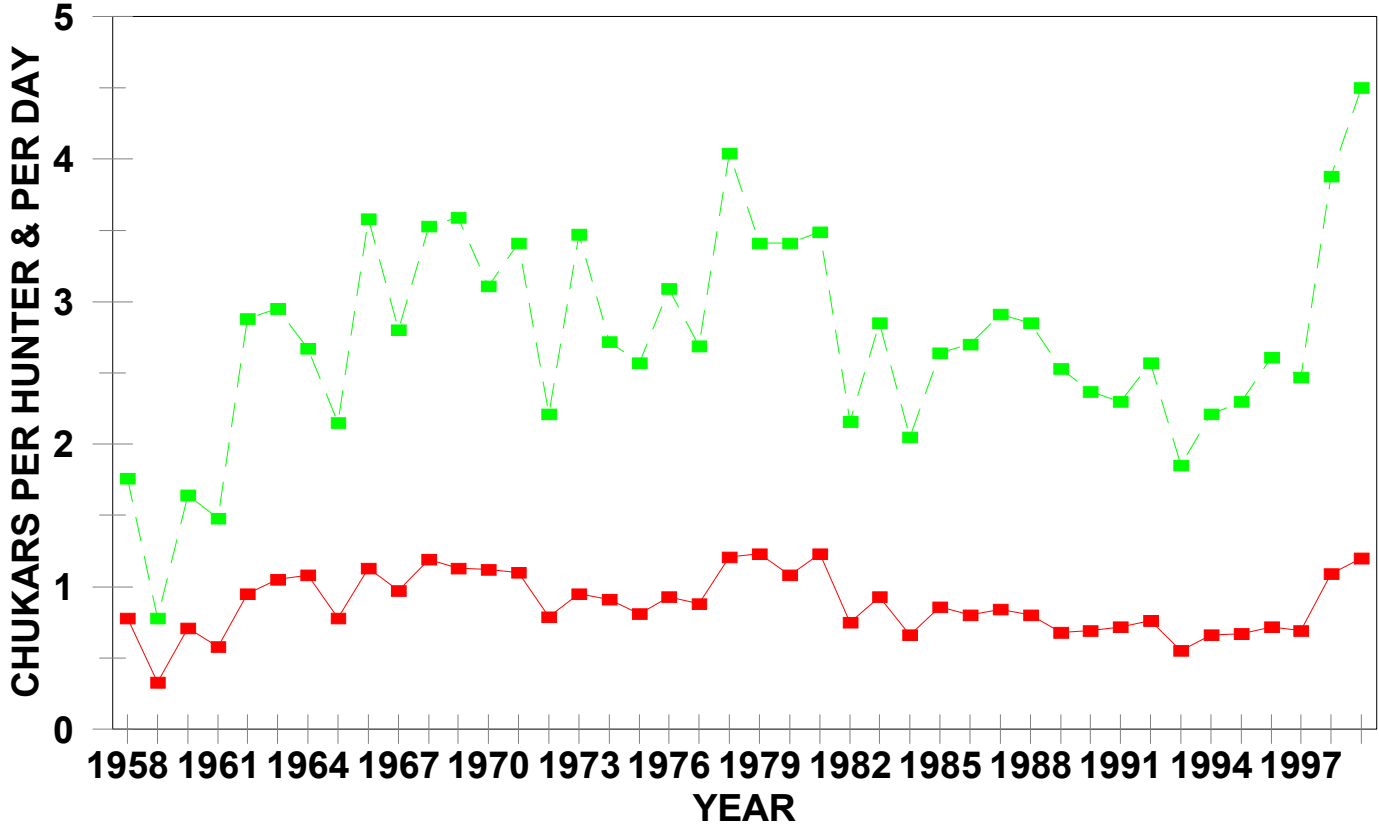


Figure 2. Statewide trends of chukar hunter success rates, 1958-99.



—■— Chukars Per Hunter-Day -■- Chukars Per Hunter

Figure 3. Jan-Apr precipitation vs. chukar production, 1968-99.

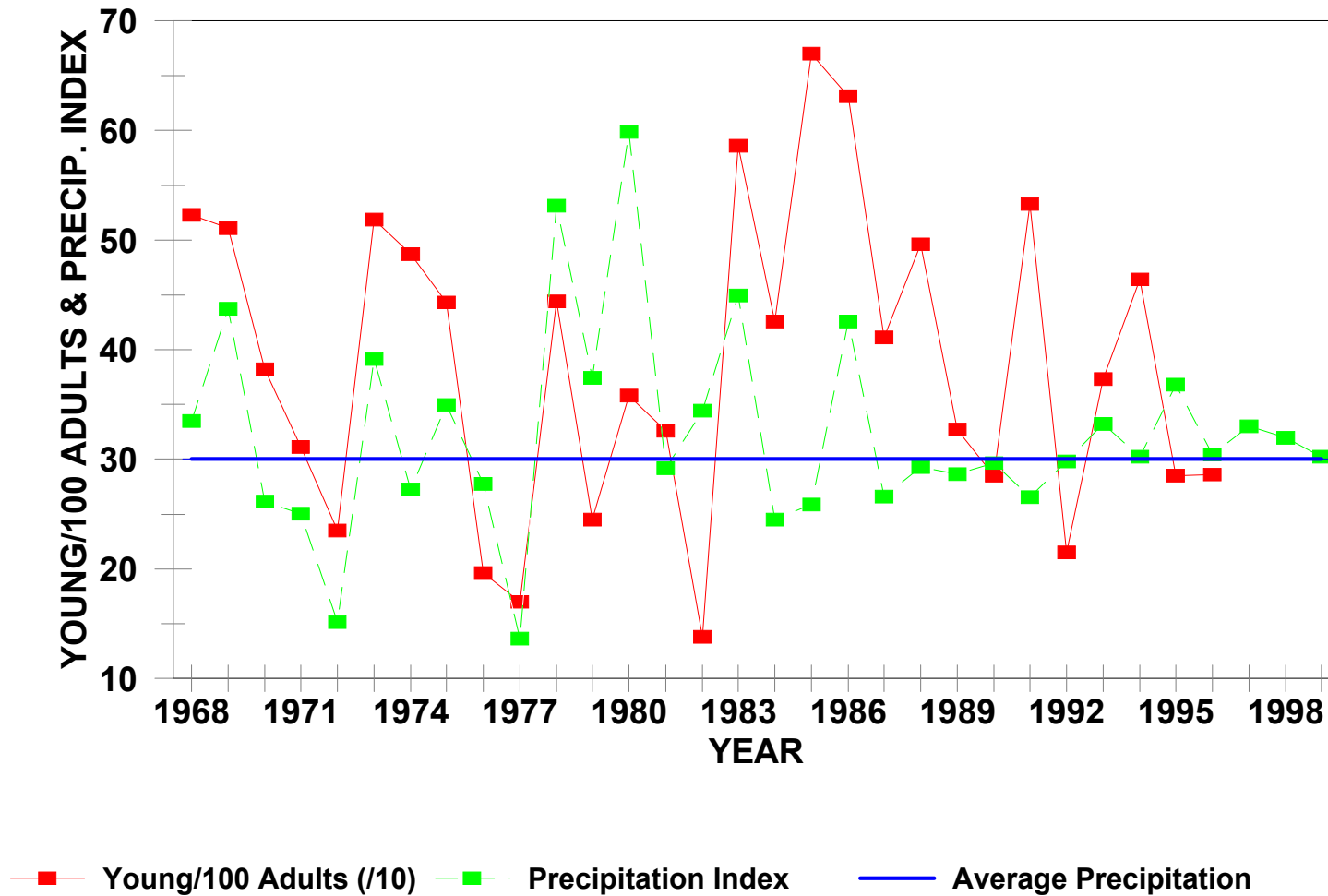


Table 1. Chukar aerial survey, 1996-99.

Year	Area	Date	Coveys Flushed	Total Chukars Observed	Square Miles Surveyed	Chukars/Square Mile	Elasped Time (hours)	Chukars/Survey Hour
1996	Northeast Cedar Mountains (Tooele County)	08/21/96	12	103	6.49	15.87	1.17	88.03
1997	Northeast Cedar Mountains (Tooele County)	08/20/97	18	295	8.00	36.88	1.17	252.14
1998	Northeast Cedar Mountains (Tooele County)	09/03/98	52	939	8.00	117.38	1.35	695.56
1999	Northeast Cedar Mountains (Tooele County)	08/16/99	65	623	8.00	77.88	1.75	356.00
Totals (1996-99)			147	1960	30.49	--	5.44	--
Averages (1996-98)			27	446	7.50	56.71	1.23	345.24

Table 2. Summary of chukar hunter success and distribution of harvest and hunting pressure by region and county, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	195	10,902	12,438	1.14	20.25	19.22
CACHE	35	1,380	1,466	1.06	2.56	2.27
DAVIS	1	34	0	0.00	0.06	0.00
MORGAN	18	741	1,897	2.56	1.38	2.93
RICH	3	86	34	0.40	0.16	0.05
SUMMIT	11	448	345	0.77	0.83	0.53
WEBER	11	345	138	0.40	0.64	0.21
REGIONAL TOTALS	274	13,939	16,319	1.17	25.89	25.21
CENTRAL REGION						
JUAB	60	3,191	4,623	1.45	5.93	7.14
SALT LAKE	5	345	120	0.35	0.64	0.19
SANPETE	27	1,742	1,380	0.79	3.24	2.13
TOOELE	197	14,957	21,995	1.47	27.78	33.98
UTAH	98	6,434	6,400	0.99	11.95	9.89
WASATCH	5	189	120	0.64	0.35	0.19
REGIONAL TOTALS	392	26,860	34,641	1.29	49.89	53.52
SOUTHERN REGION						
BEAVER	20	1,190	1,311	1.10	2.21	2.03
GARFIELD	0	0	0	0.00	0.00	0.00
IRON	5	172	34	0.20	0.32	0.05
KANE	0	0	0	0.00	0.00	0.00
MILLARD	56	3,243	5,796	1.79	6.02	8.96
PIUTE	5	293	51	0.18	0.54	0.08
SEVIER	33	3,088	2,087	0.68	5.74	3.22
WASHINGTON	0	0	0	0.00	0.00	0.00
WAYNE	4	120	172	1.43	0.22	0.27
REGIONAL TOTALS	123	8,108	9,453	1.17	15.06	14.61
NORTHEASTERN REGION						
DAGGETT	0	0	0	0.00	0.00	0.00
DUCHESNE	20	1,086	1,552	1.43	2.02	2.40
UINTAH	19	931	759	0.81	1.73	1.17
REGIONAL TOTALS	39	2,018	2,311	1.15	3.75	3.57
SOUTHEASTERN REGION						
CARBON	15	690	586	0.85	1.28	0.91
EMERY	27	1,293	828	0.64	2.40	1.28
GRAND	14	845	465	0.55	1.57	0.72
SAN JUAN	1	86	120	1.40	0.16	0.19
REGIONAL TOTALS	57	2,915	2,001	0.69	5.41	3.09
UNKNOWN	61	0	0	0.00	0.00	0.00
STATE TOTALS	946	53,842	64,727	1.20	100.00	100.00

*Total hunter trips from questionnaire returns

Table 3. Summary of chukars bagged per hunter-day by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	0.86	0.37	0.72	1.12	0.88	0.78	0.93	1.14
Cache	0.89	0.28	0.03	0.26	0.57	0.45	0.32	1.06
Davis	0.38	0.25	0.21	0.17	1.58	0.50	0.83	0.00
Morgan	0.41	0.20	1.19	0.00	2.80	1.39	1.11	2.56
Rich	0.33	0.17	0.00	0.00	1.33	0.00	2.00	0.40
Summit	0.33	0.36	0.67	0.00	1.00	0.11	0.67	0.77
Weber	0.66	0.62	0.14	0.48	0.43	0.30	1.26	0.40
REGIONAL TOTALS	0.76	0.36	0.61	0.89	0.92	0.74	0.89	1.17
Central Region								
Juab	0.77	0.50	0.94	0.58	0.54	1.11	1.57	1.45
Salt Lake	1.08	1.30	0.58	0.79	0.97	0.25	0.50	0.35
Sanpete	0.77	0.76	0.58	0.30	0.20	1.33	0.55	0.79
Tooele	0.76	0.41	0.65	0.58	0.83	0.67	1.22	1.47
Utah	0.65	0.53	0.84	0.62	0.64	0.68	1.23	0.99
Wasatch	0.32	1.64	0.43	0.33	0.02	0.78	0.00	0.64
REGIONAL TOTALS	0.73	0.54	0.72	0.55	0.65	0.74	1.22	1.29
Southern Region								
Beaver	0.28	0.48	0.04	0.33	2.00	1.60	1.28	1.10
Garfield	0.00	1.33	1.78	0.00	0.00	0.57	0.38	0.00
Iron	0.44	0.00	0.80	0.50	0.00	0.00	0.00	0.20
Kane	0.00	0.29	0.00	0.33	0.00	0.00	0.00	0.00
Millard	1.35	0.51	0.55	0.71	1.06	0.59	1.42	1.79
Piute	0.18	0.39	0.20	0.45	0.79	2.50	1.46	0.18
Sevier	0.67	0.48	0.38	0.27	0.51	0.43	1.07	0.68
Washington	0.00	1.82	0.00	1.00	0.00	0.00	1.00	0.00
Wayne	0.20	0.27	2.33	0.15	0.60	0.17	0.00	1.43
REGIONAL TOTALS	0.73	0.53	0.43	0.36	0.65	0.54	1.18	1.17
Northeastern Region								
Daggett	0.00	1.00	0.00	0.00	2.00	0.00	0.00	0.00
Duchesne	1.86	0.51	0.74	1.39	1.16	0.52	0.61	1.43
Uintah	0.75	0.38	0.00	1.47	0.83	0.56	1.05	0.81
REGIONAL TOTAL	0.95	0.52	0.43	1.43	1.07	0.53	0.75	1.15
Southeastern Region								
Carbon	1.25	0.56	0.80	0.71	0.80	0.29	0.75	0.85
Emery	0.88	0.41	0.63	0.96	0.36	0.60	0.40	0.64
Grand	3.40	1.61	1.83	1.29	0.00	0.08	1.42	0.55
San Juan	0.00	0.00	0.20	4.00	0.00	0.00	1.00	1.40
REGIONAL TOTALS	1.24	1.14	0.97	1.07	0.41	0.41	0.92	0.69
Unknown counties	0.20	1.06	0.00	0.87	0.63	0.00	0.00	0.00
STATE TOTALS	0.76	0.55	0.66	0.67	0.72	0.69	1.09	1.20

Table 6. Statewide summary of chukar partridge harvest statistics, 1958-99.

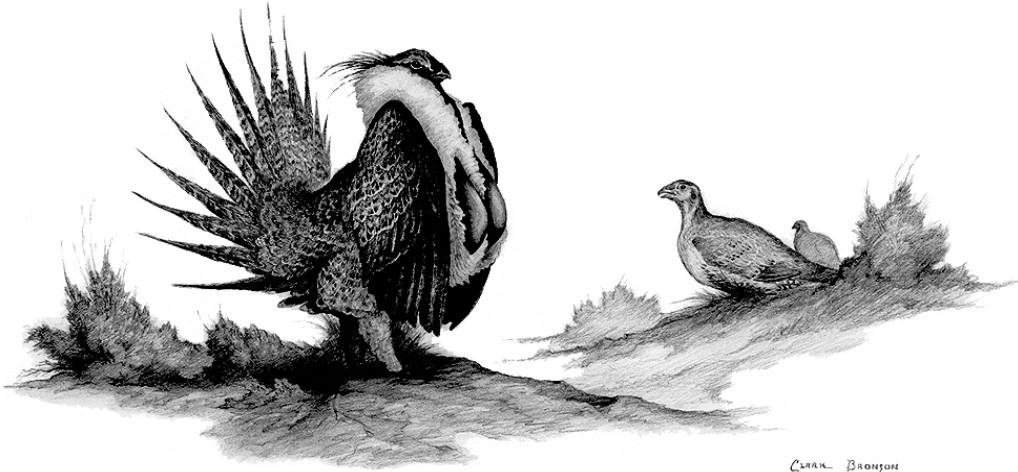
Year	Total Hunters	Total Harvest	Hunter-Days Afield	Chukars Per Hunter-Day	Chukars Per Hunter
1958	11,124	19,578	25,100	0.78	1.76
1959	11,154	8,700	26,364	0.33	0.78
1960	13,252	21,733	30,610	0.71	1.64
1961	14,046	20,821	35,675	0.58	1.48
1962	11,638	33,500	35,010	0.95	2.88
1963	14,532	42,806	40,824	1.05	2.95
1964	16,090	42,974	39,971	1.08	2.67
1965	16,431	35,335	45,067	0.78	2.15
1966	17,133	61,370	54,448	1.13	3.58
1967	17,485	48,906	50,671	0.97	2.80
1968	20,744	73,218	61,402	1.19	3.53
1969	22,529	80,917	71,674	1.13	3.59
1970	18,013	56,053	49,911	1.12	3.11
1971	17,917	61,151	55,378	1.10	3.41
1972	16,685	36,925	46,502	0.79	2.21
1973	13,888	48,135	50,677	0.95	3.47
1974	16,412	44,658	48,856	0.91	2.72
1975	16,156	41,151	51,083	0.81	2.57
1976	14,171	43,726	47,143	0.93	3.09
1977	12,691	34,155	38,873	0.88	2.69
1978	16,291	65,747	54,239	1.21	4.04
1979	15,210	51,918	42,254	1.23	3.41
1980	15,100	51,511	47,778	1.08	3.41
1981	12,907	44,983	36,662	1.23	3.49
1982	11,326	24,460	32,691	0.75	2.16
1983	10,418	29,649	31,904	0.93	2.85
1984	9,846	20,179	30,715	0.66	2.05
1985	7,930	20,938	24,346	0.86	2.64
1986	9,397	25,346	31,672	0.80	2.70
1987	11,276	32,848	39,099	0.84	2.91
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
1992	11,125	28,599	37,463	0.76	2.57
1993	10,128	18,774	34,147	0.55	1.85
1994	8,455	18,721	28,389	0.66	2.21
1995	9,097	20,954	31,140	0.67	2.30
1996	10,197	26,594	37,116	0.72	2.61
1997	9,665	23,840	34,711	0.69	2.47
1998	9,283	36,013	33,082	1.09	3.88
1999	14,388	64,727	53,842	1.20	4.50
Totals (1958-99)	558,049	1,572,139	1,719,434	--	--
Averages (1958-98)	13,260	36,766	40,624	0.87	2.70

Table 7. Chukar field bag check summary, 1999.

Region and County	All Hunts					Complete Hunts						
	Total Parties	Total Hunters	Total Hours	Total Birds	Birds/ 100 Hr	Complete Hunts	Total Hunters	Total Hours	Total Birds	Birds/ 100 Hr	Birds/ Hunter	
Northern Region												
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	1	1	2	2	100	1	1	2	2	100	2.00	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	1	1	2	2	100	1	1	2	2	100	2.00	
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	1	1	2	2	100	1	1	2	2	100	2.00	

Table 8. Chukar hunter success trend as determined by field bag check, 1994-99.

Region and County	1994		1995		1996		1997		1998		1999	
	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter
Northern Region												
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	15	0.57	--	--	--	--
Utah	--	--	18	0.75	--	--	--	--	--	--	100	2.00
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	18	0.75	--	--	15	0.57	19	0.44	100	2.00
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	66	2.73	--	--	--	--	24	0.92	--	--
Grand	102	3.14	33	1.79	--	--	--	--	40	1.90	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	102	3.14	52	2.38	--	--	--	--	--	--	--	--
STATE TOTALS	102	3.14	46	2.08	--	--	15	0.57	28	0.96	100	2.00



Sage Grouse

Strutting ground count surveys indicated a 13 percent increase in the average male grouse attendance from 1998.

Brood surveys showed decreased production per 100 adults throughout the state. Birds observed per 100 hours increased 197 percent from 1998, and was 675 percent above average.

Total harvest was 39 percent below the long-term average. Hunter numbers increased 36 percent in 1999 and remained 33 percent below the long-term average.

Since 1959, numerous new strutting grounds have been discovered throughout Utah. However, average number of male grouse per ground has declined.

Recent DNA and physiological studies indicate that two distinct species of sage grouse exist in Utah. The smaller species is located south and east of the Colorado River and is known as the Gunnison sage grouse.

Declines in sage grouse populations are attributed to loss and changes in sage brush habitats throughout the West. Spraying, urban and industrial development, burning and overgrazing by domestic livestock have altered critical sage grouse habitat.

There is much discussion about the status and future of sage grouse at the "Western States" level. Utah should place high priority on collecting as much annual biological data as possible on sage grouse populations in order to make the best management decisions possible.

Strutting Ground Counts

The status of the sage grouse breeding population for 1999, as indicated by strutting ground counts, is shown in Table 1 and Figure 1 of this section. Results of this survey for 1999 compared to 1998 and the 1959-98 average follow:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Number of grounds counted	158	+15	+69
Total male grouse counted	2,847	+34	+74
Average male grouse per ground	18	+13	-9
Percent change from previous year (comparable grounds)	--	--	--

Access for spring 1999 strutting ground counts was good in most regions of the state. The numbers of male grouse observed increased 15 percent statewide and average number of males per ground increased 34 percent over 1998.

Brood Counts

Results of the summer inventory survey for 1999 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. Indices for 1999 are compared to 1998 and the previous 10-year (1989-98) average as follows:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Total sage grouse counted	219	-69	-62
Young per 100 adults	109	-59	-38
Mean brood size	4.04	-10	-8
Sage grouse observed per 100 hours	2738	+197	+675
Total hours effort	8	-90	-96

The effort devoted to sage grouse brood counts was 96 percent below average, and the total number of grouse counted was 62 percent above average.

Total sage grouse counted decreased 69 percent in 1999, while production of young per 100 adults decreased 59 percent. The average brood size was 8 percent below the 10-year average.

Figure 1. Statewide trends of average sage grouse males per lek, 1959-99

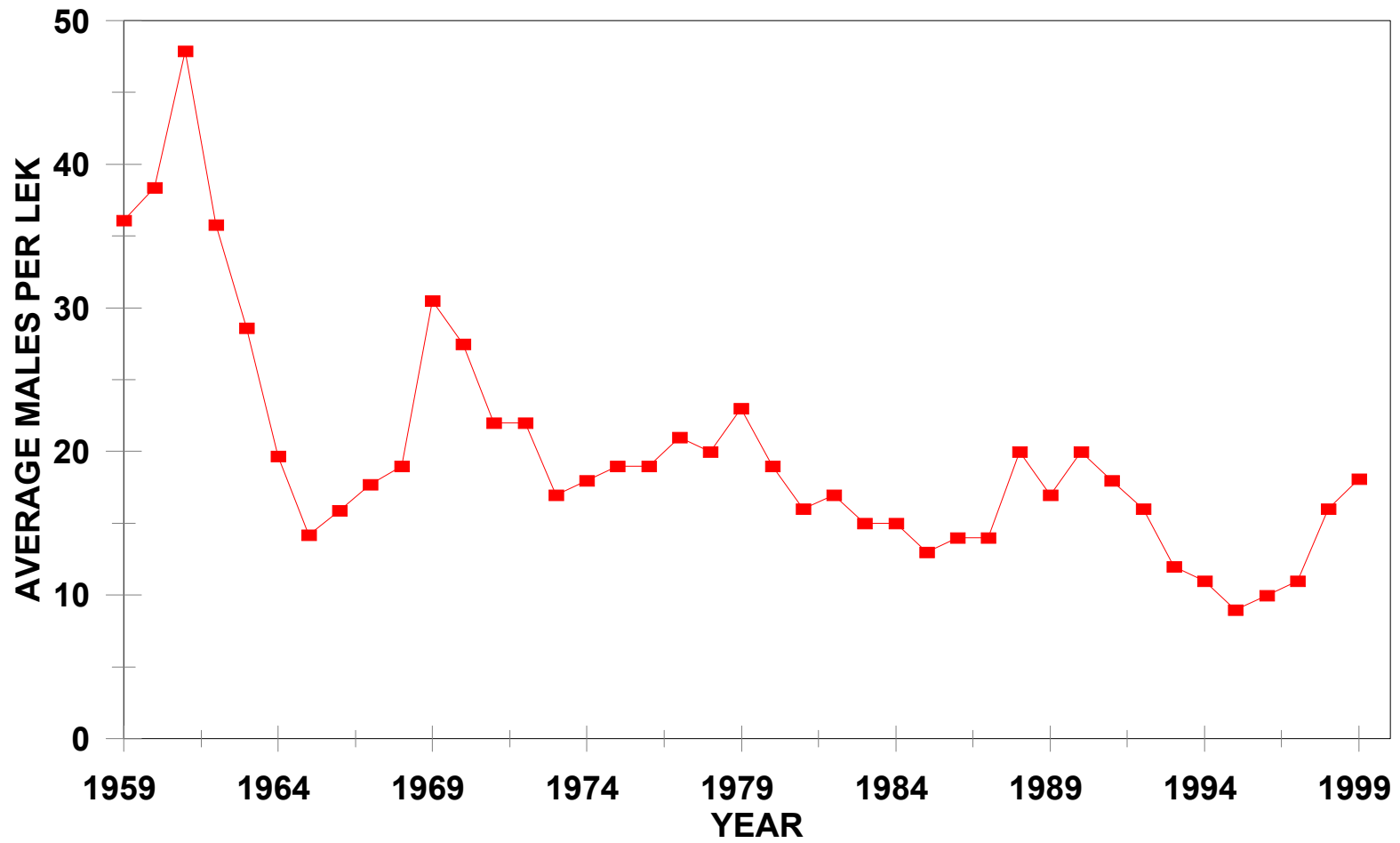


Figure 2. Statewide trends of sage grouse harvest statistics, 1963-99.

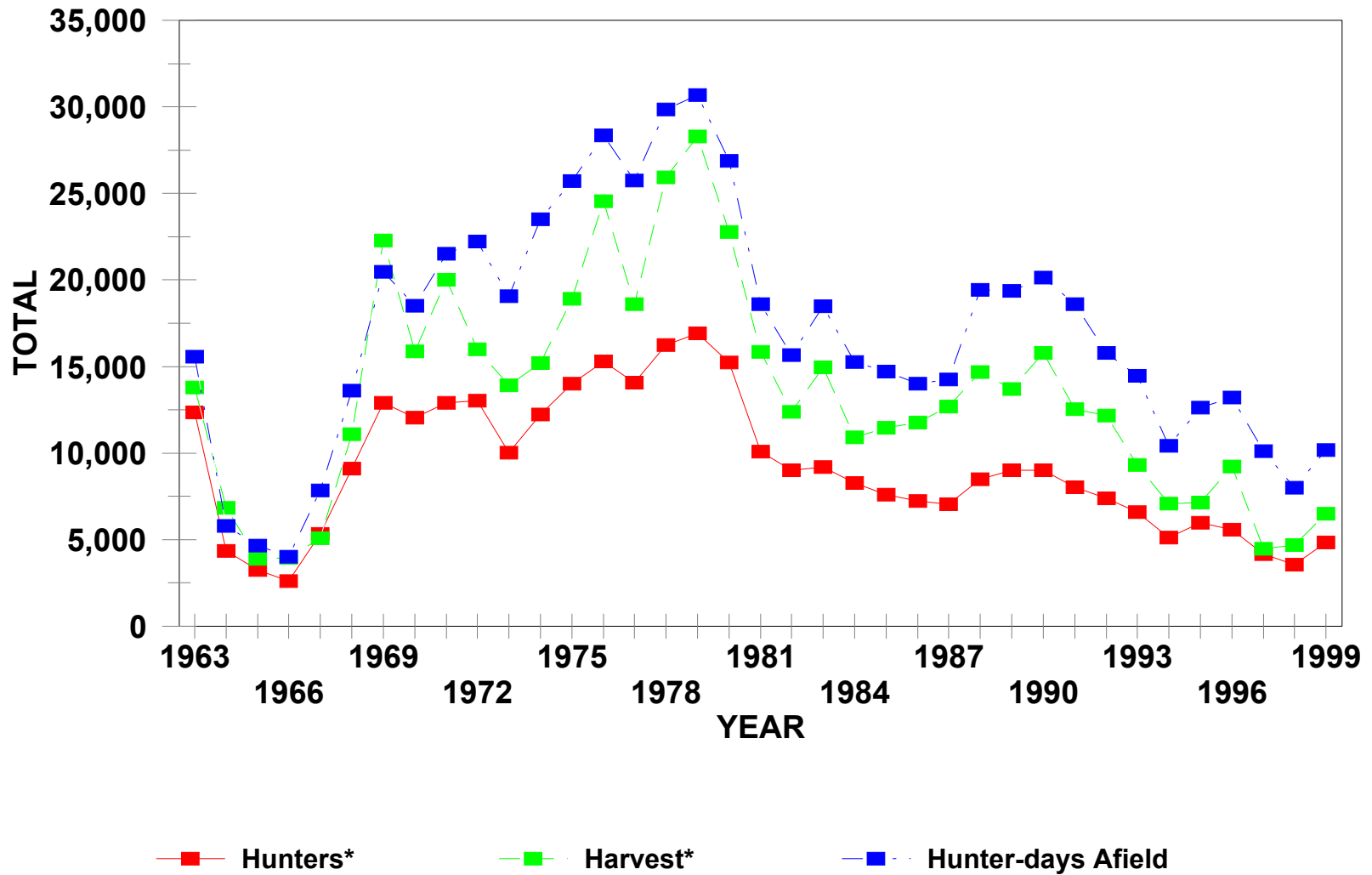
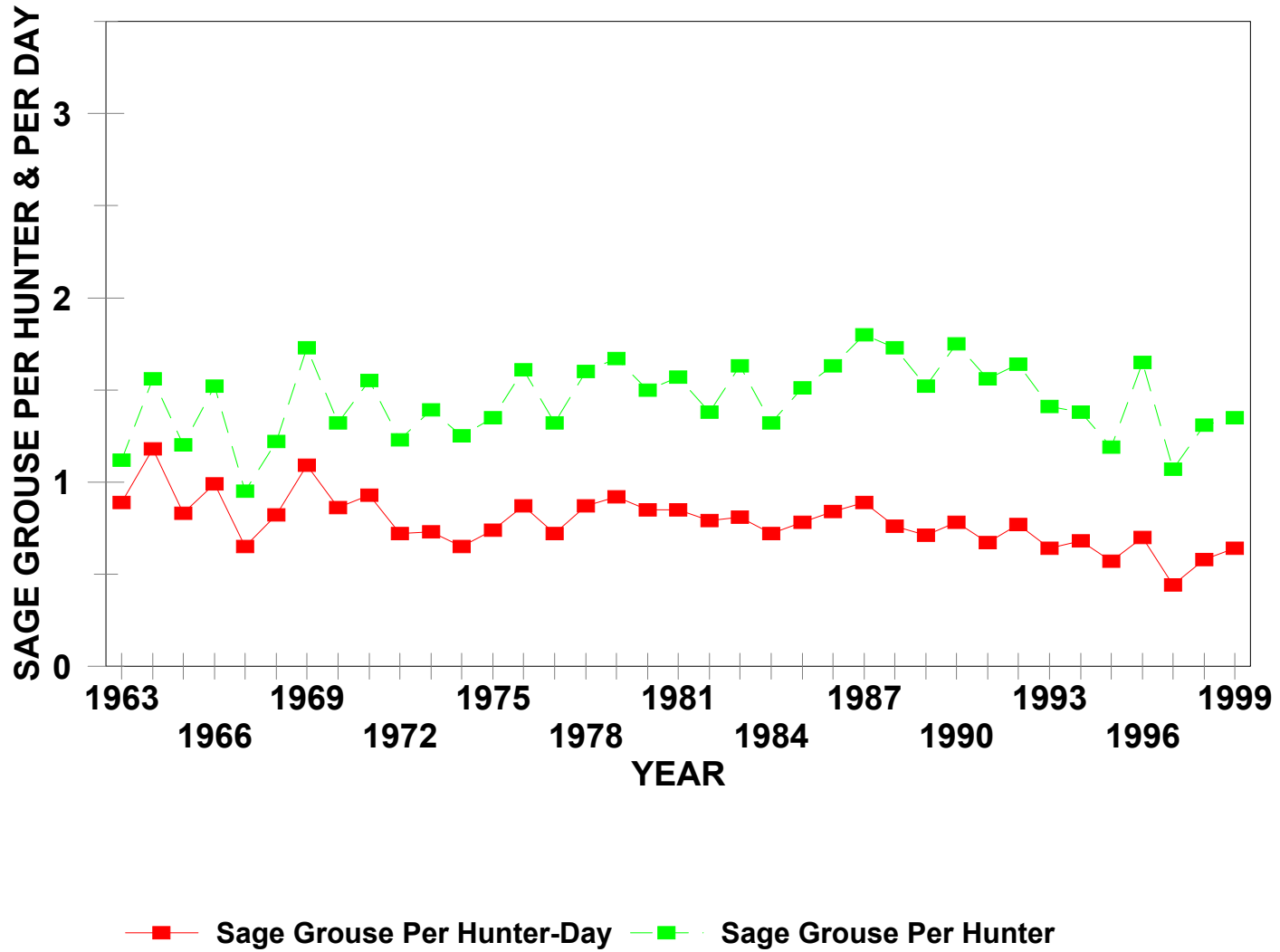


Figure 3. Statewide trends of sage grouse hunter success rates, 1963-99.



Harvest

Hunter Questionnaire

Results of the 1999 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 1999 hunting season compared to 1998 and the previous 48-year average follow:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Sage grouse hunters	4,830	+36	-33
Sage grouse harvested	6,503	+39	-39
Hunter-days afield	10,161	+27	-22
Sage grouse per hunter-day	0.64	+10	+5
Sage grouse per hunter	1.35	+3	-24

Sage grouse per hunter-day success rate increased 10 percent in 1999. Total statewide harvest increased 39 percent, and there was a 36 percent increase in total sage grouse hunters.

Long-term sage grouse harvest trends are shown in Figures 2 and 3.

Field Bag Checks

A summary of field bag check data for 1999 is shown in Table 11. Hunter success trends determined via this method are shown in Table 12. Results of the 1999 survey compared to 1998 and the 10-year (1989-98) average follow:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Total hunters checked	103	-34	-77
Total hours hunted	442	-23	-81
Sage grouse per hunter (complete hunts)	0.53	-25	-31
Sage grouse bagged per 100 hours	12	-37	-32
Average hours per hunter-day (complete hunts)	4.29	+17	-7
Hours hunted per grouse bagged (complete hunts)	8.04	-59	-26

Hunter success rates from field bag checks showed decreased success on the opening weekend of 1999. Sage grouse bagged per 100 hours decreased 25 percent. Average hours per hunter-day increased 17 percent from 1998. Average hours per grouse bagged decreased 59 percent.

Sex and Age Composition of the Harvest

A summary of the sex and age composition of harvested sage grouse in 1999 is found in Table 13 and the trend from 1995-99 in Table 14.

Following are data derived from wing surveys in 1999 compared to 1998 and the 10-year (1989-98) average:

	<u>1999</u>	<u>Percent change from 1998</u>	<u>Percent change from Average</u>
Sample size	358	+12	-45
Percent males	44	+2	+11
Percent females	56	-2	-7
Young per 100 adults	202	-41	-17
Young per 100 hens (adult)	129	-34	+1
Percent successfully nesting females			
Adults	29		
Yearlings	42		
All	23		

Analysis of wings collected at checking stations during the 1999 season indicates that statewide production (young/100 adults) was down 41 percent compared to 1998, and was 17 percent below the 10-year average.

Table 1. Summary of sage grouse strutting ground counts by region and county, 1989-99.

Region and County	Year										
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region											
Box Elder											
No. Strutting Grounds Counted	11	20	16	13	8	14	4	11	33	22	25
Total Male Grouse Counted	343	327	--	307	250	220	134	209	345	428	452
County Average (all strutting grounds)	31	23	21	24	17	16	34	19	10	19	18
% Change From Previous Year - Comparable Grounds	-3	-17	-11	8	-7	-23	-14	-24	2	--	--
Cache											
No. Strutting Grounds Counted	2	--	--	3	--	2	2	2	1	1	4
Total Male Grouse Counted	15	--	--	27	--	9	9	9	23	23	23
County Average (all strutting grounds)	8	--	--	9	--	5	5	5	23	23	6
% Change From Previous Year - Comparable Grounds	40	--	--	--	--	--	--	--	283	--	--
Morgan											
No. Strutting Grounds Counted	--	--	--	1	--	--	1	1	1	5	1
Total Male Grouse Counted	--	--	--	39	--	--	24	25	34	90	81
County Average (all strutting grounds)	--	--	--	39	--	--	24	25	34	18	81
% Change From Previous Year - Comparable Grounds	--	--	--	--	--	--	60	5	36	--	--
Rich											
No. Strutting Grounds Counted	6	19	22	14	14	29	26	23	22	16	27
Total Male Grouse Counted	281	863	710	372	314	325	273	278	339	356	559
County Average (all strutting grounds)	47	41	32	27	19	11	11	12	15	22	21
% Change From Previous Year - Comparable Grounds	5	-7	-18	-38	-51	-46	--	9	25	--	--
Summit											
No. Strutting Grounds Counted	--	--	--	3	--	1	8	--	--	--	--
Total Male Grouse Counted	--	--	--	0	--	15	--	--	--	--	--
County Average (all strutting grounds)	--	--	--	--	--	15	--	--	--	--	--
% Change From Previous Year - Comparable Grounds	--	--	--	--	--	-29	--	--	--	--	--
REGIONAL TOTALS											
No. Strutting Grounds Counted	19	39	38	34	22	46	41	37	57	44	57
Total Male Grouse Counted	639	1,190	710	745	564	569	440	521	741	897	1,115
Average Grouse Per Ground (all strutting grounds)	34	31	27	26	18	14	18	15	21	21	31
% Change From Previous Year - Comparable Grounds	5	--	-15	-15	-29	-33	--	--	--	--	--

Table 1 (continued)

Region and County	Year										
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Central Region											
Juab											
No. Strutting Grounds Counted	1	1	1	3	3	1	1	--	1	1	3
Total Male Grouse Counted	11	4	15	5	0	0	1	--	0	0	13
County Average (all strutting grounds)	11	4	15	2	0	0	1	--	0	0	4
% Change From Previous Year - Comparable Grounds	-21	-63	--	-100	-100	0	100	--	--	--	--
Sanpete											
No. Strutting Grounds Counted	2	2	2	--	2	--	--	--	--	--	--
Total Male Grouse Counted	0	0	0	--	0	--	--	--	--	--	--
County Average (all strutting grounds)	0	0	--	--	0	--	--	--	--	--	--
% Change From Previous Year - Comparable Grounds	0	0	--	--	0	--	--	--	--	--	--
Tooele											
No. Strutting Grounds Counted	5	5	5	4	4	4	4	3	4	4	2
Total Male Grouse Counted	77	91	82	100	11	12	12	17	36	24	80
County Average (all strutting grounds)	15	18	16	25	5	3	3	6	9	6	40
% Change From Previous Year - Comparable Grounds	-17	20	-15	32	-87	-40	0	100	6	--	--
Wasatch											
No. Strutting Grounds Counted	2	2	2	2	2	2	2	2	2	2	3
Total Male Grouse Counted	44	51	11	49	45	24	24	34	46	42	59
County Average (all strutting grounds)	22	26	6	24	37	12	12	17	23	21	20
% Change From Previous Year - Comparable Grounds	-19	18	-75	300	-9	-12	0	42	35	--	--
REGIONAL TOTALS											
No. Strutting Grounds Counted	10	10	10	9	11	7	7	5	7	7	8
Total Male Grouse Counted	132	146	108	154	56	36	37	51	82	66	152
Average Grouse Per Ground (all strutting grounds)	13	15	12	17	14	5	5	8	11	9	21
% Change From Previous Year - Comparable Grounds	-16	11	-45	77	-65	16	--	--	--	--	--

Table 1 (continued)

Region and County	Year										
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Southern Region											
Beaver											
No. Strutting Grounds Counted	5	2	--	3	1	4	7	7	4	4	6
Total Male Grouse Counted	71	33	--	68	49	57	57	79	32	22	96
County Average (all strutting grounds)	14	16	41	19	49	14	8	11	8	6	16
% Change From Previous Year - Comparable Grounds	-7	--	--	-54	47	--	-7	--	-53	--	--
Garfield											
No. Strutting Grounds Counted	8	10	--	9	6	11	11	11	12	13	14
Total Male Grouse Counted	126	244	--	211	77	145	139	89	126	254	245
County Average (all strutting grounds)	16	24	35	23	11	13	13	8	11	20	18
% Change From Previous Year - Comparable Grounds	-50	--	--	-23	-50	78	0	--	36	--	--
Iron											
No. Strutting Grounds Counted	6	3	--	2	1	3	2	3	3	5	6
Total Male Grouse Counted	127	50	--	43	41	39	26	17	34	48	98
County Average (all strutting grounds)	21	20	52	21	41	13	13	6	11	10	16
% Change From Previous Year - Comparable Grounds	14	--	--	-36	24	0	-14	--	-10	--	--
Kane											
No. Strutting Grounds Counted	2	--	--	3	2	2	3	3	3	3	3
Total Male Grouse Counted	41	--	--	30	11	1	2	0	4	18	20
County Average (all strutting grounds)	21	--	14	10	6	1	1	0	1	6	7
% Change From Previous Year - Comparable Grounds	--	--	--	-28	-61	0	0	--	--	--	--
Millard											
No. Strutting Grounds Counted	--	--	--	--	--	--	--	--	--	--	--
Total Male Grouse Counted	--	--	--	--	--	--	--	--	--	--	--
County Average (all strutting grounds)	--	--	--	--	--	--	--	--	--	--	--
% Change From Previous Year - Comparable Grounds	--	--	--	--	--	--	--	--	--	--	--
Piute											
No. Strutting Grounds Counted	--	--	--	--	--	--	--	1	1	1	1
Total Male Grouse Counted	--	--	--	--	--	--	--	29	34	33	67
County Average (all strutting grounds)	--	--	--	--	--	--	--	29	34	33	67
% Change From Previous Year - Comparable Grounds	--	--	--	--	--	--	--	--	--	--	--
Sevier											
No. Strutting Grounds Counted	--	--	1	3	--	1	1	2	1	1	1
Total Male Grouse Counted	--	--	20	22	--	11	12	34	15	15	11
County Average (all strutting grounds)	--	--	20	7	--	11	12	17	15	15	11
% Change From Previous Year - Comparable Grounds	--	--	--	--	--	1,100	9	--	--	--	--
Wayne											
No. Strutting Grounds Counted	13	10	16	12	--	8	11	9	12	14	15
Total Male Grouse Counted	268	259	367	289	--	163	206	193	272	257	499
County Average (all strutting grounds)	21	26	23	22	--	20	19	21	23	18	33
% Change From Previous Year - Comparable Grounds	--	--	--	--	--	-8	11	--	--	--	--
REGIONAL TOTALS											
No. Strutting Grounds Counted	34	25	17	32	10	29	35	36	36	41	46
Total Male Grouse Counted	633	596	387	663	178	416	442	441	517	647	1,036
Average Grouse Per Ground (all strutting grounds)	19	24	31	17	18	12	11	12	14	16	23
% Change From Previous Year - Comparable Grounds	-18	--	--	-35	-10	234	--	--	--	--	--

Table 1 (continued)

Region and County	Year										
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Northeastern Region											
Daggett											
No. Strutting Grounds Counted	7	6	--	6	3	3	5	6	6	5	3
Total Male Grouse Counted	25	42	--	17	14	11	25	32	23	25	19
County Average (all strutting grounds)	4	7	--	3	5	4	5	5	4	5	6
% Change From Previous Year - Comparable Grounds	-24	24	--	--	-7	-21	-18	28	-28	--	--
Duchesne											
No. Strutting Grounds Counted	11	15	--	16	15	9	5	5	7	8	7
Total Male Grouse Counted	76	173	--	129	87	37	40	22	32	26	46
County Average (all strutting grounds)	7	12	--	8	6	4	8	4	5	3	7
% Change From Previous Year - Comparable Grounds	167	22	--	--	-10	-51	14	-27	5	--	--
Grand											
No. Strutting Grounds Counted	--	--	--	--	--	1	--	--	--	--	--
Total Male Grouse Counted	--	--	--	--	--	0	--	--	--	--	--
County Average (all strutting grounds)	--	--	--	--	--	--	--	--	--	--	--
% Change From Previous Year - Comparable Grounds	--	--	--	--	--	--	--	--	--	--	--
Uintah											
No. Strutting Grounds Counted	20	20	--	22	22	18	29	24	21	17	23
Total Male Grouse Counted	266	321	--	287	173	208	197	268	278	358	368
County Average (all strutting grounds)	13	16	--	13	8	12	7	11	13	21	16
% Change From Previous Year - Comparable Grounds	-45	0	--	--	-34	-4	-30	32	-3	--	--
Wasatch											
No. Strutting Grounds Counted	2	--	--	--	--	2	3	1	1	1	--
Total Male Grouse Counted	22	--	--	--	--	8	9	5	5	6	--
County Average (all strutting grounds)	11	--	--	--	--	4	3	5	5	6	--
% Change From Previous Year - Comparable Grounds	0	--	--	--	--	-11	13	-44	0	--	--
REGIONAL TOTALS											
No. Strutting Grounds Counted	40	41	0	44	40	33	42	36	35	31	33
Total Male Grouse Counted	389	536	0	433	274	264	271	327	338	415	433
Average Grouse Per Ground (all strutting grounds)	10	13	--	5	6	6	7	9	10	13	13
% Change From Previous Year - Comparable Grounds	-37	9	--	--	-27	-18	-22	22	--	--	--

Table 1 (continued)

Region and County	Year										
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Southeastern Region											
Carbon											
No. Strutting Grounds Counted	10	9	8	8	3	7	--	8	4	10	8
Total Male Grouse Counted	181	146	103	40	14	3	--	26	46	67	65
County Average (all strutting grounds)	18	16	13	5	5	0	--	3	12	7	8
% Change From Previous Year - Comparable Grounds	-8	-38	-11	-61	-46	-79	--	--	--	--	--
Emery											
No. Strutting Grounds Counted	2	2	2	2	3	2	2	2	2	--	--
Total Male Grouse Counted	28	5	7	7	3	5	0	0	0	--	--
County Average (all strutting grounds)	14	3	4	4	1	3	0	0	0	--	--
% Change From Previous Year - Comparable Grounds	167	-82	40	0	-57	67	-250	0	--	--	--
San Juan											
No. Strutting Grounds Counted	4	4	4	4	4	4	4	4	4	4	6
Total Male Grouse Counted	39	41	32	40	44	41	40	29	26	32	46
County Average (all strutting grounds)	10	10	8	10	11	10	10	7	7	8	8
% Change From Previous Year - Comparable Grounds	22	5	-22	25	10	-7	-2	-27	--	--	--
REGIONAL TOTALS											
No. Strutting Grounds Counted	16	15	14	14	10	13	6	14	10	14	14
Total Male Grouse Counted	248	192	142	87	61	49	40	55	72	99	111
Average Grouse Per Ground (all strutting grounds)	16	13	10	6	6	4	7	4	7	7	8
% Change From Previous Year - Comparable Grounds	3	-35	2	-12	-31	-6	--	--	--	--	--
STATE TOTALS											
No. Strutting Grounds Counted	119	130	79	133	93	128	131	128	145	137	158
Total Male Grouse Counted	2,041	2,660	1,347	2,082	1,133	1,334	1,230	1,395	1,750	2,124	2,847
Average Grouse Per Ground (all strutting grounds)	17	20	17	16	12	10	9	11	12	16	18
% Change From Previous Year - Comparable Grounds	14	-2	-11	3	-32	39	--	--	--	--	--

Table 2. Sage grouse summer inventory, 1999.

Region and County	Distinct Broods			Mean Brood	Mixed Young & Adults		Adults w/o Young	Total Adults	Total Young	Total Grouse	Young/100 Adults	Vehicle Miles	Hours of Effort			Birds/100 Hr	
	#	Adults	Young		Adults	Young							Vehicle	Horse	Walk		Total
Northern Region																	
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Central Region																	
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Southern Region																	
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Wayne	27	27	109	4.04	7	5	71	105	114	219	109	0	0	8	--	8	2,738
REGIONAL TOTALS	27	27	109	4.04	7	5	71	105	114	219	109	0	0	8	--	8	2,738
Northeastern Region																	
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Uintah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Southeastern Region																	
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
STATE TOTALS	27	27	109	4.04	7	5	71	105	114	219	109	0	0	8	0	8	2,738

Table 3. Trend of sage grouse young per 100 adults, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	167	267	161	143	92	94	--	48	177	--	--	
Cache	--	500	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	117	--	--	--	--	--	--	--	--	--	--	
Rich	--	100	67	125	217	433	41	222	129	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	156	235	93	132	133	145	40	175	115	--	--	136
Central Region												
Juab	250	196	--	450	450	--	--	--	--	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	--	--	--	--	--	--	--	--	--	--	--	
Tooele	194	110	287	300	300	156	--	--	--	--	--	
Utah	--	--	1,200	--	--	--	--	--	--	--	--	
Wasatch	--	667	--	129	350	--	--	--	--	--	--	
REGIONAL TOTALS	177	166	344	148	357	156	--	--	--	--	--	225
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	40	91	129	--	--	--	--	--	--	--	--	
Iron	155	264	100	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	525	--	500	--	--	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	168	478	43	--	--	--	--	109	315	109	
REGIONAL TOTALS	135	154	128	40	--	--	--	129	109	315	109	144
Northeastern Region												
Daggett	433	533	650	190	--	600	263	244	200	500	--	
Duchesne	217	600	160	--	260	--	--	--	--	--	--	
Uintah	148	352	114	278	500	263	192	300	325	228	--	
REGIONAL TOTALS	155	374	161	246	380	532	418	332	444	236	--	328
Southeastern Region												
Carbon	56	33	200	33	200	--	--	--	--	91	--	
Emery	--	--	--	--	--	--	--	--	--	--	--	
Grand	--	--	--	31	--	50	--	--	--	--	--	
San Juan	50	50	200	50	--	--	--	--	--	--	--	
REGIONAL TOTALS	55	88	160	34	200	50	--	--	--	91	--	97
STATE TOTALS	147	183	122	95	209	244	122	196	165	264	109	175

Table 4. Trend of average brood size for sage grouse, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	3.80	4.25	3.71	4.17	3.67	5.00	--	6.00	2.67	--	--	
Cache	--	5.00	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	7.00	--	--	--	--	--	--	--	--	--	--	
Rich	--	2.00	3.00	4.54	2.40	4.33	5.33	5.19	3.96	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	4.30	3.67	3.36	4.36	3.09	4.50	5.33	5.26	3.64	--	--	4.17
Central Region												
Juab	4.00	4.75	--	--	--	--	--	--	--	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	--	--	--	--	--	--	--	--	--	--	--	
Tooele	3.00	3.13	3.83	3.00	3.00	4.00	--	--	--	--	--	
Utah	--	--	12.00	--	--	--	--	--	--	--	--	
Wasatch	--	6.67	--	5.50	7.00	--	--	--	--	--	--	
REGIONAL TOTALS	3.40	4.27	5.00	4.67	4.00	4.00	--	--	--	--	--	4.22
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	4.00	6.00	--	--	--	--	--	--	--	--	
Iron	4.66	6.00	5.00	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	4.30	5.00	3.82	--	--	--	--	4.64	4.32	4.04	
REGIONAL TOTALS	4.66	4.82	5.60	3.82	--	--	--	4.80	4.64	4.32	4.04	4.66
Northeastern Region												
Daggett	4.30	6.00	2.00	6.00	--	6.00	4.20	3.67	2.00	5.00	--	
Duchesne	2.17	6.00	4.00	--	2.00	--	--	--	--	--	--	
Uintah	5.15	5.60	2.00	4.75	5.00	5.25	4.17	5.86	5.48	4.57	--	
REGIONAL TOTALS	4.58	5.63	2.57	4.89	4.50	5.32	4.18	5.20	5.35	4.61	--	4.68
Southeastern Region												
Carbon	4.50	--	6.00	2.67	4.00	--	--	--	--	5.00	--	
Emery	--	--	--	--	--	--	--	--	--	--	--	
Grand	--	--	--	4.00	--	2.00	--	--	--	--	--	
San Juan	2.00	--	2.00	2.00	--	--	--	--	--	--	--	
REGIONAL TOTALS	3.67	--	4.00	2.80	4.00	2.00	--	--	--	5.00	--	3.58
STATE TOTALS	4.37	4.71	3.70	4.21	3.68	4.86	4.43	5.19	4.43	4.51	4.04	4.41

Table 5. Trend of sage grouse observed per 100 hours, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	431	303	102	146	118	413	4	--	300	--	--	
Cache	--	126	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	100	--	--	--	--	--	--	--	--	--	--	
Rich	--	41	304	261	89	--	73	474	1,529	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	64	78	155	197	103	613	57	554	753	--	--	286
Central Region												
Juab	311	323	--	367	367	--	--	--	--	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	--	--	--	--	--	--	--	--	--	--	--	
Tooele	252	150	414	100	133	263	--	--	--	--	--	
Utah	--	--	1,300	--	--	--	--	--	--	--	--	
Wasatch	19	209	--	254	45	--	--	--	--	--	--	
REGIONAL TOTALS	154	200	338	248	100	263	--	--	--	--	--	217
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	207	661	320	--	--	--	--	--	--	--	--	
Iron	1,000	589	400	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	150	829	--	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	900	511	411	--	--	--	--	252	--	2,738	
REGIONAL TOTALS	705	781	314	402	--	--	--	234	252	--	2,738	448
Northeastern Region												
Daggett	168	585	1,000	580	--	1,400	829	326	86	900	--	
Duchesne	123	350	81	--	900	--	--	--	--	--	--	
Uintah	1,191	566	1,500	523	3,000	636	388	224	316	407	--	
REGIONAL TOTALS	741	533	356	539	1,600	1,463	429	226	289	419	--	659
Southeastern Region												
Carbon	125	685	90	377	377	--	--	--	--	--	--	
Emery	--	--	--	--	--	--	--	--	--	--	--	
Grand	--	--	--	567	--	240	--	--	--	--	--	
San Juan	150	120	100	300	--	--	--	--	--	--	--	
REGIONAL TOTALS	129	386	100	239	26	80	--	--	--	--	--	160
STATE TOTALS	288	279	273	272	122	572	102	356	347	921	2,738	353

Table 6. Summary of sage grouse hunter success and distribution of harvest and hunter pressure by region and county, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	46	1,828	1,035	0.57	18.00	15.92
CACHE	7	483	138	0.29	4.75	2.12
DAVIS	2	86	51	0.60	0.85	0.80
MORGAN	12	707	276	0.39	6.96	4.24
RICH	25	741	310	0.42	7.30	4.78
SUMMIT	8	345	51	0.15	3.40	0.80
WEBER	6	379	86	0.23	3.74	1.33
REGIONAL TOTALS	106	4,571	1,949	0.43	44.99	29.98
CENTRAL REGION						
JUAB	5	207	500	2.42	2.04	7.69
SALT LAKE	3	120	172	1.43	1.19	2.65
SANPETE	9	379	241	0.64	3.74	3.71
TOOELE	4	86	17	0.20	0.85	0.27
UTAH	21	759	707	0.93	7.47	10.88
WASATCH	12	431	241	0.56	4.24	3.71
REGIONAL TOTALS	54	1,983	1,880	0.95	19.52	28.92
SOUTHERN REGION						
BEAVER	3	86	0	0.00	0.85	0.00
GARFIELD	2	86	0	0.00	0.85	0.00
IRON	2	207	189	0.92	2.04	2.92
KANE	0	0	0	0.00	0.00	0.00
MILLARD	3	120	362	3.00	1.19	5.57
PIUTE	5	155	86	0.56	1.53	1.33
SEVIER	15	690	638	0.93	6.79	9.82
WASHINGTON	0	0	0	0.00	0.00	0.00
WAYNE	17	621	293	0.47	6.11	4.51
REGIONAL TOTALS	47	1,966	1,569	0.80	19.36	24.14
NORTHEASTERN REGION						
DAGGETT	0	0	0	0.00	0.00	0.00
DUCHESNE	14	414	362	0.88	4.07	5.57
UINTAH	32	1,000	603	0.60	9.85	9.29
REGIONAL TOTALS	46	1,414	966	0.68	13.92	14.86
SOUTHEASTERN REGION						
CARBON	4	103	86	0.83	1.02	1.33
EMERY	1	69	17	0.25	0.68	0.27
GRAND	1	34	0	0.00	0.34	0.00
SAN JUAN	1	17	34	2.00	0.17	0.53
REGIONAL TOTALS	7	224	138	0.62	2.21	2.12
UNKNOWN	38	0	0	0.00	0.00	0.00
STATE TOTALS	298	10,161	6,503	0.64	100.00	100.00

* Total hunter-trips from questionnaire returns.

Table 7. Summary of sage grouse bagged per hunter-day by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	0.96	0.79	0.79	0.40	0.57	0.82	0.80	0.57
Cache	0.55*	0.21*	0.50*	0.27*	0.57*	0.18*	0.32*	0.29*
Davis	0.60*	0.08*	0.00*	0.59*	2.33*	1.00*	0.75*	0.60*
Morgan	0.71*	0.00*	0.19*	0.00*	1.92*	0.33*	0.42*	0.39*
Rich	0.82	0.79	0.53	0.47	0.56	0.25	0.42	0.42
Summit	1.38*	0.56*	0.44*	0.13*	0.80*	0.12*	0.50*	0.15*
Weber	0.55*	0.50*	0.08*	0.15*	1.28*	0.67*	0.26*	0.23*
REGIONAL TOTALS	0.80	0.59	0.54	0.37	0.84	0.45	0.52	0.43
Central Region								
Juab	0.17*	0.22*	2.71*	1.89*	4.00*	0.00*	1.00*	2.42*
Salt Lake	0.00*	0.20*	0.00*	0.00*	0.00*	0.04*	0.00*	1.43*
Sanpete	0.22*	0.33*	0.45*	0.20*	0.69*	0.60*	0.50*	0.64*
Tooele	0.65*	1.07*	1.83*	1.00*	0.50*	0.50*	0.00*	0.20*
Utah	0.96*	0.27*	0.56*	0.73*	0.77*	0.47*	1.33*	0.93*
Wasatch	0.70*	0.46*	0.80*	0.57*	0.64*	0.21*	0.80*	0.56*
REGIONAL TOTALS	0.68	0.59	1.16	0.69	0.84	0.29	1.00	0.95
Southern Region								
Beaver	0.83	1.00	0.47	1.13	0.00	0.00	0.06*	0.00*
Garfield	0.96	0.90	1.11	0.36	0.50	0.00	0.00*	0.00*
Iron	0.64	0.53	1.29	0.30	0.00	0.00	0.00*	0.92*
Kane	0.71	0.00	1.25	1.00*	1.00*	0.00*	0.00*	0.00*
Millard	0.80*	4.00*	0.67*	1.58*	1.25*	2.00*	2.67*	3.00*
Piute	1.71	1.13	0.78	0.14	0.50	0.00	0.50*	0.56*
Sevier	0.49	0.36	0.54	0.04	0.93	0.76	0.80*	0.93*
Washington	1.00*	0.00*	0.00*	0.00*	2.00*	0.00*	0.00*	0.00*
Wayne	0.92	0.66	0.79	0.76	0.46	0.48	0.77	0.47
REGIONAL TOTALS	0.79	0.70	0.81	0.56	0.56	0.58	0.55	0.80
Northeastern Region								
Daggett	0.60	0.67	0.25	0.94	0.43	0.67	0.25	0.00
Duchesne	0.36	1.29	0.00	0.75	0.24	0.23	0.56	0.88
Uintah	0.87	0.73	0.83	0.85	0.62	0.56	0.66	0.60
REGIONAL TOTALS	0.76	0.79	0.72	0.86	0.52	0.47	0.62	0.68
Southeastern Region								
Carbon	0.64	0.36	0.00*	1.71*	0.50*	0.00*	1.33*	0.83*
Emery	0.60*	1.00*	0.80*	0.00*	1.50*	1.25*	0.20*	0.25*
Grand	1.33	4.00	1.00*	0.60*	0.03*	0.57	0.00	0.00
San Juan	0.00*	0.00*	0.00*	0.00*	1.00*	0.33*	0.00*	2.00*
REGIONAL TOTALS	0.77	0.71	0.50	0.56	0.25	0.71	0.45	0.62
Unknown counties	0.00	0.47	0.00	1.00	0.00	0.00	0.00	0.00
STATE TOTALS	0.77	0.64	0.68	0.57	0.70	0.44	0.58	0.64

*Closed season.

() Percent of bag per hunter-day in closed areas.

Table 8. Percentage distribution of sage grouse harvest by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	15.50	11.22	20.10	9.81	11.59	25.93	25.37	15.92
Cache	5.12*	2.45*	3.23*	3.00*	7.31*	2.78*	6.47*	2.12*
Davis	1.75*	0.20*	0.00*	3.54*	1.76*	0.46*	1.49*	0.80*
Morgan	1.75*	0.00*	0.74*	0.00*	11.59*	0.93*	2.49*	4.24*
Rich	15.79	18.57	13.15	8.99	7.31	5.09	6.97	4.78
Summit	1.61*	4.08*	1.99*	0.27*	2.02*	2.78*	1.99*	0.80*
Weber	1.75*	2.24*	0.50*	0.82*	15.11*	13.43*	2.49*	1.33*
REGIONAL TOTAL	43.27	38.78	39.70	26.43	56.68	26.43	47.27	29.98
Central Region								
Juab	0.15*	0.41*	4.71*	4.63*	3.02*	0.00*	1.99*	7.69*
Salt Lake	0.00*	0.20*	0.00*	0.00*	0.00*	0.46*	0.00*	2.65*
Sanpete	0.73*	0.61*	1.24*	1.36*	2.27*	1.39*	1.49*	3.71*
Tooele	1.90*	5.92*	5.46*	2.73*	1.01*	2.78*	0.00*	0.27*
Utah	7.75*	0.61*	2.23*	5.18*	6.80*	4.17*	7.96*	10.88*
Wasatch	1.02*	1.22*	0.99*	2.18*	1.76*	2.32*	1.99*	3.71*
REGIONAL TOTALS	11.55	8.98	14.64	16.08	14.86	11.11	13.43	28.92
Southern Region								
Beaver	2.19	2.24	2.23	4.63	0.00	0.00	0.50*	0.00*
Garfield	3.51	3.88	5.21	2.18	1.26	0.00	0.00*	0.00*
Iron	3.65	4.29	5.46	2.18	0.00	0.00	0.00*	2.92*
Kane	0.73	0.00	1.24	0.55*	0.50*	0.00*	0.00*	0.00*
Millard	0.58*	4.08*	1.99*	5.18*	1.26*	0.93*	3.98*	5.57*
Piute	1.75	1.84	3.47	0.27	0.50	0.00	0.50*	1.33*
Sevier	2.92	4.08	3.23	0.27	3.35	6.02	1.99*	9.82*
Washington	0.29*	0.00*	0.00*	0.00*	1.51*	0.00*	0.00*	0.00*
Wayne	7.02	6.33	4.71	6.00	4.03	4.63	4.98	4.51
REGIONAL TOTALS	22.66	26.74	27.54	21.26	12.60	11.58	11.94	24.14
Northeastern Region								
Daggett	1.32	1.63	0.50	4.36	0.76	0.93	0.50	0.00
Duchesne	1.46	3.67	0.00	1.64	1.26	2.78	4.98	5.57
Uintah	16.37	13.67	14.64	22.35	11.34	17.60	19.40	9.29
REGIONAL TOTALS	19.15	18.98	15.14	28.34	13.35	21.30	24.88	14.86
Southeastern Region								
Carbon	1.32	0.82	0.00*	3.27*	0.50*	0.00*	1.99*	1.33*
Emery	0.88*	0.41*	1.99*	0.00*	0.76*	2.32*	0.50*	0.27*
Grand	1.17	0.82	0.99*	1.64*	0.25*	1.85*	0.00	0.00
San Juan	0.00*	0.00*	0.00*	0.00*	1.01*	1.46*	0.00*	0.53*
REGIONAL TOTALS	3.36	2.04	2.98	4.91	2.52	4.63	2.49	2.12
Unknown counties	0.00	4.49	0.00	3.00	0.00	0.00	0.00	0.00
Closed areas	(25.28)	(22.43)	(26.07)	(34.35)	(58.44)	(38.06)	(37.82)	(59.97)
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*Closed season

()Percent of total harvest in closed areas.

Table 9. Percentage distribution of sage grouse hunting pressure by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	12.39	9.19	17.40	14.02	14.24	13.99	18.60	18.00
Cache	7.21*	7.35*	4.39*	6.32*	8.96*	7.00*	11.92*	4.75*
Davis	2.25*	1.71*	1.01*	3.39*	0.53*	0.21*	1.16*	0.85*
Morgan	1.91*	1.18*	2.70*	1.23*	4.22*	1.23*	3.49*	6.96*
Rich	14.75	15.09	16.89	10.79	9.14	9.05	9.59	7.30
Summit	0.90*	4.72*	3.04*	1.23*	1.76*	10.29*	2.33*	3.40*
Weber	2.48*	2.89*	4.39*	3.08*	8.26*	8.85*	5.52*	3.74*
REGIONAL TOTALS	41.89	42.13	49.83	40.06	47.10	50.62	52.62	44.99
Central Region								
Juab	0.68*	1.18*	1.18*	1.39*	0.53*	0.00*	1.16*	2.04*
Salt Lake	0.34*	0.66*	0.00*	0.15*	0.00*	4.73*	0.00*	1.19*
Sanpete	2.59*	1.18*	1.86*	3.85*	2.28*	1.03*	1.74*	3.74*
Tooele	2.25*	3.54*	2.03*	1.54*	1.41*	2.47*	0.00*	0.85*
Utah	6.19*	1.44*	2.70*	4.01*	6.15*	3.91*	3.49*	7.47*
Wasatch	1.13*	1.71*	0.84*	2.16*	1.93*	4.94*	1.45*	4.24*
REGIONAL TOTALS	13.18	9.71	8.62	13.10	12.30	17.08	7.85	19.52
Southern Region								
Beaver	2.03	1.44	3.21	2.31	0.53	0.41	4.94*	0.85*
Garfield	2.82	2.76	3.21	3.39	1.76	0.21	0.87*	0.85*
Iron	4.39	5.25	2.87	4.16	2.46	0.21	0.29*	2.04*
Kane	0.79	0.00	0.68	0.31*	0.35*	0.00*	0.00*	0.00*
Millard	0.56*	0.66*	2.03*	1.85*	0.70*	0.21*	0.87*	1.19*
Piute	0.79	1.05	3.04	1.08	0.70	0.00	0.58*	1.53*
Sevier	4.62	7.35	4.05	4.01	2.64	3.50	1.45*	6.79*
Washington	0.23*	0.00*	0.00*	0.00*	0.53*	0.00*	0.00*	0.00*
Wayne	5.86	6.17	4.05	4.47	6.15	4.32	3.78	6.11
REGIONAL TOTALS	22.07	24.67	23.14	21.57	15.82	8.85	12.79	19.36
Northeastern Region								
Daggett	1.69	1.57	1.35	2.62	1.23	0.62	1.16	0.00
Duchesne	3.15	1.84	1.01	1.23	3.69	5.35	5.23	4.07
Uintah	14.53	12.07	1.99	14.79	12.83	13.99	17.15	9.85
REGIONAL TOTALS	14.53	12.07	1.99	14.79	12.83	19.96	23.55	13.92
Southeastern Region								
Carbon	1.58	1.44	1.69	1.08*	0.70*	0.00*	0.87*	1.02*
Emery	1.13*	0.26*	1.69*	0.31*	0.35*	0.82*	1.45*	0.68*
Grand	0.68	0.13	0.68	1.54*	5.27*	1.44*	0.87	0.34
San Juan	0.00*	0.00*	0.00*	2.00*	0.70*	0.62*	0.00*	0.17*
REGIONAL TOTALS	3.38	1.84	4.05	4.93	7.03	2.88	3.20	2.21
Unknown counties	0.11	6.17	0.00	1.69	0.00	0.62	0.00	0.00
Closed areas	(29.85)	(28.48)	(25.16)	(35.44)	(44.63)	(47.75)	(43.58)	(54.35)
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*Closed season

()Percent of total pressure in closed areas.

Table 10. Statewide summary of sage grouse harvest statistics, 1951-99.

Year	Total Hunters*	Total Harvest*	Hunter-days Afield	Sage Grouse Per Hunter-Day	Sage Grouse Per Hunter
1951	840	2,458	--	--	2.93
1952	678	2,230	--	--	3.29
1953	895	2,581	--	--	2.88
1954	802	2,510	--	--	3.13
1955	579	1,742	--	--	3.01
1956	495	1,375	--	--	2.97
1957	470	1,303	--	--	2.77
1958	567	1,797	--	--	3.17
1959	699	1,875	--	--	2.68
1960	861	2,246	--	--	2.61
1961**	1,078	1,918	--	--	1.78
1962***	2,382	5,352	5,097	1.05	1.89
1963	12,366	13,793	15,564	0.89	1.12
1964	4,362	6,827	5,807	1.18	1.56
1965	3,243	3,881	4,673	0.83	1.20
1966	2,612	3,962	4,006	0.99	1.52
1967	5,336	5,089	7,860	0.65	0.95
1968	9,115	11,109	13,601	0.82	1.22
1969	12,894	22,282	20,466	1.09	1.73
1970	12,036	15,877	18,506	0.86	1.32
1971	12,893	20,013	21,509	0.93	1.55
1972	13,040	15,983	22,232	0.72	1.23
1973	10,017	13,926	19,049	0.73	1.39
1974	12,214	15,215	23,516	0.65	1.25
1975	13,996	18,916	25,720	0.74	1.35
1976	15,283	24,541	28,342	0.87	1.61
1977	14,078	18,615	25,759	0.72	1.32
1978	16,231	25,938	29,861	0.87	1.60
1979	16,927	28,280	30,682	0.92	1.67
1980	15,219	22,770	26,893	0.85	1.50
1981	10,083	15,857	18,617	0.85	1.57
1982	8,997	12,383	15,663	0.79	1.38
1983	9,201	14,949	18,467	0.81	1.63
1984	8,283	10,921	15,266	0.72	1.32
1985	7,586	11,466	14,702	0.78	1.51
1986	7,233	11,766	13,992	0.84	1.63
1987	7,060	12,673	14,242	0.89	1.80
1988	8,499	14,692	19,418	0.76	1.73
1989	9,002	13,710	19,373	0.71	1.52
1990	9,014	15,784	20,147	0.78	1.75
1991	8,018	12,542	18,596	0.67	1.56
1992	7,393	12,156	15,781	0.77	1.64
1993	6,594	9,311	14,480	0.64	1.41
1994	5,133	7,084	10,406	0.68	1.38
1995	5,987	7,133	12,615	0.57	1.19
1996	5,574	9,220	13,215	0.70	1.65
1997	4,178	4,489	10,101	0.44	1.07
1998	3,559	4,676	8,003	0.58	1.31
1999	4,830	6,503	10,161	0.64	1.35
Totals					
(1951-99)	348,432	521,719	632,388	--	--
Average					
(1951-98)	7,158	10,734	12,963	0.61	1.78

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

** Estimated.

*** Totals and indices based on indiscrete data.

Table 11. Sage grouse field bag check summary, 1999.

Region and County	All Hunts					Complete Hunts					
	Total Parties	Total Hunters	Total Hours	Total Birds	Birds/100 Hr	Complete Hunts	Total Hunters	Total Hours	Total Birds	Birds/100 Hr	Birds/Hunter
Northern Region											
Box Elder	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Central Region											
Juab	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Southern Region											
Beaver	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	103	442	55	12	--	103	442	55	12	0.53
REGIONAL TOTALS	--	103	442	55	12	--	103	442	55	12	0.53
Northeastern Region											
Daggett	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region											
Carbon	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	0	103	442	55	12	0	103	442	55	12	0.53

Table 12. Sage grouse hunter success trend as determined by field bag check, 1994-99.

Region and County	1994		1995		1996		1997		1998		1999	
	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter
Northern Region												
Box Elder	21	0.98	23	0.58	14	0.63	9	0.34	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	8	0.51	17	0.33	14	0.48	6	0.17	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	15	0.80	21	0.48	14	0.53	8	0.27	--	--	--	--
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	7	0.30	6	0.42	11	0.49	8	0.43	19	0.71	12	0.53
REGIONAL TOTALS	7	0.30	6	0.42	11	0.49	8	0.43	19	0.71	12	0.53
Northeastern Region												
Daggett	--	--	0	0.00	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	23	0.78	27	0.94	--	--	--	--	--	--	--	--
REGIONAL TOTALS	23	0.78	16	0.50	--	--	--	--	--	--	--	--
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	14	0.70	15	0.47	13	0.53	8	0.32	19	0.71	12	0.53

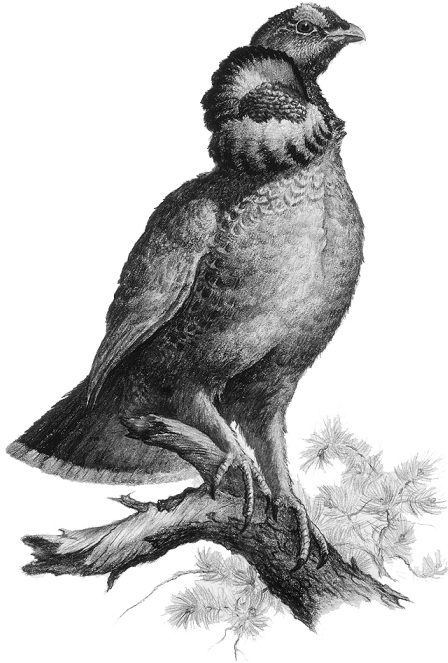
Table 13. Sex and age composition of harvested sage grouse, 1999.

Region and County	Adults			Yearlings			Immatures			Sample Size	Young/ 100 Hens	Young/ 100 Adults
	M	F	Total	M	F	Total	M	F	Total			
Northern Region												
Box Elder	5	9	14	0	0	0	7	16	23	37	256	164
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	20	16	36	0	0	0	40	34	74	110	463	206
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	25	25	50	0	0	0	47	50	97	147	388	194
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	13	16	29	9	22	31	34	41	75	135	197	125
REGIONAL TOTALS	13	16	29	9	22	31	34	41	75	135	197	125
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	6	12	18	3	25	28	20	10	30	76	81	65
REGIONAL TOTALS	6	12	18	3	25	28	20	10	30	76	81	65
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	44	53	97	12	47	59	101	101	202	358	202	129

Table 14. Sex and age composition of harvested sage grouse from 1995-99.

Region and County	1995						1996						1997						1998						1999					
	Sex Ratio %			Young/	Young/	Sex Ratio %			Young/	Young/	Sex Ratio %			Young/	Young/	Sex Ratio %			Young/	Young/	Sex Ratio %			Young/	Young/					
	n	M	F	100H	100A	n	M	F	100H	100A	n	M	F	100H	100A	n	M	F	100H	100A	n	M	F	100H	100A					
Northern Region																														
Box Elder	62	52	48	167	68	49	35	65	156	133	30	47	53	1,300	650	74	34	66	555	469	37	32	68	256	164					
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Rich	310	38	62	235	163	75	39	61	235	226	38	32	68	235	217	62	45	55	235	107	110	55	45	463	206					
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
REGIONAL TOTALS	372	40	60	215	140	124	37	63	216	182	68	38	62	520	325	136	39	61	310	216	147	49	51	388	194					
Central Region																														
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Southern Region																														
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Kane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Washington	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Wayne	101	50	50	141	80	109	38	62	233	179	100	40	60	370	285	184	46	54	302	223	135	41	59	197	125					
REGIONAL TOTALS	101	50	50	141	80	109	38	62	233	179	100	40	60	370	285	184	46	54	302	223	135	41	59	197	125					
Northeastern Region																														
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Uintah	72	50	50	126	89	--	--	--	--	--	--	--	--	--	107	44	56	110	73	76	38	62	81	65						
REGIONAL TOTALS	72	50	50	126	89	--	--	--	--	--	--	--	--	--	107	44	56	110	73	76	38	62	81	65						
Southeastern Region																														
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
STATE TOTALS	545	43	57	185	119	233	37	63	224	181	168	39	61	420	300	427	43	57	235	164	358	44	56	70	42					

Forest Grouse



Blue Grouse

Forest grouse brood count data is only collected opportunistically. Based on small sample sizes, young per 100 adults for both ruffed and blue grouse increased over 1998.

Total harvest increased 124 percent from 1998. Total hunters and days afield also increased.

Based on analysis of hunter harvested grouse wings, ruffed grouse production was up slightly from 1998 and blue grouse production decreased. Forty-six percent of blue grouse harvested were males, while 54 percent were females.

Ruffed Grouse



Brood Counts

Ruffed Grouse

Results of the annual random brood survey for 1999 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 1999 compared to 1998 and the previous 10-year (1989-1998) average follow:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Total ruffed grouse observed	7	+100	--
Young per 100 adults	600	+100	--
Mean brood size	6.00	+100	--
Ruffed grouse observed per 100 hours	--	--	--
Total hours effort	--	--	--

No specific effort was expended to collect ruffed grouse brood count data in 1999. This data is collected opportunistically.

Blue Grouse

Results of the annual random brood survey for 1999 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 1999 compared to 1998 and the 10-year (1989-1998) average follow:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Total blue grouse observed	132	-25	-14
Young per 100 adults	277	+19	+9
Mean brood size	3.81	+9	+3
Blue grouse observed per 100 hours	--	--	--
Total hours effort (forest grouse)	--	--	--

The 1999 brood count surveys on blue grouse indicated that production increased 19 percent from 1998 and was 9 percent above average. This data is collected opportunistically.

Harvest

Hunter Questionnaire

Results of the 1999 ruffed grouse, blue grouse and combined hunter questionnaire are shown in Tables 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 for 1963-99 are listed in Table 17. Harvest statistics for 1999 compared to 1998 and the 36-year average follow:

	<u>1999</u>	<u>Percent change from 1998</u>	<u>Percent change from Average</u>
Forest grouse hunters	41,041	+102	+185
Forest grouse harvested	121,708	+124	+239
Hunter-days afield	140,478	+112	+267
Forest grouse per hunter-day	0.87	+5	-7
Forest grouse per hunter	2.97	+11	+24
Percent ruffed grouse	26.31	+14	-32
Percent blue grouse	23.61	-13	-57
Percent unidentified	50.08	+1	+673

Total harvest increased 124 percent from 1998 and was 234 percent above average. Overall, hunter success (grouse per hunter-day) increased 5 percent in 1999, but remains 7 percent below average. The number of grouse harvested per hunter was 24 percent above average.

Figure 1. Statewide trends of forest grouse harvest statistics, 1963-99.

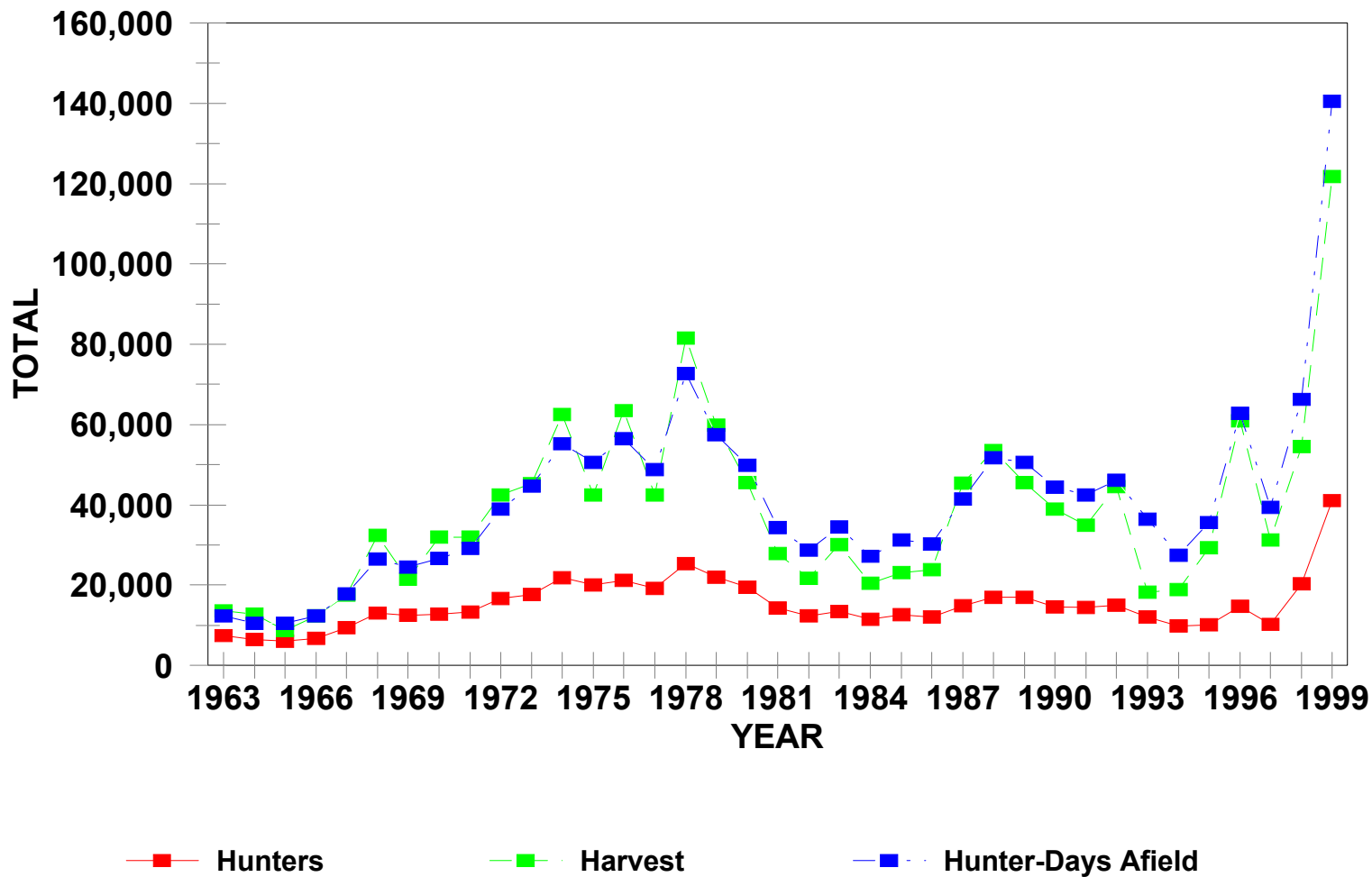
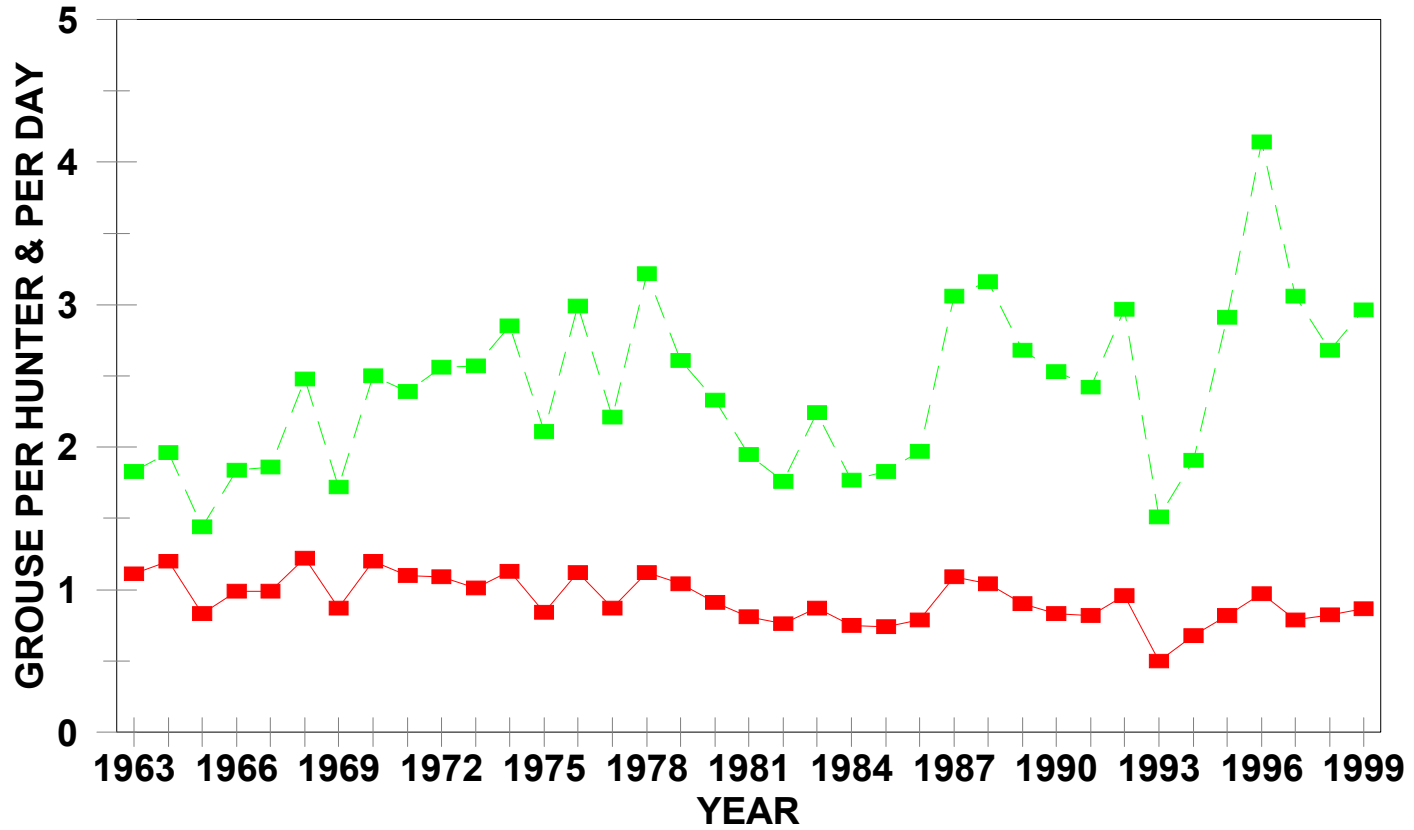


Figure 2. Statewide trends of forest grouse hunter success rates, 1963-99.



—■— Grouse/Hunter-Day —■— Grouse/Hunter

Field Bag Checks

A summary of field bag check data for 1999 is shown in Table 18. Hunter success trends determined via this method are shown in Table 19.

Results of the 1999 survey compared to 1998 and the 10-year (1989-98) average follow:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Total hunters checked	139	+458	-58
Total hours hunted	684	+1296	-31
Forest grouse per hunter (complete hunts)	0.78	+77	+19
Forest grouse bagged per 100 hours	16	-16	-44
Average hours per hunter-day (complete hunts)	4.92	+151	+70
Hours hunted per grouse bagged (complete hunts)	6.28	+3205	+47

Forest grouse per hunter increased 77 percent from 1998, and was 19 percent above the long-term average.

Sex and Age Composition of the Harvest

Sex and age composition of the harvest as determined from wings is shown in Tables 20 and 21.

Following are data derived from ruffed grouse wing surveys in 1999 compared to 1998 and the 10-year (1989-98) average:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Sample Size	508	+358	+252
Percent Males	--	--	--
Percent Females	--	--	--
Young per 100 adults	219	+5	0
Young per 100 hens (adult)	--	--	--

Following are data derived from blue grouse wing surveys in 1999 compared to 1998 and the 10-year (1989-98) average:

	<u>1999</u>	Percent change from 1998	Percent change from Average
Sample Size	539	+269	+226
Percent Males	46	0	+2
Percent Females	54	0	-1
Young per 100 adults	117	-20	-55
Young per 100 hens (adult)	235	-11	-61

Table 2. Trend of ruffed grouse young per 100 adults, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	--	300	250	400	--	--	--	--	--	--	--	--
Cache	300	150	225	167	--	--	--	233	--	--	--	--
Davis	--	--	--	217	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	471	--	--	--
Summit	300	450	400	--	--	--	--	--	--	--	--	--
Weber	--	--	700	467	--	--	--	--	--	--	--	--
REGIONAL TOTALS	300	300	355	277	--	--	--	233	471	--	--	323
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	300	400	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	300	--	--	100	100	--	--	--	--	--	--	--
Wasatch	--	280	--	--	--	--	--	400	--	--	--	--
REGIONAL TOTALS	300	280	300	250	100	--	--	400	--	--	--	272
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	600	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	333	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	333	--	--	--	--	--	--	--	--	600	333
Northeastern Region												
Daggett	150	--	--	--	--	400	--	--	100	--	--	--
Duchesne	400	600	--	--	--	--	--	--	--	--	--	--
Uintah	267	600	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	250	600	--	--	--	400	--	--	100	--	--	338
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	277	356	350	273	100	400	--	285	425	--	600	308

Table 3. Trend of average brood size for ruffed grouse, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	--	3.00	5.00	4.00	--	--	--	--	--	--	--	--
Cache	3.00	3.00	3.00	5.00	--	--	--	2.33	--	--	--	--
Davis	--	--	--	4.33	--	--	--	--	--	--	--	--
Morgan	--	--	3.33	--	--	--	--	--	--	--	--	--
Rich	3.00	--	--	--	--	--	--	--	8.67	--	--	--
Summit	3.00	4.50	4.00	--	--	--	--	--	--	--	--	--
Weber	--	--	7.00	4.67	--	--	--	--	--	--	--	--
REGIONAL TOTALS	3.00	3.75	4.13	4.50	--	--	--	2.33	8.67	--	--	4.40
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	3.00	4.00	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	3.00	--	--	1.00	1.00	--	--	--	--	--	--	--
Wasatch	--	4.70	--	--	--	--	--	4.00	--	--	--	--
REGIONAL TOTALS	3.00	4.70	3.00	2.50	1.00	--	--	4.00	--	--	--	3.03
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	6.00	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	5.00	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	5.00	--	--	--	--	--	--	--	--	6.00	5.00
Northeastern Region												
Daggett	3.00	--	--	--	--	4.00	--	--	1.00	--	--	--
Duchesne	4.00	6.00	--	--	--	--	--	--	--	--	--	--
Uintah	4.00	6.00	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	3.75	6.00	--	--	--	4.00	--	--	1.00	--	--	3.69
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	3.30	4.75	4.00	4.10	1.00	4.00	--	3.00	6.75	--	6.00	3.86

Table 4. Trend of ruffed grouse observed per 100 hours, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	--	64	29	45	--	--	--	--	0	--	--	
Cache	46	5	76	40	--	--	--	--	--	--	--	
Davis	--	--	--	76	--	--	--	--	--	--	--	
Morgan	--	--	50	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	9	40	20	--	--	--	--	--	--	--	--	
Weber	--	--	26	170	--	--	--	--	--	--	--	
REGIONAL TOTALS	22	13	32	47	--	--	--	--	400	--	--	103
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	--	--	12	38	--	--	--	--	--	--	--	
Tooele	--	--	--	--	--	--	--	--	--	--	--	
Utah	133	--	--	13	14	--	--	--	--	--	--	
Wasatch	--	46	--	--	--	--	--	1,000	--	--	--	
REGIONAL TOTALS	133	28	6	13	7	--	--	1,000	--	--	--	198
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	--	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	433	--	--	--	--	--	--	--	--	--	433
Northeastern Region												
Daggett	109	--	--	--	--	50	--	--	80	--	--	
Duchesne	33	175	--	--	--	--	--	--	--	--	--	
Uintah	28	180	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	28	105	--	--	--	50	--	--	80	--	--	66
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	
Emery	--	--	--	--	--	--	--	--	--	--	--	
Grand	--	--	--	--	--	--	--	--	--	--	--	
San Juan	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	26	30	23	31	2	31	--	2,500	336	--	--	372

Table 6. Trend of blue grouse young per 100 adults, 1989-99.

Region and County	Year											Average
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1989-98
Northern Region												
Box Elder	700	144	400	200	--	173	--	--	--	--	--	
Cache	257	300	600	80	--	--	--	400	--	--	--	
Davis	200	480	260	180	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	600	400	--	--	--	--	220	--	--	
Summit	200	178	155	--	--	--	--	--	--	--	--	
Weber	--	--	186	100	--	--	--	--	300	--	--	
REGIONAL TOTALS	244	292	277	207	--	173	--	400	248	--	--	263
Central Region												
Juab	--	700	--	--	--	140	--	--	--	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	80	--	--	--	--	--	--	--	--	--	--	
Tooele	650	276	231	300	--	40	--	--	--	--	--	
Utah	267	286	170	--	--	75	--	--	--	--	--	
Wasatch	--	--	--	100	100	--	--	--	--	--	--	
REGIONAL TOTALS	317	286	194	80	60	75	--	--	--	--	--	169
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	23	--	--	--	--	--	--	--	--	150	294	
Iron	--	--	--	--	--	--	--	--	--	213	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	200	208	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	250	367	
Washington	--	--	--	--	--	--	--	--	--	57	300	
Wayne	--	--	246	--	--	--	--	--	--	350	--	
REGIONAL TOTALS	23	--	246	--	--	--	--	--	--	224	277	164
Northeastern Region												
Daggett	364	233	--	600	--	--	100	450	175	220	--	
Duchesne	--	600	--	800	200	--	--	--	--	--	--	
Uintah	138	60	--	--	600	--	350	300	--	--	--	
REGIONAL TOTALS	268	223	--	400	--	--	267	330	175	220	--	269
Southeastern Region												
Carbon	--	--	--	500	--	--	--	--	--	286	--	
Emery	--	--	--	--	--	--	--	--	--	--	--	
Grand	300	--	200	286	289	200	--	--	400	--	--	
San Juan	300	--	500	233	167	--	--	--	--	--	--	
REGIONAL TOTALS	75	--	350	284	240	200	--	--	400	286	--	273
STATE TOTALS	225	274	238	243	291	167	267	336	253	232	277	253

Table 7. Trend of average brood size for blue grouse, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	7.00	3.20	4.00	5.00	--	3.80	--	--	--	--	--	--
Cache	3.60	3.70	4.50	4.00	--	--	--	4.00	--	--	--	--
Davis	4.50	6.50	4.33	3.00	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	6.00	6.00	--	--	--	--	4.29	--	--	--
Summit	3.00	4.00	3.40	--	--	--	--	--	--	--	--	--
Weber	--	--	3.25	--	--	--	--	--	5.33	--	--	--
REGIONAL TOTALS	3.86	4.30	4.05	4.31	--	3.80	--	4.00	4.60	--	--	4.13
Central Region												
Juab	--	7.00	--	--	--	3.50	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	2.00	--	--	--	--	--	--	--	--	--	--	--
Tooele	6.00	3.13	3.60	3.00	--	2.00	--	--	--	--	--	--
Utah	5.00	5.00	3.22	--	--	3.00	--	--	--	--	--	--
Wasatch	--	--	--	1.00	3.00	--	--	--	--	--	--	--
REGIONAL TOTALS	4.20	4.00	3.36	2.00	3.00	3.00	--	--	--	--	--	3.26
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	3.62
Iron	--	--	--	--	--	--	--	--	--	2.13	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	3.00	--	--	--	--	--	--	--	4.00	4.67	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	5.00	4.00	--
Washington	--	--	--	--	--	--	--	--	--	4.00	3.00	--
Wayne	--	--	4.57	--	--	--	--	--	--	4.00	--	--
REGIONAL TOTALS	--	3.00	4.57	--	--	--	--	--	--	3.29	4	3.62
Northeastern Region												
Daggett	3.89	3.50	--	6.00	--	--	1.00	4.50	1.75	3.67	--	--
Duchesne	--	6.00	--	8.00	2.00	--	--	--	--	--	--	--
Uintah	2.20	--	--	--	6.00	--	3.50	4.00	--	--	--	--
REGIONAL TOTALS	3.29	4.33	--	6.67	4.00	--	2.67	4.14	1.75	3.67	--	3.81
Southeastern Region												
Carbon	--	--	--	5.00	--	--	--	--	--	4.00	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	3.00	--	2.00	4.38	3.17	4.00	--	--	4.00	--	--	--
San Juan	3.00	--	5.00	3.50	2.50	--	--	--	--	--	--	--
REGIONAL TOTALS	3.00	--	3.50	4.13	2.90	4.00	--	--	4.00	4.00	--	3.65
STATE TOTALS	3.61	4.19	3.88	4.29	2.91	3.69	2.67	4.13	3.82	3.48	4	3.67

Table 8. Trend of blue grouse observed per 100 hours, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	--	200	21	136	--	750	--	--	0	--	--	
Cache	114	108	165	45	--	--	--	--	--	--	--	
Davis	120	426	86	112	--	--	--	--	--	--	--	
Morgan	17	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	175	79	--	--	--	--	--	--	--	
Summit	21	100	55	--	--	--	--	--	--	--	--	
Weber	--	--	65	40	--	--	--	--	--	--	--	
REGIONAL TOTALS	79	133	63	83	--	750	--	--	800	--	--	318
Central Region												
Juab	--	800	--	--	--	600	--	--	--	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	14	4	--	23	25	--	--	--	--	--	--	
Tooele	1,000	233	--	200	--	350	--	--	--	--	--	
Utah	367	113	318	--	--	350	--	--	--	--	--	
Wasatch	--	--	--	9	150	--	--	--	--	--	--	
REGIONAL TOTALS	72	75	180	24	29	433	--	--	--	--	--	135
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	
Garfield	--	100	--	--	--	--	--	--	--	--	--	
Iron	--	--	--	--	--	--	--	--	--	--	--	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	--	--	--	--	--	--	--	--	--	--	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	--	--	
Washington	--	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	2,250	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	200	2,250	--	--	--	--	--	--	--	--	1,225
Northeastern Region												
Daggett	265	286	--	1,400	--	--	200	133	183	1,067	--	
Duchesne	--	175	--	225	120	--	--	--	--	--	--	
Uintah	48	320	--	--	3,500	50	150	32	--	--	--	
REGIONAL TOTALS	95	46	--	500	370	8	157	60	183	1,067	--	276
Southeastern Region												
Carbon	--	--	--	240	--	--	--	--	--	--	--	
Emery	--	--	--	--	--	--	--	--	--	--	--	
Grand	89	--	300	540	875	467	--	--	--	--	--	
San Juan	400	--	600	600	457	--	--	--	--	--	--	
REGIONAL TOTALS	85	--	450	480	113	467	--	--	--	--	--	212
STATE TOTALS	81	93	112	130	48	384	157	52	663	1,067	--	279

Table 9. Summary of effort expended on forest grouse brood counts, 1999.

Region and County	Vehicle Miles	Hours of Effort			Total
		Vehicle	Horse	Walk	
Northern Region					
Box Elder	--	--	--	--	0
Cache	--	--	--	--	0
Davis	--	--	--	--	0
Morgan	--	--	--	--	0
Rich	--	--	--	--	0
Summit	--	--	--	--	0
Weber	--	--	--	--	0
REGIONAL TOTALS	0	0	0	0	0
Central Region					
Juab	--	--	--	--	0
Salt Lake	--	--	--	--	0
Sanpete	--	--	--	--	0
Tooele	--	--	--	--	0
Utah	--	--	--	--	0
Wasatch	--	--	--	--	0
REGIONAL TOTALS	0	0	0	0	0
Southern Region					
Beaver	--	--	--	--	0
Garfield	--	--	--	--	0
Iron	--	--	--	--	0
Kane	--	--	--	--	0
Millard	--	--	--	--	0
Piute	--	--	--	--	0
Sevier	--	--	--	--	0
Washington	--	--	--	--	0
Wayne	--	--	--	--	0
REGIONAL TOTALS	0	0	0	0	0
Northeastern Region					
Daggett	--	--	--	--	0
Duchesne	--	--	--	--	0
Uintah	--	--	--	--	0
REGIONAL TOTALS	0	0	0	0	0
Southeastern Region					
Carbon	--	--	--	--	0
Emery	--	--	--	--	0
Grand	--	--	--	--	0
San Juan	--	--	--	--	0
REGIONAL TOTALS	0	0	0	0	0
STATE TOTALS	0	0	0	0	0

Table 10. Summary of ruffed grouse hunter success and distribution of harvest and hunting pressure by region and county, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	22	897	552	0.62	2.09	1.72
CACHE	127	8,436	4,140	0.49	19.66	12.93
DAVIS	31	2,070	931	0.45	4.83	2.91
MORGAN	34	2,380	2,553	1.07	5.55	7.97
RICH	23	914	517	0.57	2.13	1.62
SUMMIT	69	3,674	3,208	0.87	8.56	10.02
WEBER	49	2,553	2,156	0.84	5.95	6.74
REGIONAL TOTALS	355	20,926	14,060	0.67	48.77	43.91
CENTRAL REGION						
JUAB	6	293	86	0.29	0.68	0.27
SALT LAKE	16	845	983	1.16	1.97	3.07
SANPETE	37	2,242	1,983	0.88	5.23	6.20
TOOELE	9	707	224	0.32	1.65	0.70
UTAH	78	4,416	3,760	0.85	10.29	11.75
WASATCH	82	4,502	4,726	1.05	10.49	14.76
REGIONAL TOTALS	228	13,007	11,765	0.90	30.32	36.75
SOUTHERN REGION						
BEAVER	7	189	103	0.55	0.44	0.32
GARFIELD	6	258	224	0.87	0.60	0.70
IRON	8	241	241	1.00	0.56	0.75
KANE	0	0	0	0.00	0.00	0.00
MILLARD	6	224	86	0.38	0.52	0.27
PIUTE	4	241	69	0.29	0.56	0.22
SEVIER	34	2,156	1,293	0.60	5.03	4.04
WASHINGTON	0	0	0	0.00	0.00	0.00
WAYNE	5	189	207	1.09	0.44	0.65
REGIONAL TOTALS	70	3,502	2,225	0.64	8.16	6.95
NORTHEASTERN REGION						
DAGGETT	5	310	86	0.28	0.72	0.27
DUCHESNE	31	1,811	1,604	0.89	4.22	5.01
UINTAH	23	1,552	983	0.63	3.62	3.07
REGIONAL TOTALS	59	3,674	2,673	0.73	8.56	8.35
SOUTHEASTERN REGION						
CARBON	12	759	621	0.82	1.77	1.94
EMERY	8	258	224	0.87	0.60	0.70
GRAND	6	776	34	0.04	1.81	0.11
SAN JUAN	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	26	1,794	879	0.49	4.18	2.75
Unknown	54	0	414	0.00	0.00	1.29
STATE TOTALS	792	42,904	32,018	0.75	100.00	100.00

*Total hunter trips from questionnaire returns.

Table 11. Summary of blue grouse hunter success and distribution of harvest and hunting pressure by region and county, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	22	707	672	0.95	1.73	2.34
CACHE	124	7,987	4,399	0.55	19.53	15.31
DAVIS	35	2,156	1,863	0.86	5.27	6.48
MORGAN	14	1,086	483	0.44	2.66	1.68
RICH	24	1,035	569	0.55	2.53	1.98
SUMMIT	52	2,846	1,397	0.49	6.96	4.86
WEBER	43	2,380	1,569	0.66	5.82	5.46
REGIONAL TOTALS	314	18,200	10,954	0.60	44.50	38.12
CENTRAL REGION						
JUAB	8	603	448	0.74	1.48	1.56
SALT LAKE	16	690	327	0.48	1.69	1.14
SANPETE	39	2,173	1,656	0.76	5.31	5.76
TOOELE	24	1,190	1,569	1.32	2.91	5.46
UTAH	59	3,847	2,898	0.75	9.41	10.08
WASATCH	62	3,502	1,932	0.55	8.56	6.72
REGIONAL TOTALS	208	12,007	8,832	0.74	29.36	30.73
SOUTHERN REGION						
BEAVER	8	276	207	0.75	0.67	0.72
GARFIELD	9	276	224	0.81	0.67	0.78
IRON	14	690	569	0.83	1.69	1.98
KANE	2	69	51	0.75	0.17	0.18
MILLARD	14	776	603	0.78	1.90	2.10
PIUTE	9	569	483	0.85	1.39	1.68
SEVIER	52	2,898	2,277	0.79	7.09	7.92
WASHINGTON	2	51	172	3.33	0.13	0.60
WAYNE	3	69	34	0.50	0.17	0.12
REGIONAL TOTALS	113	5,675	4,623	0.81	13.88	16.09
NORTHEASTERN REGION						
DAGGETT	5	258	51	0.20	0.63	0.18
DUCHESNE	29	1,431	1,397	0.98	3.50	4.86
UINTAH	32	1,759	1,518	0.86	4.30	5.28
REGIONAL TOTALS	66	3,450	2,967	0.86	8.44	10.32
SOUTHEASTERN REGION						
CARBON	11	741	828	1.12	1.81	2.88
EMERY	7	155	189	1.22	0.38	0.66
GRAND	8	517	207	0.40	1.27	0.72
SAN JUAN	4	155	120	0.78	0.38	0.42
REGIONAL TOTALS	30	1,569	1,345	0.86	3.84	4.68
UNKNOWN	75	0	17	0.00	0.00	0.06
STATE TOTALS	806	40,903	28,741	0.70	100.00	100.00

**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, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	32	1,155	1,190	1.03	2.04	1.95
CACHE	158	10,178	8,574	0.84	17.96	14.07
DAVIS	41	2,415	2,380	0.99	4.26	3.91
MORGAN	36	2,415	3,105	1.29	4.26	5.09
RICH	30	1,173	1,035	0.88	2.07	1.70
SUMMIT	90	4,502	4,795	1.07	7.95	7.87
WEBER	64	3,277	3,691	1.13	5.78	6.06
REGIONAL TOTALS	451	25,118	24,773	0.99	44.32	40.65
CENTRAL REGION						
JUAB	11	672	621	0.92	1.19	1.02
SALT LAKE	21	948	1,259	1.33	1.67	2.07
SANPETE	59	3,191	3,760	1.18	5.63	6.17
TOOELE	28	1,293	1,845	1.43	2.28	3.03
UTAH	95	5,416	6,590	1.22	9.56	10.81
WASATCH	101	5,313	6,814	1.28	9.38	11.18
REGIONAL TOTALS	315	16,837	20,891	1.24	29.71	34.28
SOUTHERN REGION						
BEAVER	11	414	327	0.79	0.73	0.54
GARFIELD	13	465	448	0.96	0.82	0.74
IRON	20	862	862	1.00	1.52	1.42
KANE	2	120	103	0.86	0.21	0.17
MILLARD	16	862	707	0.82	1.52	1.16
PIUTE	12	707	569	0.80	1.25	0.93
SEVIER	65	3,571	3,657	1.02	6.30	6.00
WASHINGTON	2	51	172	3.33	0.09	0.28
WAYNE	6	224	327	1.46	0.40	0.54
REGIONAL TOTALS	147	7,280	7,176	0.99	12.85	11.77
NORTHEASTERN REGION						
DAGGETT	6	345	138	0.40	0.61	0.23
DUCHESNE	47	2,380	3,088	1.30	4.20	5.07
UINTAH	41	2,173	2,570	1.18	3.84	4.22
REGIONAL TOTALS	94	4,899	5,796	1.18	8.65	9.51
SOUTHEASTERN REGION						
CARBON	19	1,104	1,500	1.36	1.95	2.46
EMERY	13	379	414	1.09	0.67	0.68
GRAND	9	862	241	0.28	1.52	0.40
SAN JUAN	5	172	138	0.80	0.30	0.23
REGIONAL TOTALS	46	2,518	2,294	0.91	4.44	3.76
UNKNOWN	82	17	17	1.00	0.03	0.03
STATE TOTALS	1,135	56,671	60,949	1.08	100.00	100.00

**Total hunter trips from questionnaire returns.*

Table 13. Summary of forest grouse bagged per hunter-day by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	1.15	0.18	0.80	0.92	1.03	0.85	0.91	1.03
Cache	0.94	0.41	0.88	0.71	1.38	0.83	0.63	0.84
Davis	0.59	0.18	0.45	0.64	1.51	0.71	0.65	0.99
Morgan	1.06	0.16	0.66	1.14	1.66	1.25	0.86	1.29
Rich	0.76	0.34	0.59	0.62	1.10	0.96	0.85	0.88
Summit	0.77	0.40	0.82	0.97	1.21	0.70	0.64	1.07
Weber	1.01	0.51	0.51	0.83	1.23	1.01	0.76	1.13
REGIONAL TOTALS	0.92	0.37	0.72	0.80	1.33	0.88	0.71	0.99
Central Region								
Juab	0.79	0.84	0.56	0.78	0.23	0.60	0.80	0.92
Salt Lake	1.00	0.41	0.87	0.52	0.48	0.33	0.58	1.33
Sanpete	0.78	0.65	0.86	0.48	0.67	0.66	0.70	1.18
Tooele	1.19	0.37	1.02	0.96	1.00	0.08	1.21	1.43
Utah	0.84	0.77	0.59	0.45	0.74	0.65	0.89	1.22
Wasatch	1.25	0.26	0.52	0.74	0.91	0.97	0.65	1.28
REGIONAL TOTALS	0.92	0.52	0.70	0.61	0.76	0.63	0.79	1.24
Southern Region								
Beaver	1.44	1.17	0.64	0.60	0.79	1.09	1.21	0.79
Garfield	0.48	0.27	0.29	0.40	0.83	0.27	0.36	0.96
Iron	0.78	0.93	0.78	0.78	0.38	1.00	0.95	1.00
Kane	1.45	1.25	0.80	1.75	0.50	1.29	0.33	0.86
Millard	1.59	0.86	0.77	0.60	0.75	0.53	1.15	0.82
Piute	1.25	1.00	0.75	1.32	0.20	1.25	0.76	0.80
Sevier	0.75	1.32	0.20	0.80	1.52	0.65	0.89	1.02
Washington	2.00	0.00	0.60	1.25	0.33	0.33	1.25	3.33
Wayne	1.29	0.71	0.45	0.50	0.13	0.22	0.77	1.46
REGIONAL TOTALS	1.19	0.71	0.64	0.62	0.77	0.70	0.90	0.99
Northeastern Region								
Daggett	1.03	0.85	0.58	0.56	1.56	0.36	1.31	0.40
Duchesne	0.68	0.31	0.57	0.86	0.90	0.45	0.97	1.30
Uintah	1.01	0.66	0.53	1.30	1.01	1.01	1.00	1.18
REGIONAL TOTALS	0.94	0.59	0.55	1.00	1.08	0.78	1.02	1.18
Southeastern Region								
Carbon	0.83	0.73	0.78	1.60	0.38	0.67	0.95	1.36
Emery	0.88	0.18	0.48	0.17	0.47	0.50	0.64	1.09
Grand	0.52	1.12	0.00	0.50	0.31	0.75	0.00	0.28
San Juan	1.57	1.50	1.20	0.43	0.71	1.27	0.81	0.80
REGIONAL TOTALS	0.79	0.54	0.67	0.56	0.41	0.80	0.76	0.91
Unknown counties	0.00	0.44	0.00	0.41	1.00	0.00	0.00	1.00
STATE TOTALS	0.96	0.50	0.69	0.73	1.06	0.77	0.80	1.08

Table 16. Statewide summary of forest grouse harvest statistics, 1963-99.

Year	Total	Total Harvest						Grouse/Hunter-Day			Grouse/Hunter				
	Hunters	Ruffed	Percent	Blue	Percent	Unknown	Percent	Harvest	Hunter-Days Afield	Ruffed	Blue	Total	Ruffed	Blue	Total
1963	7,425	5,470	40.20	7,372	54.17	766	5.63	13,608	12,313	0.44	0.66	1.11	0.74	0.99	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	1.96
1965	6,005	3,225	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	0.99	0.87	0.69	1.86
1968	13,061	17,048	52.59	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
1971	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	1.22	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	0.58	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	0.91	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	980	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	59.31	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	0.90	0.96	1.64	2.68
1990	14,591	11,010	28.29	26,115	67.10	1,797	4.62	38,922	44,452	0.25	0.59	0.83	0.75	1.79	2.53
1991	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
1992	15,000	15,017	33.73	29,146	65.47	355	0.80	44,518	46,136	0.33	0.63	0.96	1.00	1.94	2.97
1993	12,029	6,650	36.65	11,040	60.84	457	2.52	18,147	36,390	0.18	0.30	0.50	0.55	0.92	1.51
1994	9,827	6,908	36.62	11,865	62.90	89	0.47	18,862	27,510	0.25	0.43	0.68	0.70	1.21	1.91
1995	10,088	13,140	44.83	16,172	55.17	0*	0.00	29,312	35,591	0.77	0.87	0.82	2.79	3.00	2.91
1996	14,702	29,567	48.53	31,355	51.47	0*	0.00	60,922	62,711	0.97	0.97	0.97	4.16	4.13	4.14
1997	10,206	14,861	47.63	16,337	52.37	0*	0.00	31,198	39,304	0.77	0.81	0.79	3.11	3.01	3.06
1998	20,310	12,586	23.12	14,773	27.14	27,080	49.74	54,439	66,256	0.82	0.86	0.82	3.13	2.87	2.68
1999	41,041	32,018	26.31	28,741	23.61	60,949	50.08	121,708	140,478	0.75	0.70	0.87	2.68	2.36	2.97
Totals															
(1963-99)	558,569	520,556	--	740,001	--	151,885	--	1,412,442	1,516,667	--	--	--	--	--	--
Averages															
(1963-98)	14,376	13,571	38.77	19,757	54.75	2,526	6.48	35,854	38,227	0.42	0.56	0.93	1.15	1.50	2.39

*Not Calculated

Table 17. Blue and ruffed grouse harvest statistics and hunt regulations, 1963-1999

Year	Total Ruffed Grouse Harvest	Total Blue Grouse Harvest	Total Forest Grouse Harvest	Total Hunters Afield	Total Hunter Days Afield	Season Length			Aggregate Bag Limits	
						Open	Close	Days	Daily	Possession
1963	5,470	7,372	13,608	7,425	12,313	?	?	?**	4	8
1964	5,354	6,685	12,691	6,487	10,566	9/26	10/16	21	4	8
1965	3,225	4,924	8,669	6,005	105,074	9/25	10/22	28	4	8
1966	6,966	4,659	12,321	6,683	12,387	9/24	10/21	28	4	8
1967	8,476	6,773	17,526	9,420	17,773	9/23	10/31	39	4	8
1968	17,048	12,604	32,414	13,061	26,537	9/28	10/29	32	4	8
1969	9,490	10,419	21,498	12,523	24,572	9/27	11/02	37	4	8
1970	15,590	13,515	31,898	12,775	26,619	9/26	11/06	42	4	8
1971	15,759	13,749	31,901	13,363	29,100	9/25	11/30	67	4	8
1972	20,648	19,221	42,518	16,640	38,940	9/23	11/30	69	4	8
1973	7,153	36,846	45,232	17,588	44,738	9/22	11/30	70	4	8
1974	24,561	32,236	62,439	21,920	55,258	9/28	11/30	64	4	8
1975	15,750	23,138	42,461	20,102	50,579	9/20	11/30	72	4	8
1976	23,551	35,660	63,436	21,186	56,422	9/18	11/30	74	4	8
1977	15,766	23,455	42,477	19,188	48,746	9/17	11/30	75	4	8
1978	30,340	46,651	81,558	25,318	72,732	9/16	11/30	76	4	8
1979	23,156	33,070	59,851	21,993	57,404	9/15	11/30	77	4	8
1980	15,457	27,588	45,522	19,511	49,899	9/20	11/30	72	4	8
1981	8,557	17,852	27,894	14,329	34,305	9/19	11/30	73	4	8
1982	7,509	12,138	21,778	12,384	28,767	9/18	11/30	74	4	8
1983	11,366	16,955	30,088	13,414	34,530	9/17	11/30	75	4	8
1984	6,780	12,647	20,396	11,511	27,244	9/15	11/30	77	4	8
1985	8,701	13,416	23,097	12,646	31,290	9/14	11/30	78	4	8
1986	8,819	14,156	23,869	12,117	30,312	9/13	11/30	79	4	8
1987	15,811	28,068	45,326	14,831	41,428	9/12	11/30	80	4	8
1988	19,100	31,556	53,562	16,947	51,726	9/11	11/30	82	4	8
1989	16,323	27,794	45,487	16,987	50,631	9/09	11/30	82	4	8
1990	11,010	26,115	38,922	14,591	44,452	9/08	11/30	82	4	8
1991	12,073	21,310	34,897	14,421	42,517	9/14	11/30	77	4	8
1992	15,017	29,146	44,518	15,000	46,136	9/12	11/30	79	4	8
1993	6,650	11,040	18,147	12,029	36,390	9/11	11/30	82	4	8
1994	6,908	11,865	18,862	9,827	27,510	9/10	11/30	81	4	8
1995	13,140	16,172	29,312	10,088	35,591	9/9	11/30	82	4	8
1996	29,567	31,355	60,922	14,702	62,711	9/7	11/30	84	4	8
1997	14,861	16,337	31,198	10,206	39,304	9/12	11/30	80	4	8
1998	12,586	14,773	54,439	20,310	66,256	9/12	11/30	80	4	8
1999	32,018	28,741	60,949	41,041	140,478	9/11	11/30	81	4	8

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

Table 18. Forest grouse field bag check summary, 1999.

Region and County	ALL HUNTS					COMPLETE HUNTS					
	Total Parties	Total Hunters	Total Hours	Total Birds	Birds/100 Hr	Complete Hunts	Total Hunters	Total Hours	Total Birds	Birds/Hunter	Birds/100 Hr
Northern Region											
Box Elder	--	--	--	--	--	--	--	--	--	--	--
Cache	71	138	681	108	16	71	138	681	108	0.78	16
Davis	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	71	138	681	108	16	71	138	681	108	0.78	16
Central Region											
Juab	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--
Utah	1	1	3.0	1	33	1	1	3.0	1	1.00	33
Wasatch	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	1	1	3.0	1	33	1	1	3.0	1	1.00	33
Southern Region											
Beaver	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region											
Daggett	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region											
Carbon	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	72	139	684.0	109	16	72	139	684.0	109	0.78	16

Table 19. Forest grouse hunter success trend as determined by field bag checks, 1994-99.

Region and County	1994		1995		1996		1997		1998		1999	
	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr	Birds/ Hunter	Birds/ 100 Hr
Northern Region												
Box Elder	--	--	0.27	4	0.17	4	--	--	--	--	--	--
Cache	0.59	14	0.43	8	1.28	35	0.28	19	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	0.59	15	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	1.23	31	0.23	11	--	--	--	--
REGIONAL TOTALS	0.59	14	0.42	8	1.19	31	0.25	14	--	--	--	--
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	1.00	33
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	0.44	19	1.00	33
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region												
Daggett	--	--	0.13	5	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	0.25	7	0.00	0	--	--	--	--	--	--	--	--
REGIONAL TOTALS	0.25	7	0.12	4	--	--	--	--	--	--	--	--
Southeastern Region												
Carbon	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	1.00	120	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	1.00	120	--	--	--	--
STATE TOTALS	0.53	13	0.40	8	1.19	31	0.27	15	0.44	19	1.00	33

Table 20. Sex and age composition of harvested ruffed grouse, 1999.

Region and County	Sample Size	Adults			Young			Young/ 100 Adults	Young/ 100 Hens
		M	F	Total	M	F	Total		
Northern Region									
Box Elder	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	337	0	0	83	0	0	254	306	--
Central Region									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	171	0	0	76	0	0	95	125	--
Southern Region									
Beaver	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
Northeastern Region									
Daggett	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
Southeastern Region									
Carbon	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
STATE TOTALS	508	0	0	159	0	0	349	219	--

Table 21. Sex and age composition of harvested blue grouse, 1999.

Region and County	Sample Size	Adults			Young			Young/ 100 Adults	Young/ 100 Hens
		M	F	Total	M	F	Total		
Northern Region									
Box Elder	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	375	79	85	164	92	119	211	129	248
Central Region									
Juab	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	137	38	35	73	25	39	64	88	183
Southern Region									
Beaver	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
Northeastern Region									
Daggett	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--
Southeastern Region									
Carbon	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--
San Juan	27	7	4	11	7	9	16	145	400
REGIONAL TOTALS	27	7	4	11	7	9	16	145	400
STATE TOTALS	539	124	124	248	124	167	291	117	235

Quail



California Quail

Statewide harvest statistics, when compared to 1998, showed an increase in total harvest. Hunter success (birds per hunter-day) increased 5 percent and was 7 percent above average. Hunter-days afield increased 12 percent from 1998, but was 3 percent below average.

California quail are found primarily in urban areas of Utah. Hunter access to these birds is limited.

Gambel's Quail



Figure 1. Statewide trends of quail harvest statistics, 1959-99.

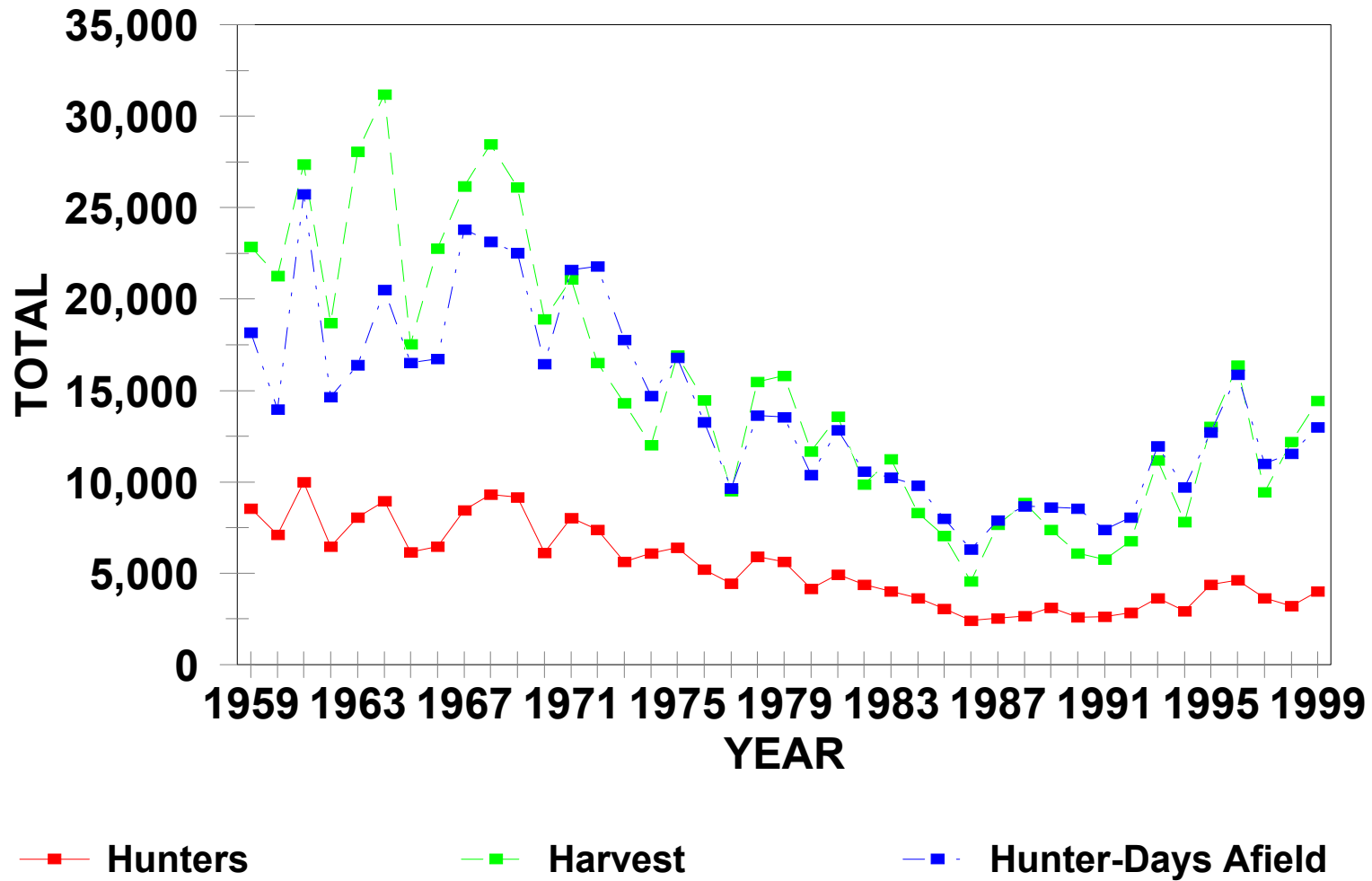
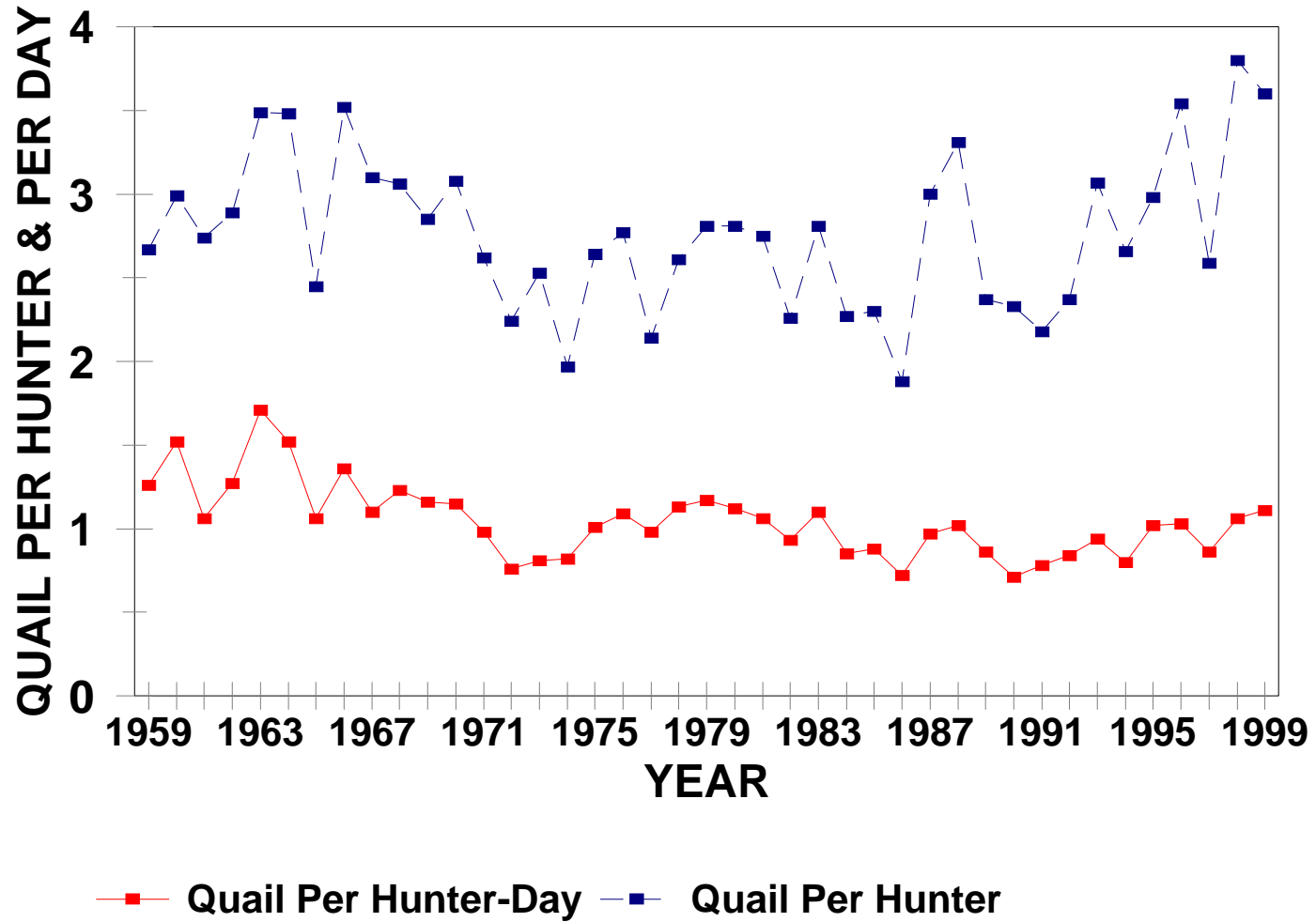


Figure 2. Statewide trends of quail hunter success rates, 1959-99.



Brood Counts

Results of the annual random brood counts for quail for 1999 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. Gambel's quail long period waterhole count trends are shown in Table 10. Survey results for 1999 compared to 1998 and the 10-year (1989-98) average follow:

	<u>1999</u>	<u>Percent change from 1998</u>	<u>Percent change from Average</u>
Total quail observed	148	-48	-26
Young per 100 adults	80	-83	-75
Mean brood size	2.82	-73	-62
Quail observed per 100 hours	--	--	--
Total hours effort	--	--	--

Total quail observed decreased 48 percent over 1998. Young per 100 adults decreased 83 percent over 1998.

Harvest

Results of the annual hunter questionnaire for 1999 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 1999 season to 1998 and the 44-year average follow:

	<u>1999</u>	<u>Percent change from 1998</u>	<u>Percent change from Average</u>
Quail hunters	4,002	+25	-23
Quail harvested	14,422	+18	+1
Hunter-days afield	13,007	+12	-3
Quail per hunter-day	1.11	+5	+7
Quail per hunter	3.60	-5	+34

Quail hunters increased 25 percent from 1998, and remain 23 percent below the long-term average. Total quail harvest increased 18 percent from 1998.

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

Field Bag Checks

A summary of field bag check data for 1999 is shown in Table 11. No field bag check data was collected in 1999.

Table 1. Quail summer inventory, 1999.

Region and County	Distinct Broods		Mixed Young		Adults w/o Young	Total Adults	Total Young	Young/100 Adults	Vehicle Miles	Hours of Effort			Birds/100 Hr			
	#	Adults	Young	Brood						Adults	Young	Vehicle		Horse	Walk	Total
Northern Region																
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Central Region																
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Southern Region																
Beaver	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Garfield	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Kane*	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Millard	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Piute	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Sevier	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Washington*	11	22	31	2.82	40	35	20	82	66	80	--	0.0	--	--	0.0	ERR
Wayne*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	11	22	31	2.82	40	35	20	82	66	80	0	0	0	0	0.0	ERR
Northeastern Region																
Daggett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region																
Carbon	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	11	22	31	2.82	40	35	20	82	66	80	0	0.0	0	0	0.0	ERR

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

Table 2. Trend of quail young per 100 adults, 1989-99.

Region and County	Year											Average
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	1989-1998
Northern Region												
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	656	--	--	--	--	--	--	--	--	--	656
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	900	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	900	--	--	--	--	--	--	--	--	900
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane*	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	179	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington*	194	367	--	--	294	132	194	--	290	482	80	--
Wayne*	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	194	252	--	--	294	132	194	--	290	482	80	263
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	375	--	400	--	--	--	--	--	--	--
Uintah	420	667	--	370	333	--	145	--	--	--	--	--
REGIONAL TOTALS	420	667	375	370	336	--	145	--	--	--	--	386
Southeastern Region												
Carbon	--	--	--	767	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	767	--	--	--	--	--	--	--	767
STATE TOTALS	220	391	480	462	299	132	163	--	290	482	80	324

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

Table 3. Trend of average brood size for quail, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	11.80	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	11.80	--	--	--	--	--	--	--	--	--	11.80
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	9.00	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	9.00	--	--	--	--	--	--	--	--	9.00
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane*	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	12.50	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington*	--	11.00	--	--	6.05	6.00	6.60	--	6.67	10.26	2.82	--
Wayne*	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	11.00	--	--	6.05	6.00	6.60	--	6.67	10.26	2.82	7.76
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	4.00	--	--	--	--	--	--	--
Uintah	4.50	6.70	--	7.40	7.00	--	7.50	--	--	--	--	--
REGIONAL TOTALS	4.50	6.70	--	7.40	6.25	--	7.50	--	--	--	--	6.47
Southeastern Region												
Carbon	--	--	--	7.67	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	7.67	--	--	--	--	--	--	--	7.67
STATE TOTALS	4.50	10.45	9.00	7.50	6.07	6.00	6.86	--	6.67	10.26	2.82	7.48

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

Table 4. Trend of quail observed per 100 hours, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	0
Central Region												
Juab	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	1,000	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	1,000	--	--	--	--	--	--	--	--	1,000
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--
Kane*	--	--	--	--	--	--	--	--	--	--	--	--
Millard	--	975	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--	--
Washington*	53	1,050	--	--	7,788	2,963	1,250	--	2,343	8,143	--	--
Wayne*	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	53	1,013	--	--	7,788	2,963	1,250	--	2,343	8,143	--	3,365
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	475	--	250	--	--	--	--	--	--	--
Uintah	371	767	--	4,700	3,033	--	1,520	--	--	--	--	--
REGIONAL TOTALS	371	767	475	4,700	1,920	--	1,520	--	--	--	--	1,876
Southeastern Region												
Carbon	--	--	--	1,300	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	1,300	--	--	--	--	--	--	--	1,300
STATE TOTALS	524	1,564	580	2,433	5,531	2,963	1,400	--	2,343	8,143	--	2,831

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

Table 5. Summary of quail hunter success and distribution of harvest and hunting pressure by region and county, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	10	448	241	0.54	3.45	1.67
CACHE	3	86	34	0.40	0.66	0.24
DAVIS	2	120	0	0.00	0.93	0.00
MORGAN	3	155	69	0.44	1.19	0.48
RICH	0	0	0	0.00	0.00	0.00
SUMMIT	1	17	0	0.00	0.13	0.00
WEBER	7	552	603	1.09	4.24	4.19
REGIONAL TOTALS	26	1,380	948	0.69	10.61	6.58
CENTRAL REGION						
JUAB	2	103	69	0.67	0.80	0.48
SALT LAKE	1	258	690	2.67	1.99	4.78
SANPETE	4	396	155	0.39	3.05	1.08
TOOELE	3	86	51	0.60	0.66	0.36
UTAH	23	810	707	0.87	6.23	4.90
WASATCH	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	33	1,656	1,673	1.01	12.73	11.60
SOUTHERN REGION						
BEAVER	0	0	0	0.00	0.00	0.00
GARFIELD	0	0	0	0.00	0.00	0.00
IRON	2	276	189	0.69	2.12	1.32
KANE	0	0	0	0.00	0.00	0.00
MILLARD	13	465	465	1.00	3.58	3.23
PIUTE	0	0	0	0.00	0.00	0.00
SEVIER	4	276	51	0.19	2.12	0.36
WASHINGTON	38	3,070	4,847	1.58	23.61	33.61
WAYNE	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	57	4,088	5,555	1.36	31.43	38.52
NORTHEASTERN REGION						
DAGGETT	0	0	0	0.00	0.00	0.00
DUCHESNE	35	1,983	2,104	1.06	15.25	14.59
UINTAH	43	2,760	3,588	1.30	21.22	24.88
REGIONAL TOTALS	78	4,744	5,693	1.20	36.47	39.47
SOUTHEASTERN REGION						
CARBON	4	414	17	0.04	3.18	0.12
EMERY	13	621	500	0.81	4.77	3.47
GRAND	1	69	0	0.00	0.53	0.00
SAN JUAN	1	34	34	1.00	0.27	0.24
REGIONAL TOTALS	19	1,138	552	0.48	8.75	3.83
UNKNOWN	34	0	0	0.00	0.00	0.00
STATE TOTALS	247	13,007	14,422	1.11	100.00	100.00

**Total hunter-trips from questionnaire returns.*

Table 6. Summary of quail bagged per hunter-day by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	1.21	0.36	0.75	1.21	1.18	0.00	0.00	0.54
Cache	1.00*	0.00*	1.86*	0.25*	1.00*	0.40	0.00	0.40
Davis	0.60	1.25	0.64	0.33	0.78	0.76	1.00	0.00
Morgan	0.00*	0.14*	0.00*	0.00*	0.00*	0.00	0.00	0.44
Rich	0.00*	0.00*	4.00*	0.00*	0.00*	0.00	0.00	0.00
Summit	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Weber	0.56	0.73	0.22	1.43	0.64	0.40	1.82	1.09
REGIONAL TOTALS	0.63	0.55	0.57	0.72	0.92	0.52	1.14	0.69
Central Region								
Juab	0.00	1.50	1.67	0.00	1.00	0.25	5.00	0.67
Salt Lake	1.89	0.00	1.40	0.00	3.00	1.33	2.00	2.67
Sanpete	0.00*	1.00*	1.00*	0.00*	1.67*	1.50	1.00	0.39
Tooele	0.00*	0.00*	1.43*	0.00	0.00	0.00	0.30	0.60
Utah	0.54	0.48	0.63	1.18	0.74	0.63	0.43	0.87
Wasatch	0.00*	0.00*	2.00*	1.63*	0.33*	0.00	0.00	0.00
REGIONAL TOTALS	0.61	0.47	0.85	1.15	0.75	0.53	0.55	1.01
Southern Region								
Beaver	0.00	0.00	0.40*	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	1.63	1.00*	0.67*	0.97*	0.00	0.00	0.69
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	1.50	0.58	0.73	0.75	0.73	0.95	0.16	1.00
Piute	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sevier	0.47	0.43	0.50	0.15	1.29	0.33	1.00	0.19
Washington	1.04	1.57	0.93	1.08	1.15	0.54	1.37	1.58
Wayne	0.00	0.00	5.00*	0.00*	3.00*	1.00	0.00	0.00
REGIONAL TOTALS	1.01	1.25	0.90	1.00	1.07	0.81	1.20	1.36
Northeastern Region								
Daggett	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Duchesne	1.01	1.04	1.10	1.27	1.22	0.97	1.17	1.06
Uintah	0.90	0.63	0.76	0.75	1.41	1.28	1.11	1.30
REGIONAL TOTALS	0.95	0.82	0.88	1.00	1.33	1.12	1.13	1.20
Southeastern Region								
Carbon	1.12	1.33	0.00	3.67	0.00	0.00	2.00	0.04
Emery	0.97	0.92	0.57	1.19	0.29	0.67	0.74	0.81
Grand	0.00	0.00	0.00	2.80	0.85	0.00	0.20	0.00
San Juan	0.00	0.00	0.00	1.50	0.00	0.00	0.00	1.00
REGIONAL TOTALS	1.02	0.91	0.49	1.57	0.38	0.57	0.64	0.48
Unknown counties	0.00	1.50	0.00	6.00	0.00	0.00	0.00	0.00
STATE TOTALS	0.84	0.94	0.80	1.02	1.03	0.86	1.06	1.11

*Closed Season

Table 7. Percentage distribution of quail harvest by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	4.45	0.68	1.35	2.54	5.68	0.00	0.00	1.67
Cache	1.31*	0.00*	2.92*	0.45*	1.56*	0.44	0.00	0.24
Davis	2.36	1.70	1.57	2.24	0.99	4.19	0.76	0.00
Morgan	0.00*	0.17*	0.00*	0.00*	0.00*	0.00	0.00	0.48
Rich	0.00*	0.00*	0.90*	0.00*	0.00*	0.00	0.00	0.00
Summit	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Weber	3.67	3.74	1.80	4.93	2.56	1.76	3.81	4.19
REGIONAL TOTALS	11.78	6.28	8.54	10.15	10.80	6.39	4.57	6.58
Central Region								
Juab	0.00	0.51	1.12	0.00	0.14	0.22	0.95	0.48
Salt Lake	4.45	0.00	3.15	0.00	1.28	0.88	0.76	4.78
Sanpete	0.00*	0.17*	0.22*	0.00*	1.71*	0.66	0.19	1.08
Tooele	0.00*	0.00*	2.25	0.00	0.00	0.00	0.57	0.36
Utah	12.31	8.49	10.56	11.79	9.23	8.81	3.43	4.90
Wasatch	0.00*	0.00*	1.80*	3.88*	0.85*	0.00	0.00	0.00
REGIONAL TOTALS	16.76	9.17	19.10	15.67	12.22	10.57	5.91	11.60
Southern Region								
Beaver	0.00	0.00	0.90*	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	2.21	2.70*	1.19*	4.26*	0.00	0.00	1.32
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	6.28	4.41	4.94	0.45	2.27	4.63	0.95	3.23
Piute	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sevier	1.83	2.55	0.22	0.30	3.13	0.88	1.52	0.36
Washington	13.88	48.05	39.33	28.81	9.94	16.74	54.10	33.61
Wayne	0.00	0.00	1.12*	0.00*	0.43*	0.22	0.00	0.00
REGIONAL TOTALS	21.99	57.22	49.22	30.75	20.03	22.47	56.58	38.52
Northeastern Region								
Daggett	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00
Duchesne	18.33	9.00	7.64	19.85	26.56	25.99	7.81	14.59
Uintah	18.85	6.11	9.44	12.84	24.43	32.82	19.62	24.88
REGIONAL TOTALS	37.18	15.11	17.08	32.69	51.85	58.81	27.43	39.47
Southeastern Region								
Carbon	4.97	0.68	0.00	1.64	0.00	0.00	0.38	0.12
Emery	7.33	7.98	6.07	5.67	2.70	1.76	4.76	3.47
Grand	0.00	0.00	0.00	2.09	1.56	0.00	0.38	0.00
San Juan	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.24
REGIONAL TOTALS	12.31	8.66	6.07	9.85	4.26	1.76	5.52	3.83
Unknown counties	0.00	3.57	0.00	0.90	0.85	0.00	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*Closed Season

Table 8. Percentage distribution of quail hunting pressure by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	3.08	1.75	1.45	2.14	4.98	1.13	1.01	3.45
Cache	1.10*	1.75*	1.27*	1.83*	1.61*	0.94	0.00	0.66
Davis	3.30	1.27	1.99	6.88	1.32	4.72	0.80	0.93
Morgan	2.64*	1.11*	0.72*	0.00*	0.15*	0.00	0.20	1.19
Rich	0.00*	0.00*	0.18*	0.00*	0.00*	0.00	0.00	0.00
Summit	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.13
Weber	5.51	4.77	6.51	3.52	4.10	3.77	2.21	4.24
REGIONAL TOTALS	15.64	10.65	12.12	14.37	12.15	10.57	4.23	10.61
Central Region								
Juab	0.22	0.32	0.54	0.31	0.15	0.75	0.20	0.80
Salt Lake	1.98	0.64	1.81	0.00	0.44	0.57	0.40	1.99
Sanpete	0.00*	0.16*	0.18*	0.61*	0.44*	0.38	0.20	3.05
Tooele	1.54*	0.48*	1.27*	0.31	0.15	2.26	2.01	0.66
Utah	19.16	16.54	13.56	10.25	12.88	12.08	8.45	6.23
Wasatch	0.22*	0.00*	0.72*	2.45*	2.64*	0.94	0.00	0.00
REGIONAL TOTALS	23.13	18.13	18.08	13.92	16.69	16.98	11.27	12.73
Southern Region								
Beaver	0.00	0.16	1.81	0.00*	0.00*	0.00	0.00	0.00
Garfield	0.00	0.00	0.00	0.00*	0.00*	0.19	0.00	0.00
Iron	0.22	1.27	2.17	1.83*	4.54*	0.00	0.20	2.12
Kane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Millard	3.52	7.15	5.43	0.61	3.22	4.15	6.24	3.58
Piute	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sevier	3.30	5.56	0.36	1.99	2.49	2.26	1.61	2.12
Washington	11.23	28.62	34.18	27.22	8.93	16.98	41.65	23.61
Wayne	0.00	0.16	0.18	0.00*	0.15*	0.19	0.00	0.00
REGIONAL TOTALS	18.28	42.93	44.12	31.65	19.33	23.77	49.70	31.43
Northeastern Region								
Daggett	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Duchesne	15.20	8.11	5.61	16.06	22.40	23.02	7.04	15.25
Uintah	17.62	9.06	9.95	17.43	17.86	21.89	18.71	21.22
REGIONAL TOTALS	32.82	17.17	15.55	33.49	40.27	44.91	25.76	36.47
Southeastern Region								
Carbon	3.74	0.48	0.54	0.46	0.00	0.00	0.20	3.18
Emery	6.39	8.11	8.50	4.89	9.66	2.26	6.84	4.77
Grand	0.00	0.32	0.90	0.76	1.90	0.38	2.01	0.53
San Juan	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.27
REGIONAL TOTALS	10.13	8.90	9.95	6.42	11.57	2.64	9.05	8.75
Unknown counties	0.00	0.24	0.00	2.23	0.18	1.13	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*Closed Season

Table 9. Statewide summary of quail harvest statistics, 1951-99.

Year	Total Hunters	Total Harvest	Hunter-Days Afield	Quail Per Hunter-Day	Quail Per Hunter
1951	3,856	6,362	7,069	0.90	1.65
1952	2,694	6,105	5,500	1.11	2.27
1953	2,676	5,753	4,494	1.28	2.15
1954	3,855	7,479	8,696	0.86	1.94
1955	--	--	--	0.17	2.10
1956	--	--	--	--	2.26
1957	--	--	--	--	1.85
1958	--	--	--	--	3.73
1959	8,554	22,854	18,174	1.26	2.67
1960	7,117	21,272	13,971	1.52	2.99
1961	9,980	27,362	25,746	1.06	2.74
1962	6,462	18,710	14,660	1.27	2.89
1963	8,059	28,088	16,383	1.71	3.49
1964	8,951	31,189	20,510	1.52	3.48
1965	6,163	17,532	16,528	1.06	2.45
1966	6,465	22,771	16,720	1.36	3.52
1967	8,455	26,187	23,806	1.10	3.10
1968	9,302	28,469	23,132	1.23	3.06
1969	9,160	26,119	22,529	1.16	2.85
1970	6,141	18,896	16,452	1.15	3.08
1971	8,039	21,082	21,595	0.98	2.62
1972	7,380	16,504	21,779	0.76	2.24
1973	5,654	14,324	17,777	0.81	2.53
1974	6,097	12,005	14,702	0.82	1.97
1975	6,397	16,903	16,805	1.01	2.64
1976	5,215	14,454	13,261	1.09	2.77
1977	4,446	9,496	9,646	0.98	2.14
1978	5,924	15,491	13,649	1.13	2.61
1979	5,632	15,821	13,550	1.17	2.81
1980	4,156	11,690	10,400	1.12	2.81
1981	4,946	13,586	12,843	1.06	2.75
1982	4,368	9,870	10,575	0.93	2.26
1983	4,012	11,248	10,232	1.10	2.81
1984	3,654	8,303	9,805	0.85	2.27
1985	3,065	7,051	7,994	0.88	2.30
1986	2,432	4,574	6,326	0.72	1.88
1987	2,549	7,648	7,918	0.97	3.00
1988	2,671	8,849	8,682	1.02	3.31
1989	3,111	7,384	8,607	0.86	2.37
1990	2,614	6,091	8,561	0.71	2.33
1991	2,644	5,775	7,393	0.78	2.18
1992	2,861	6,788	8,068	0.84	2.37
1993	3,649	11,192	11,952	0.94	3.07
1994	2,936	7,822	9,721	0.80	2.66
1995	4,374	13,023	12,712	1.02	2.98
1996	4,622	16,351	15,862	1.03	3.54
1997	3,637	9,436	11,016	0.86	2.59
1998	3,211	12,213	11,562	1.06	3.80
1999	4,002	14,422	13,007	1.11	3.60
Totals (1951-99)	232,188	644,544	600,370	--	--
Averages (1951-98)	5,186	14,321	13,349	1.04	2.68

Table 10. Gambel's quail long period waterhole count trend on the west slope of the Beaver Dam Mountains, Washington County, 1980-99. These counts have been conducted since 1962.

Index	Year																			Average	
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		1999
Total Young	72	37	85	114	166	47	163	348	59	35	33	208	415	465	135	33	--	61	236	66	151
Total Adults	52	25	33	14	86	11	48	139	47	18	9	35	128	158	102	17	--	21	30	82	54
Total Quail	124	62	118	128	252	58	211	487	106	53	42	243	543	623	237	50	--	82	266	148	205
Young per 100 Adults	138	148	258	814	193	427	340	250	126	194	367	594	324	294	132	194	--	290	787	80	326

Table 11. Quail field bag check summary, 1999.

Region and County	ALL HUNTS					COMPLETE HUNTS					
	Total Parties	Total Hunters	Total Hours	Total Birds	Birds/ 100 Hr	Complete Hunts	Total Hunters	Total Hours	Total Birds	Birds/ Hunter	Birds/ 100 Hr
Northern Region											
Box Elder	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Central Region											
Juab	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Southern Region											
Beaver	--	--	--	--	--	--	--	--	--	--	--
Garfield	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--
Kane	--	--	--	--	--	--	--	--	--	--	--
Millard	--	--	--	--	--	--	--	--	--	--	--
Piute	--	--	--	--	--	--	--	--	--	--	--
Sevier	--	--	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--	--	--
Wayne	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Northeastern Region											
Daggett	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
Southeastern Region											
Carbon	--	--	--	--	--	--	--	--	--	--	--
Emery	--	--	--	--	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--
STATE TOTALS	0	0	0	0	ERR	0	0	0	0	ERR	ERR



Hungarian Partridge

The 1999 hunt data indicated dramatically increased hunting pressure on Huns when compared to 1998. The number of Huns harvested increased 237 percent in 1999. Total hunters and days afield were well above the long-term average.

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

Brood Counts

Results of the annual random brood counts for 1999 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 1999 compared to 1998 and the 10-year (1989-98) average follow:

	<u>1999</u>	Percent change from <u>1998</u>	Percent change from <u>Average</u>
Total Huns observed	--	--	--
Young per 100 adults	--	--	--
Mean brood size	--	--	--
Huns observed per 100 hours	--	--	--
Total hours effort	--	--	--

No brood count data was collected in 1999. This data is only collected opportunistically.

Harvest

Hunter Questionnaire

Results of the annual hunter questionnaire for 1999 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 1999 season compared to 1998 and the previous 40-year average follow:

	<u>1999</u>	Percent change from <u>1998</u>	Percent change from <u>Average</u>
Hungarian partridge hunters	6,211	+164	+85
Hungarian partridge harvest	32,036	+237	+338
Hunter-days afield	20,063	+176	+138
Huns per hunter-day	1.60	+22	+94
Huns per hunter	5.16	+27	+145

Hungarian partridge hunters and hunting pressure increased in 1999. Total Huns harvested increased 237 percent from 1998. Harvest was 338 percent above the long-term average.

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

**Figure 1. Statewide trends of Hun
harvest statistics, 1959-99.**

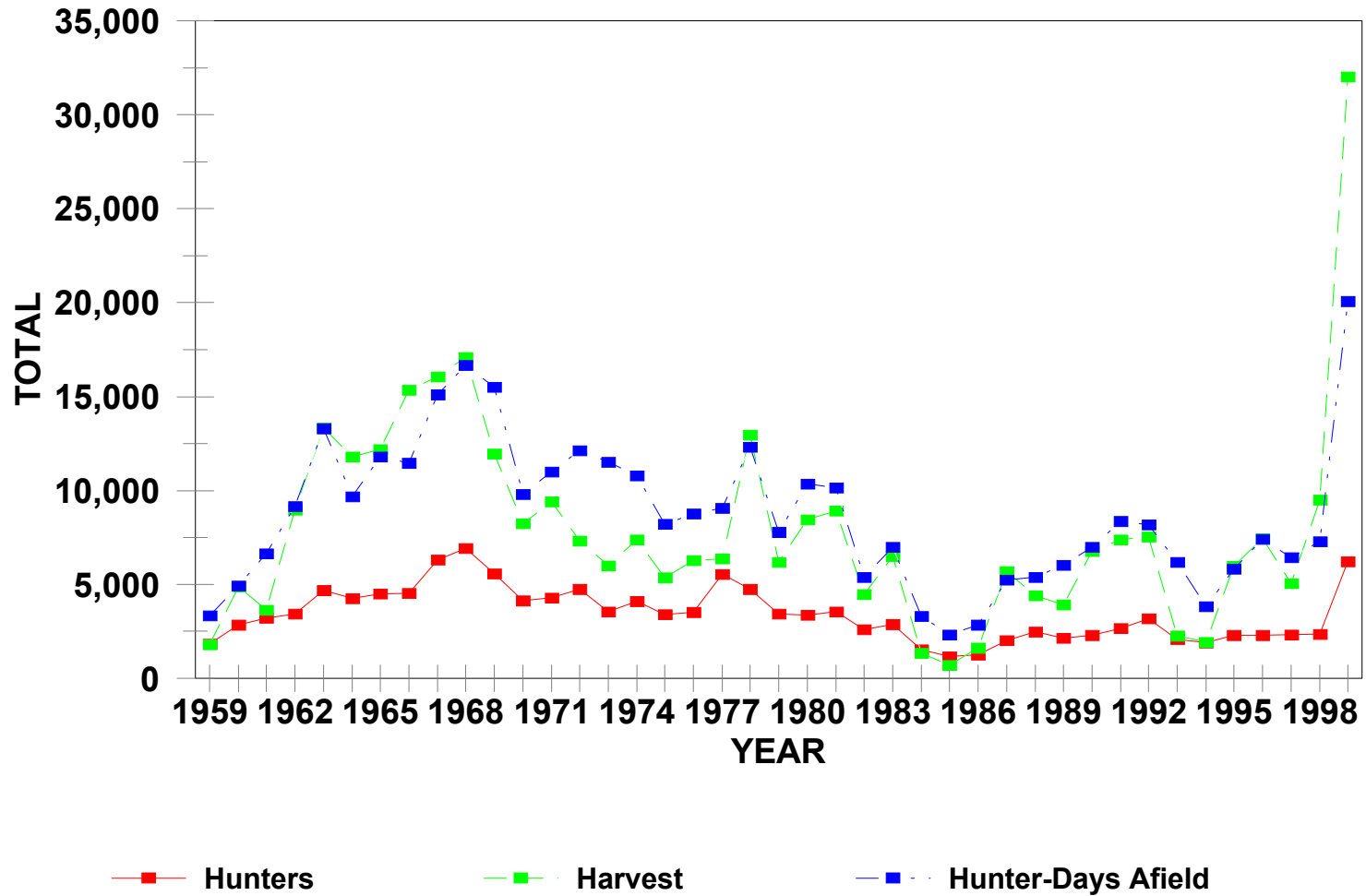
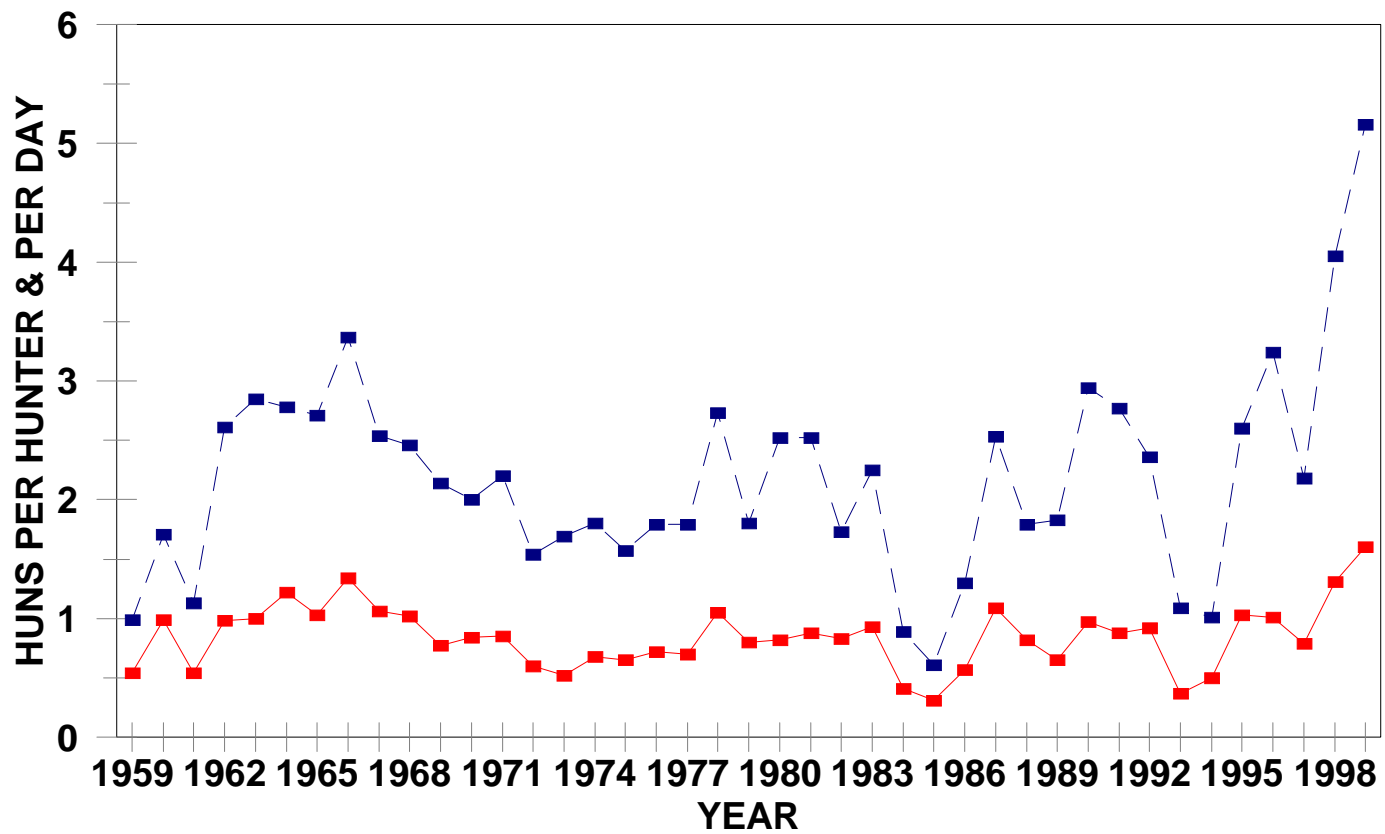


Figure 2. Statewide trends of Hun hunter success rates, 1959-99.



—■— Huns Per Hunter-Day —■— Huns Per Hunter

Table 1. Hungarian partridge summer inventory, 1999.

Region and County	Distinct Broods			Mean Brood	Mixed Young & Adults		Adults w/o Young	Total Adults	Total Young	Young/100 Adults	Vehicle		Hours of Effort			Birds/100 Hr
	#	Adults	Young		Adults	Young					Miles	Vehicle	Horse	Walk	Total	
Northern Region																
Box Elder	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Central Region																
Juab	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Southern Region																
Beaver																
Garfield																
Iron																
Kane																
Millard																
Piute																
Sevier																
Washington																
Wayne																
REGIONAL TOTALS																
Northeastern Region																
Daggett																
Duchesne																
Uintah																
REGIONAL TOTALS																
Southeastern Region																
Carbon																
Emery																
Grand																
San Juan																
REGIONAL TOTALS																
STATE TOTALS	0	0	0	ERR	0	0	0	0	0	ERR	--	--	0	--	0	ERR

Table 2. Trend of Hungarian partridge young per 100 adults, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	--	396	793	711	--	--	2,000	--	--	--	--	--
Cache	--	433	--	260	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	425	400	793	550	--	--	2,000	--	--	--	--	834
Central Region												
Juab	--	--	--	800	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	800	--	--	--	--	--	--	--	800
Southern Region												
Beaver												
Garfield												
Iron												
Kane												
Millard												
Piute												
Sevier												
Washington												
Wayne												
REGIONAL TOTALS												
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	750	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	750	--	--	--	--	--	--	750
Southeastern Region												
Carbon												
Emery												
Grand												
San Juan												
REGIONAL TOTALS												
STATE TOTALS	425	400	793	567	750	--	2,000	--	--	--	--	823

Table 3. Trend of average brood size for Hungarian partridge, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	8.50	8.25	12.50	9.00	--	--	20.00	--	--	--	--	--
Cache	--	6.00	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	8.50	8.90	12.50	9.00	--	--	20.00	--	--	--	--	11.78
Central Region												
Juab	--	--	--	8.00	--	--	--	--	--	--	--	--
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sanpete	--	--	--	--	--	--	--	--	--	--	--	--
Tooele	--	--	--	--	--	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	8.00	--	--	--	--	--	--	--	8.00
Southern Region												
Beaver												
Garfield												
Iron												
Kane												
Millard												
Piute												
Sevier												
Washington												
Wayne												
REGIONAL TOTALS												
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	--
Duchesne	--	--	--	--	--	--	--	--	--	--	--	--
Uintah	--	--	--	--	15.00	--	--	--	--	--	--	--
REGIONAL TOTALS	--	--	--	--	15.00	--	--	--	--	--	--	15.00
Southeastern Region												
Carbon												
Emery												
Grand												
San Juan												
REGIONAL TOTALS												
STATE TOTALS	8.50	8.90	12.50	8.83	15.00	--	20.00	--	--	--	--	12.29

Table 4. Trend of Hungarian partridge observed per 100 hours, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	--	529	327	96	--	--	175	--	--	--	--	
Cache	88	538	--	257	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	--	--	
Summit	--	--	--	--	--	--	--	--	--	--	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	88	517	327	110	--	--	175	--	--	--	--	243
Central Region												
Juab	--	--	--	450	--	--	--	--	--	--	--	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	--	--	--	--	--	--	--	--	--	--	--	
Tooele	--	--	--	--	--	--	--	--	--	--	--	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	450	--	--	--	--	--	--	--	450
Southern Region												
Beaver												
Garfield												
Iron												
Kane												
Millard												
Piute												
Sevier												
Washington												
Wayne												
REGIONAL TOTALS												
Northeastern Region												
Daggett	--	--	--	--	--	--	--	--	--	--	--	
Duchesne	--	--	--	--	--	--	--	--	--	--	--	
Uintah	--	--	--	--	8,500	--	--	--	--	--	--	
REGIONAL TOTALS	--	--	--	--	8,500	--	--	--	--	--	--	8,500
Southeastern Region												
Carbon												
Emery												
Grand												
San Juan												
REGIONAL TOTALS												
STATE TOTALS	88	517	327	118	40	--	175	--	--	--	--	211

Table 5. Summary of Hungarian partridge hunter success and distribution of harvest and hunting pressure by region and county, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	BIRDS BAGGED	BIRDS PER HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	247	15,940	28,637	1.80	79.45	89.39
CACHE	49	2,967	2,501	0.84	14.79	7.81
DAVIS	1	17	17	1.00	0.09	0.05
MORGAN	3	189	138	0.73	0.95	0.43
RICH	6	189	241	1.27	0.95	0.75
SUMMIT	1	69	17	0.25	0.34	0.05
WEBER	2	86	138	1.60	0.43	0.43
REGIONAL TOTALS	309	19,459	31,691	1.63	96.99	98.92
CENTRAL REGION						
JUAB	2	86	0	0.00	0.43	0.00
SALT LAKE	1	34	172	5.00	0.17	0.54
SANPETE	1	103	103	1.00	0.52	0.32
TOOELE	4	120	17	0.14	0.60	0.05
UTAH	3	138	34	0.25	0.69	0.11
WASATCH	1	17	17	1.00	0.09	0.05
REGIONAL TOTALS	12	500	345	0.69	2.49	1.08
SOUTHERN REGION						
BEAVER	1	34	0	0.00	0.17	0.00
GARFIELD	0	0	0	0.00	0.00	0.00
IRON	0	0	0	0.00	0.00	0.00
KANE	0	0	0	0.00	0.00	0.00
MILLARD	0	0	0	0.00	0.00	0.00
PIUTE	0	0	0	0.00	0.00	0.00
SEVIER	0	0	0	0.00	0.00	0.00
WASHINGTON	0	0	0	0.00	0.00	0.00
WAYNE	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	1	34	0	0.00	0.17	0.00
NORTHEASTERN REGION						
DAGGETT	0	0	0	0.00	0.00	0.00
DUCHESNE	1	17	0	0.00	0.09	0.00
UINTAH	1	51	0	0.00	0.26	0.00
REGIONAL TOTALS	2	69	0	0.00	0.34	0.00
SOUTHEASTERN REGION						
CARBON	0	0	0	0.00	0.00	0.00
EMERY	0	0	0	0.00	0.00	0.00
GRAND	0	0	0	0.00	0.00	0.00
SAN JUAN	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	0	0	0	0.00	0.00	0.00
Unknown	45	0	0	0.00	0.00	0.00
STATE TOTALS	369	20,063	32,036	1.60	100.00	100.00

* Total hunter-trips from questionnaire returns.

Table 6. Summary of Hungarian partridge bagged per hunter-day by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	1.00	0.24	0.47	1.26	0.99	0.86	1.26	1.80
Cache	1.07	0.56	0.80	0.95	1.15	0.63	1.28	0.84
Davis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Morgan	0.04	0.57	0.00	0.00	2.00	0.55	1.00	0.73
Rich	0.76	0.53	0.80	0.00	0.00	0.00	2.10	1.27
Summit	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.25
Weber	0.00	0.00	0.00	0.45	0.25	0.00	2.00	1.60
REGIONAL TOTALS	0.95	0.35	0.52	1.11	1.05	0.77	1.31	1.63
Central Region								
Juab	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salt Lake	1.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	5.00
Sanpete	0.00*	1.00*	0.00*	1.25*	1.00*	0.00	0.00	1.00
Tooele	0.25	0.50	1.50	0.00	0.00	1.00	0.50	0.14
Utah	0.67*	0.13*	0.00*	0.00*	0.25*	4.00	0.00	0.25
Wasatch	0.00*	0.00*	0.00*	0.50*	0.00*	0.00	0.00	1.00
REGIONAL TOTALS	0.40	0.23	0.50	0.40	0.43	1.29	0.50	0.69
Southern Region								
Beaver	2.00*	0.00*	0.00*	0.00*	0.78*	0.00	1.00	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*	1.00	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*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Piute	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Sevier	1.67*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Washington	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Wasatch	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
REGIONAL TOTALS	1.40	0.50	0.00	0.00	0.78	1.00	1.00	0.00
Northeastern Region								
Daggett	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Duchesne	0.00*	0.00*	0.00*	0.17*	0.00*	1.00	0.00	0.00
Uintah	0.00*	0.00*	0.00*	0.00*	0.00*	2.00	0.00	0.00
REGIONAL TOTALS	0.00	0.00	0.00	0.13	0.00	1.33	0.00	0.00
Southeastern Region								
Carbon	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Emery	0.00*	0.00*	0.00*	0.17*	0.00*	0.00	0.00	0.00
Grand	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
San Juan	0.00*	0.00*	0.00*	6.00*	0.00*	0.00	0.00	0.00
REGIONAL TOTALS	0.00	2.00	0.00	1.00	0.00	0.00	0.00	0.00
Unknown counties	10.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00
STATE TOTALS	0.92	0.37	0.50	1.03	1.01	0.79	1.31	1.60

*Closed Season

Table 7. Percentage distribution of Hungarian partridge harvest by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	61.41	33.34	55.97	62.87	52.96	67.63	67.97	89.39
Cache	30.59	37.51	33.95	29.97	39.88	24.18	21.03	7.81
Davis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Morgan	0.24	3.33	0.00	0.00	0.61	2.46	0.49	0.43
Rich	3.76	7.50	7.34	0.00	0.00	0.00	5.13	0.75
Summit	0.00	0.00	0.00	0.98	0.00	0.00	0.00	0.05
Weber	0.00	0.00	0.00	1.63	0.31	0.00	4.89	0.43
REGIONAL TOTALS	96.00	81.68	97.25	95.45	93.78	94.27	99.51	98.92
Central Region								
Juab	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salt Lake	0.24*	0.00	0.00*	0.00*	0.00*	0.00	0.00	0.54
Sanpete	0.00*	1.67	0.00*	1.63*	0.62*	0.00	0.00	0.32
Tooele	1.18	2.50	2.75	0.00	0.00	2.05	0.24	0.05
Utah	0.47*	3.33	0.00*	0.00*	0.31*	1.64	0.00	0.11
Wasatch	0.00*	0.00	0.00*	0.33*	0.00*	0.00	0.00	0.05
REGIONAL TOTALS	0.24	2.35	7.50	2.75	0.93	3.69	0.24	1.08
Southern Region								
Beaver	0.47*	0.00	0.00*	0.00*	2.18*	0.00	0.24	0.00
Garfield	0.00*	0.83	0.00*	0.00*	0.00*	0.00	0.00	0.00
Iron	0.00*	0.00*	0.00*	0.00	0.00*	0.41	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*	0.00*	0.00	0.00*	0.00	0.00	0.00
Piute	0.00*	0.00*	0.00*	0.00	0.00*	0.00	0.00	0.00
Sevier	1.18*	0.00	0.00*	0.00*	0.00*	0.00	0.00	0.00
Washington	0.00*	0.00*	0.00*	0.00	0.00*	0.00	0.00	0.00
Wayne	0.00*	0.00*	0.00	0.00	0.00*	0.00	0.00	0.00
REGIONAL TOTALS	1.65*	0.83	0.00	0.00	2.18	0.41	0.24	0.00
Northeastern Region								
Daggett	0.00*	0.00	0.00*	0.00*	0.00*	0.00	0.00	0.00
Duchesne	0.00*	0.00	0.00*	0.33*	0.00*	0.82	0.00	0.00
Uintah	0.00*	0.00	0.00*	0.00*	0.00*	0.82	0.00	0.00
REGIONAL TOTALS	0.00	0.00	0.00	0.33	0.00	1.64	0.00	0.00
Southeastern Region								
Carbon	0.00*	0.00	0.00*	0.00*	0.00*	0.00	0.00	0.00
Emery	0.00*	1.67	0.00*	0.33*	0.00*	0.00	0.00	0.00
Grand	0.00*	0.00	0.00*	0.00*	0.00*	0.00	0.00	0.00
San Juan	0.00*	0.00	0.00*	1.95*	0.00*	0.00	0.00	0.00
REGIONAL TOTALS	0.00	1.67	0.00	2.28	0.00	0.00	0.00	0.00
Unknown counties	0.00	8.33	0.00	0.00	3.12	0.00	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*Closed Season

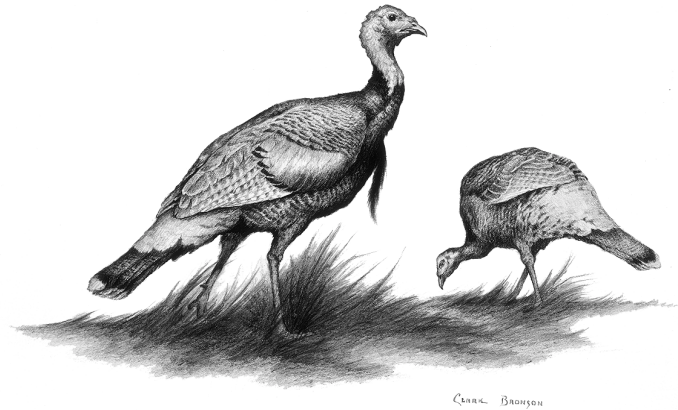
Table 8. Percentage distribution of Hungarian partridge hunting pressure by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	56.41	51.23	60.09	51.17	53.61	61.94	70.62	79.45
Cache	26.25	24.85	21.10	32.44	64.80	30.00	21.41	14.79
Davis	0.87	0.00	1.83	0.00	0.00	0.32	0.00	0.09
Morgan	5.21	2.15	1.83	0.00	0.31	3.55	0.64	0.95
Rich	4.56	5.22	4.59	0.00	0.00	0.32	3.20	0.95
Summit	0.00	0.92	0.92	1.00	0.00	0.00	0.00	0.34
Weber	0.00	2.15	2.29	3.68	1.25	0.32	3.20	0.43
REGIONAL TOTALS	93.29	86.52	92.67	88.30	89.97	96.46	99.05	96.99
Central Region								
Juab	0.22	0.31	0.46	0.33	0.00	0.32	0.00	0.43
Salt Lake	0.22*	0.31*	0.00*	0.00*	0.00*	0.00	0.00	0.17
Sanpete	0.00*	0.61*	0.92*	1.34*	0.63*	0.00	0.00	0.52
Tooele	4.34	1.84	0.92	0.67	0.00	1.61	0.64	0.60
Utah	0.65*	9.20*	0.46*	2.01*	1.25*	0.32	0.00	0.69
Wasatch	0.00*	0.00*	0.00*	0.67*	0.31*	0.00	0.00	0.09
REGIONAL TOTALS	5.42	12.27	2.75	5.02	2.19	2.26	0.64	2.49
Southern Region								
Beaver	0.22*	0.00*	0.46*	0.33*	2.82*	0.00	0.32	0.17
Garfield	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Iron	0.22*	0.00*	0.00*	0.00*	0.00*	0.32	0.00	0.00
Kane	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Millard	0.00*	0.61*	0.00*	0.00*	0.31*	0.00	0.00	0.00
Piute	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Sevier	0.65*	0.00*	0.46*	0.00*	0.00*	0.00	0.00	0.00
Washington	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Wayne	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
REGIONAL TOTALS	1.08	0.61	0.92	0.33	3.13	0.32	0.32	0.17
Northeastern Region								
Daggett	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Duchesne	0.00*	0.00*	1.38*	2.01*	0.94*	0.65	0.00	0.09
Uintah	0.22*	0.00*	1.46*	0.67*	0.00*	0.32	0.00	0.26
REGIONAL TOTALS	0.22	0.00	1.83*	2.68*	0.94	0.97	0.00	0.34
Southeastern Region								
Carbon	0.00*	0.00*	0.00*	0.00*	0.00*	0.00	0.00	0.00
Emery	0.00*	0.00*	1.83*	2.01*	0.00*	0.00	0.00	0.00
Grand	0.00*	0.31*	0.00*	0.00*	0.00*	0.00	0.00	0.00
San Juan	0.00*	0.00*	0.00*	0.33*	0.00*	0.00	0.00	0.00
REGIONAL TOTALS	0.00	0.31	1.83	2.34	0.00	0.00	0.00	0.00
Unknown counties	0.00	0.31	0.00	1.34	3.76	0.00	0.00	0.00
STATE TOTALS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*Closed Season

Table 9. Statewide summary of Hungarian partridge harvest statistics, 1955-99.

Year	Total Hunters	Total Harvest	Hunter-Days Afield	Huns Per Hunter-Day	Huns Per Hunter
1955	--	--	--	--	0.39
1956	--	--	--	--	0.89
1957	--	--	--	--	0.45
1958	--	--	--	--	1.34
1959	1,846	1,820	3,354	0.54	0.99
1960	2,847	4,877	4,929	0.99	1.71
1961	3,205	3,648	6,645	0.54	1.13
1962	3,440	8,970	9,153	0.98	2.61
1963	4,676	13,343	13,291	1.00	2.85
1964	4,249	11,812	9,688	1.22	2.78
1965	4,498	12,183	11,798	1.03	2.71
1966	4,549	15,348	11,473	1.34	3.37
1967	6,321	16,049	15,105	1.06	2.54
1968	6,935	17,089	16,674	1.02	2.46
1969	5,591	11,966	15,515	0.77	2.14
1970	4,128	8,236	9,818	0.84	2.00
1971	4,276	9,407	11,011	0.85	2.20
1972	4,754	7,335	12,135	0.60	1.54
1973	3,566	6,014	11,516	0.52	1.69
1974	4,103	7,389	10,789	0.68	1.80
1975	3,409	5,358	8,216	0.65	1.57
1976	3,517	6,287	8,753	0.72	1.79
1977	5,557	6,360	9,058	0.70	1.79
1978	4,743	12,969	12,328	1.05	2.73
1979	3,435	6,200	7,787	0.80	1.80
1980	3,359	8,466	10,366	0.82	2.52
1981	3,545	8,916	10,147	0.88	2.52
1982	2,590	4,475	5,379	0.83	1.73
1983	2,889	6,506	6,998	0.93	2.25
1984	1,523	1,360	3,309	0.41	0.89
1985	1,157	707	2,314	0.31	0.61
1986	1,257	1,627	2,843	0.57	1.30
1987	2,010	5,711	5,246	1.09	2.53
1988	2,471	4,424	5,392	0.82	1.79
1989	2,136	3,920	6,035	0.65	1.83
1990	2,305	6,770	6,976	0.97	2.94
1991	2,662	7,376	8,367	0.88	2.77
1992	3,198	7,553	8,192	0.92	2.36
1993	2,090	2,280	6,194	0.37	1.09
1994	1,899	1,916	3,832	0.50	1.01
1995	2,294	5,967	5,812	1.03	2.60
1996	2,299	7,455	7,409	1.01	3.24
1997	2,328	5,071	6,443	0.79	2.18
1998	2,350	9,515	7,281	1.31	4.05
1999	6,211	32,036	20,063	1.60	5.16
Totals (1959-99)	140,218	324,711	357,634	--	--
Averages (1959-98)	3,350	7,317	8,439	0.82	2.11



In 1994, the entire state went to limited entry turkey hunting for both the Merriam's and Rio Grande sub-species. Drawing success for each of the 1999 hunts is shown in Table 6.

Merriam's Turkeys

Merriam's turkey populations remain stable. A total of 358 permits were sold. A fall turkey hunting season was not held in Utah in 1998. A total of 95 Merriam's turkeys were harvested in 1998. Merriam's turkey hunters experienced a 31 percent success rate.

Rio Grande Turkeys

Two hundred sixty-three permits were sold in 1998. A total of 161 Rio Grande turkeys were harvested in 1998 for a success rate of 63 percent.

Conservation Permits

Beginning in 1997, Sealed-bid and Auction Turkey Permits were replaced by Conservation Permits. Under the new Conservation and Sportsman Permits Rule (R657-41), wildlife conservation organizations obtain permits, authorized by the Utah Wildlife Board, and use them in fund-raising activities to generate management funds for each species. Qualified wildlife conservation organizations typically keep 10 percent of funds generated for marketing, etc. Organizations, in some cases, can keep more than 10 percent of funds generated from permits if they propose habitat or management projects to benefit the species.

In 1999, the statewide turkey conservation permit was issued to the Utah Chapter National Wild Turkey Federation. The statewide turkey conservation permit allows the holder to hunt over an extended season on any open turkey unit in the state. In 1999, the statewide turkey conservation permit sold for \$1,194.50.

In 1999, nineteen area turkey conservation permits were issued to the Utah Chapter National Wild Turkey Federation and Sportsmen for Habitat. An area turkey conservation permit allows the holder to hunt over an extended season on one or a combination of open turkey units. In 1999, the area turkey conservation permits generated \$9,962.00.

Total turkey conservation permits funds generated in 1999 was \$11,156.50.

Harvest

Spring Merriam's Gobbler Season

Results of the 1999 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. Statewide summary of fall hunt statistics is in Table 3. The 1999 spring season survey compared to 1998 and the previous 31-year average follow:

	<u>1999</u>	<u>Percent change from 1998</u>	<u>Percent change from Average</u>
Permits sold	355	-1	+27
Hunters afield	327	+6	+30
Turkeys harvested	111	+17	+198
Hunter-days afield	1,188	-2	+48
Percent hunter success	34	+10	+157
Turkeys bagged per hunter-day	0.09	+12	+94
Percent of hunters who observed turkeys	84	+367	+98

Total harvest increased 17 percent from 1998. Hunter success rates increased 10 percent and was 157 percent above the long-term average.

Spring Rio Grande Gobbler Season

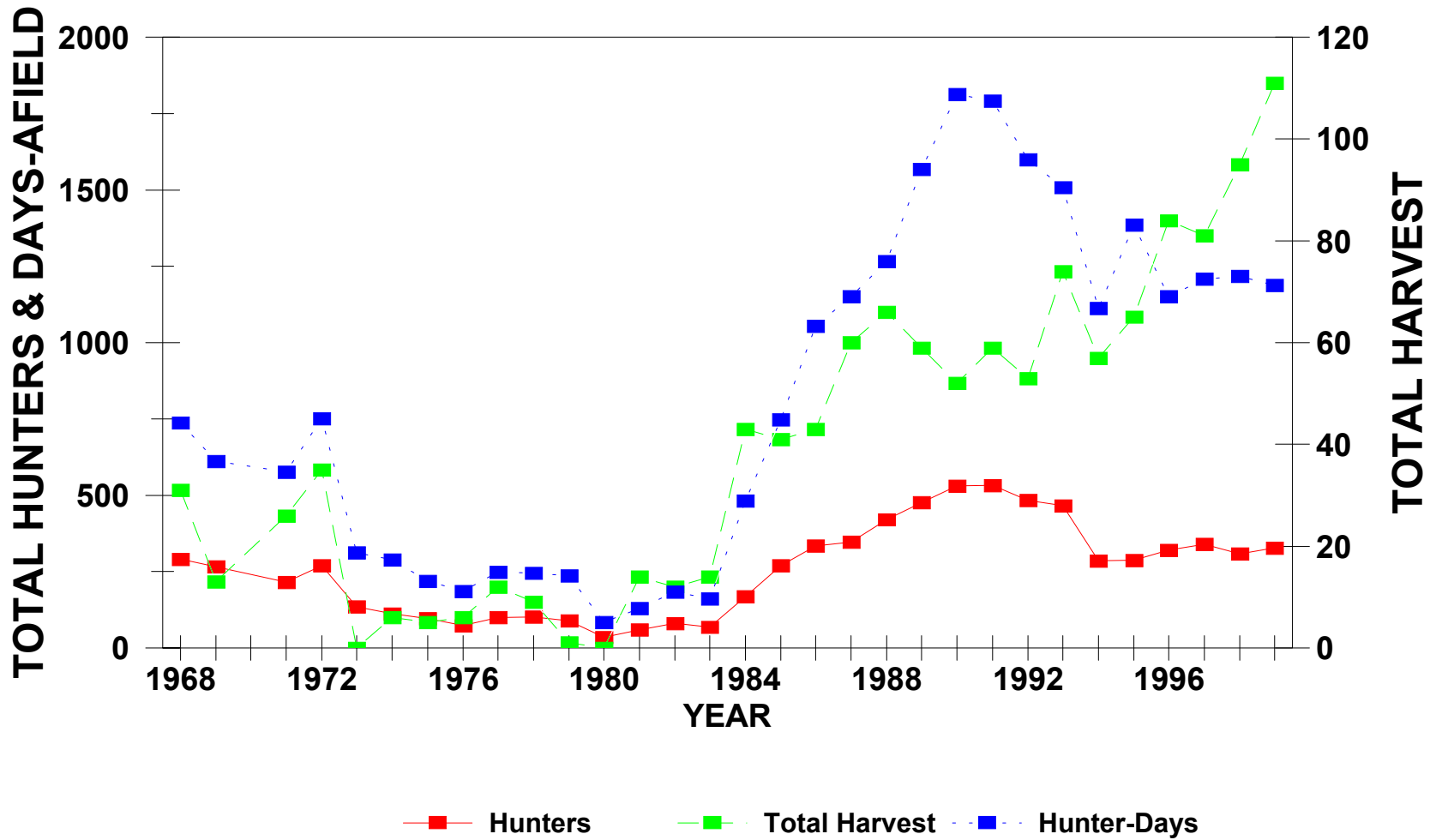
Results of the 1999 spring season are shown in Table 4 of this section. The trend of these data since 1991 is shown in Table 5. The 1999 spring season compared to 1998 and the previous 8-year average follows:

	<u>1999</u>	<u>Percent change from 1998</u>	<u>Percent change from Average</u>
Permits sold	398	+51	+218
Hunters afield	413	+63	+246
Turkeys harvested	289	+80	+283
Hunter-days afield	1,373	+49	+172
Percent hunter success	70	+11	+8
Turkeys bagged per hunter-day	0.21	+17	+32
Percent of hunters who observed turkeys	90	+58	+19

Four hundred thirteen hunters harvested a total of 289 turkeys. Seventy percent of the hunters afield harvested a bird.

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

Figure 1. Spring Merriam's wild turkey harvest statistics, 1968-99.



**Figure 2. Spring Merriam's wild turkey
hunting success, 1968-99.**

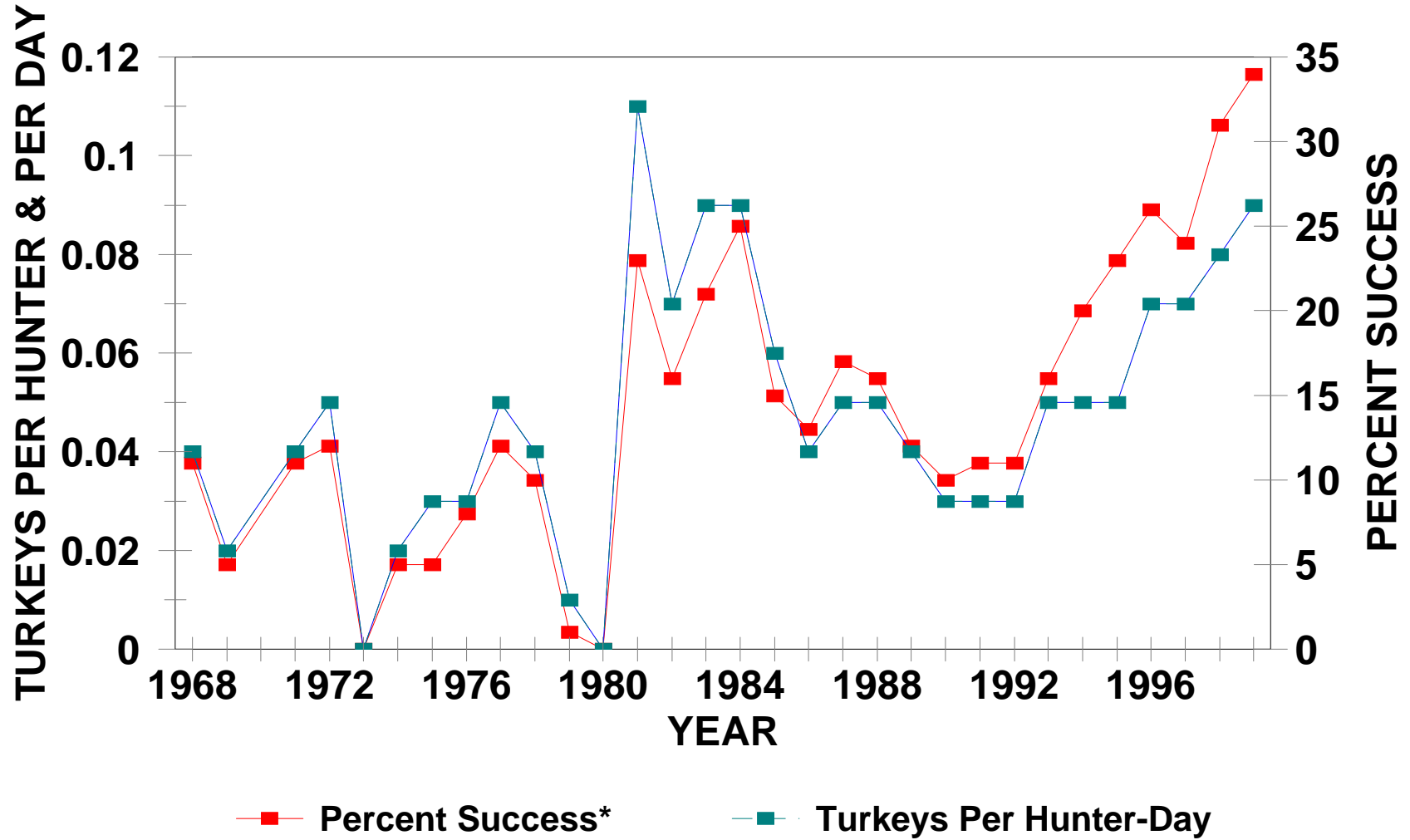


Table 1. Summary of the 1999 spring Merriam's turkey season.

	Boulder (early)	Boulder (late)	Conservation	Landowner	Unit Totals
Hunt Number	201a	201b	Permits	Permits	
Permits Sold	75	75			150
No Hunts	5	7			12
Hunters Afield	70	68	2		140
Total Hunter-Days	209	351	8		568
Average Hunter-Days Afield	3.0	5.2	4.0	ERR	4.1
Turkeys Bagged	32	13	0		45
Percent Success	46	19	0	ERR	32
Turkeys Bagged Per Hunter-Day	0.15	0.04	0.00	ERR	0.08
Reported Crippling Loss	1	1	0		2
(Loss/100 Bagged)	3	8	ERR	ERR	4
Turkeys Observed					
Gobblers	229	83	3		315
Hens	694	216	24		934
Unidentified	192	99	0		291
Total	1,115	398	27	0	1,540
Number of Hunters					
Who Saw Turkeys	51	37	2		90
Percent of Hunters					
Who Saw Turkeys	82.00	76.00	100.00		86.00
Percent of Hunters					
Who Saw Gobblers	73.00	47.00	100.00		73.33
Beard Length 0"-<4" (% of Harvest)	8.00	22.00			15.00
Beard Length 4"-7" (% of Harvest)	31.00	44.00			37.50
Beard Length >7" (% of Harvest)	62.00	33.00			47.50
Blunt Spur (% of Harvest)	18.00	44.00			31.00
Rounded Spur (% of Harvest)	71.00	44.00			57.50
Sharp Spur (% of Harvest)	11.00	11.00			11.00

Table 1. Summary of the 1999 spring Merriam's turkey season (continued).

	LaSal (early)	LaSal (late)	Conservation	Landowner	Unit Totals
Hunt Number	203a	203b	Permits	Permits	
Permits Sold	15	15			30
No Hunts	3	1			4
Hunters Afield	12	14	2		28
Total Hunter-Days	32	54	4		90
Average Hunter-Days Afield	2.7	3.9	2.0	ERR	3.2
Turkeys Bagged	5	5	2		12
Percent Success	42	36	100	ERR	43
Turkeys Bagged Per Hunter-Day	0.16	0.09	0.50	ERR	0.13
Reported Crippling Loss	1	0	0		1
(Loss/100 Bagged)	20	0	0	ERR	8
Turkeys Observed					
Gobblers	21	31	15		67
Hens	66	39	31		136
Unidentified	17	7	0		24
Total	104	77	46	0	227
Number of Hunters Who Saw Turkeys	11	8	2		21
Percent of Hunters Who Saw Turkeys	92.00	62.00	100.00		84.67
Percent of Hunters Who Saw Gobblers	75.00	62.00	100.00		79.00
Beard Length 0"-<4" (% of Harvest)	0.00	20.00	0.00		6.67
Beard Length 4"-7" (% of Harvest)	40.00	0.00	100.00		46.67
Beard Length >7" (% of Harvest)	60.00	80.00	0.00		46.67
Blunt Spur (% of Harvest)	20.00	0.00	0.00		6.67
Rounded Spur (% of Harvest)	40.00	100.00	100.00		80.00
Sharp Spur (% of Harvest)	40.00	0.00	0.00		13.33

Table 1. Summary of the 1999 spring Merriam's turkey season (continued).

	Zion (early)	Zion (late)	Conservation	Landowner	Unit Totals	STATE TOTALS
Hunt Number	204a	204b	Permits	Permits		
Permits Sold	75	100			175	355
No Hunts	7	10			17	33
Hunters Afield	68	90		1	159	327
Total Hunter-Days	211	315		4	530	1,188
Average Hunter-Days Afield	3.1	3.5	ERR	4.0	3.3	3.6
Turkeys Bagged	19	34		1	54	111
Percent Success	28	38	ERR	100	34	34
Turkeys Bagged Per Hunter-Day	0.09	0.11	ERR	0.25	0.10	0.09
Reported Crippling Loss (Loss/100 Bagged)	0	3		0	3	6
	0	9	ERR	0	6	5
Turkeys Observed						
Gobblers	207	135		4	346	728
Hens	440	225		20	685	1,755
Unidentified	62	58		20	140	455
Total	709	418	0	44	1,171	2,938
Number of Hunters						
Who Saw Turkeys	43	43		1	87	198
Percent of Hunters						
Who Saw Turkeys	75.00	72.00		100.00	82.33	84.33
Percent of Hunters						
Who Saw Gobblers	65.00	57.00		100.00	74.00	75.44
Beard Length 0"-<4" (% of Harvest)	0.00	23.00		0.00	7.67	9.78
Beard Length 4"-7" (% of Harvest)	38.00	32.00		0.00	23.33	35.83
Beard Length >7" (% of Harvest)	63.00	45.00		100.00	69.33	54.50
Blunt Spur (% of Harvest)	13.00	22.00		0.00	11.67	16.44
Rounded Spur (% of Harvest)	63.00	57.00		100.00	73.33	70.28
Sharp Spur (% of Harvest)	25.00	22.00		0.00	15.67	13.33

Table 2. Summary of Merrri: Table 2. Summary of Merrriam's turkey harvest statistics for spring gobbler seasons, 1968-99.

Hunting Unit	Hunting Unit	Year	Hunters Afield	Total Harvest	Hunter-Days Afield	Percent Success*	Turkeys Per Hunter-Day	Percent of Hunters Observing Turkeys	Total Permits**
STATE TOTALS	STATE TOTALS	1968	290	31	738	11	0.04	41	310
		1969	267	13	612	5	0.02	22	276
		1970				NO SEASON			
		1971	215	26	576	11	0.04	38	223
		1972	269	35	751	12	0.05	39	285
		1973	135	0	311	0	0.00	10	150
		1974	112	6	289	5	0.02	22	121
		1975	97	5	219	5	0.03	29	103
		1976	74	6	185	8	0.03	32	81
		1977	99	12	248	12	0.05	39	108
		1978	101	9	246	10	0.04	42	116
		1979	90	1	237	1	0.01	8	113
		1980	35	0	84	0	0.00	17	40
		1981	60	14	129	23	0.11	53	83
		1982	80	12	184	16	0.07	62	91
		1983	69	14	161	21	0.09	55	92
		1984	169	43	482	25	0.09	72	190
		1985	270	41	747	15	0.06	52	314
		1986	335	43	1,054	13	0.04	57	362
		1987	347	60	1,150	17	0.05	57	384
		1988	421	66	1,267	16	0.05	50	490
		1989	477	59	1,568	12	0.04	55	527
		1990	531	52	1,812	10	0.03	51	579
		1991	532	59	1,792	11	0.03	49	587
		1992	484	53	1,599	11	0.03	45	538
		1993	466	74	1,508	16	0.05	54	500
		1994***	285	57	1,112	20	0.05	--	335
		1995	287	65	1,386	23	0.05	40	335
		1996	320	84	1,151	26	0.07	78	355
		1997	339	81	1,208	24	0.07	87	362
		1998	309	95	1,218	31	0.08	18	358
		1999	327	111	1,188	34	0.09	84	355
STATE TOTALS (1968-99)	STATE TOTALS (1968-99)		7,892	1,227	25,212	--	--	--	8,763
STATE AVERAGES (1968-98)	STATE AVERAGES (1968-98)		252	37	801	13	0.05	42	280

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

**Total permits are sold on a statewide basis and not by unit, 1968-93. In 1994, permits were sold by unit.

***Beginning in 1994, a limited entry turkey hunting program was initiated.

Table 3. Statewide summary of fall Merriam's wild turkey harvest statistics, 1964-99.

Year	Permits Sold	Hunters Afield	Hunter-Days Afield	Turkeys Bagged	Percent Success**	Turkeys per Hunter-Day	Crippling Loss/100 Bagged	Turkeys Observed	Percent of Hunters Observing Turkeys
1964	229	211	362	81	38	0.22	15	1,158	60
1965	214	207	406	50	24	0.12	8	730	29
1966*	192	187	471	43	23	0.09	7	756	36
1967	146	135	405	40	30	0.10	16	748	48
1968*	368	344	883	183	38	0.21	15	2,321	54
1969	223	210	549	36	11	0.06	19	466	17
1970	197	174	418	58	24	0.14	6	564	31
1971	184	174	444	60	21	0.14	8	451	28
1972	124	118	303	12	7	0.04	10	173	21
1973***	--	--	--	--	--	--	--	--	--
1974	29	26	79	3	12	0.04	33	83	38
1975	58	46	115	7	15	0.06	0	57	26
1976	68	56	136	15	27	0.11	7	182	32
1977	60	53	133	7	15	0.06	0	48	18
1978*	102	88	223	7	9	0.03	33	335	38
1979	46	36	71	3	9	0.05	0	61	19
1980	43	35	69	11	32	0.16	38	127	44
1981	63	55	114	12	22	0.11	56	141	32
1982	56	50	136	11	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	49
1985***	--	--	--	--	--	--	--	--	--
1986***	--	--	--	--	--	--	--	--	--
1987***	--	--	--	--	--	--	--	--	--
1988***	--	--	--	--	--	--	--	--	--
1989***	--	--	--	--	--	--	--	--	--
1990***	--	--	--	--	--	--	--	--	--
1991***	--	--	--	--	--	--	--	--	--
1992***	--	--	--	--	--	--	--	--	--
1993***	--	--	--	--	--	--	--	--	--
1994***	--	--	--	--	--	--	--	--	--
1995***	--	--	--	--	--	--	--	--	--
1996***	--	--	--	--	--	--	--	--	--
1997***	--	--	--	--	--	--	--	--	--
1998***	--	--	--	--	--	--	--	--	--
1999***	--	--	--	--	--	--	--	--	--
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

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

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

*** No fall season.

**Figure 3. Spring Rio Grande turkey
harvest statistics, 1991-99.**

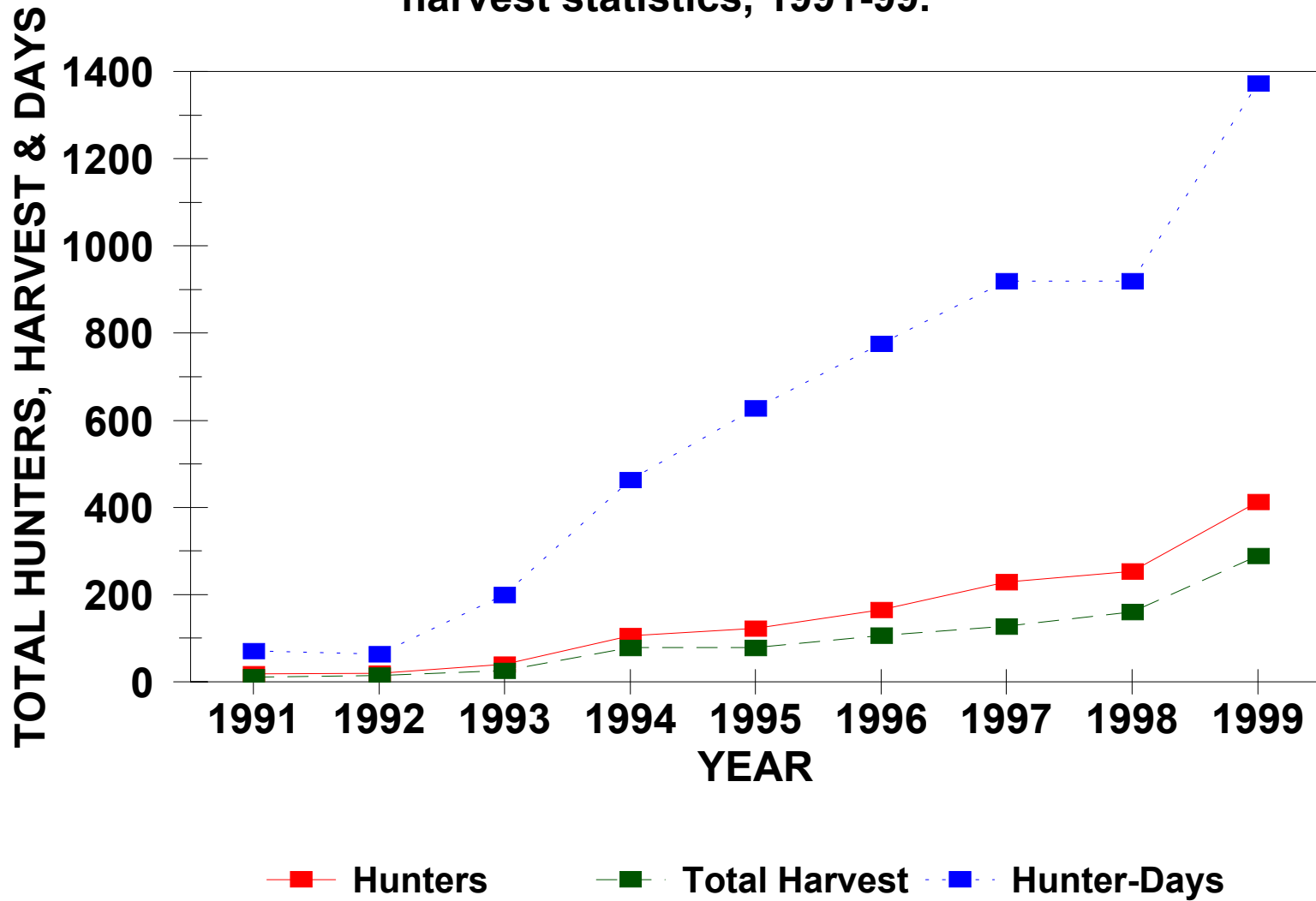


Figure 4. Spring Rio Grande turkey hunting success, 1991-99.

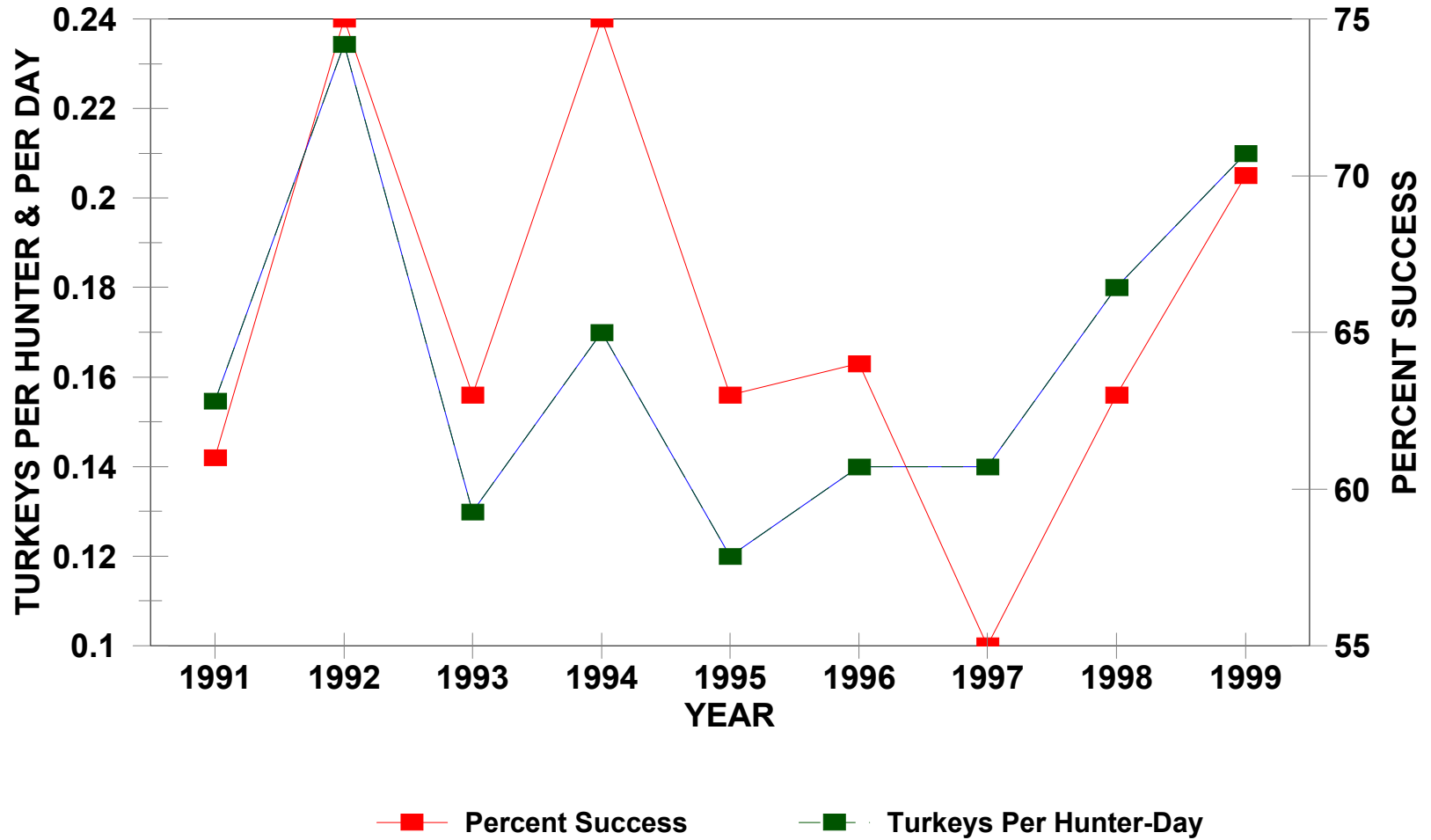


Table 4. Summary of the 1999 spring limited entry Rio Grande turkey season.

Hunt Number	Beaver (early) 101a	Beaver (late) 101b	Conservation Permits	Landowner Permits	Unit Totals	Duchesne County (early) 102a	Duchesne County (late) 102b	Conservation Permits	Landowner Permits	Unit Totals
Permits Sold	25	25			50	8	8			16
No Hunts	1	0			1	3	0			3
Hunters Afield	24	25			49	5	8	1		14
Hunter-Days	80	83			163	3	46	6		55
Turkeys Bagged	14	15			29	2	3	0		5
Percent Success	58	60	ERR	ERR	59	40	38	0	ERR	36
Turkeys Bagged Per Hunter-Day	0.18	0.18	ERR	ERR	0.18	0.67	0.07	0.00	ERR	0.09
Reported Crippling Loss (Loss/100 Bagged)	1	10			11	0	0	0		0
	7	67	ERR	ERR	38	0	0	ERR	ERR	0
Turkeys Observed										
Gobblers	118	92			210	1	48	2		51
Hens	239	151			390	0	71	6		77
Unidentified	74	46			120	0	7	0		7
Total	431	289	0	0	720	1	126	8	0	135
Percent of Hunters										
Who Saw Turkeys	96.00	90.00			93.00	33.00	100.00	100.00		77.67
Percent of Hunters										
Who Saw Gobblers	83.00	86.00			84.50	33.00	100.00	100.00		77.67
Beard Length 0"-<4" (% of Harvest)	18.00	8.00			13.00	0.00	33.00			16.50
Beard Length 4"-7" (% of Harvest)	27.00	46.00			36.50	100.00	0.00			50.00
Beard Length >7" (% of Harvest)	55.00	46.00			50.50	0.00	67.00			33.50
Blunt Spur (% of Harvest)	8.00	23.00			15.50	0.00	33.00			16.50
Rounded Spur (% of Harvest)	62.00	62.00			62.00	100.00	0.00			50.00
Sharp Spur (% of Harvest)	31.00	15.00			23.00	0.00	67.00			33.50

Table 4. Summary of the 1999 spring limited entry Rio Grande turkey season (continued).

Hunt Number	West Emery County	Conservation Permits	Landowner Permits	Unit Totals	Fillmore (early) 104a	Fillmore (late) 104b	Conservation Permits	Landowner Permits	Unit Totals
Permits Sold	5			5	20	20			40
No Hunts	0			0	2	1			3
Hunters Afield	5		1	6	18	19	2	8	47
Hunter-Days	12		2	14	56	51	4	39	150
Turkeys Bagged	5		1	6	14	16	2	7	39
Percent Success	100	ERR	100	100	78	84	100	88	83
Turkeys Bagged Per Hunter-Day	0.42	ERR	0.50	0.43	0.25	0.31	0.50	0.18	0.26
Reported Crippling Loss (Loss/100 Bagged)	0		0	0	2	0	0	0	2
	0	ERR	0	0	14	0	0	0	5
Turkeys Observed									
Gobblers	54		15	69	133	147	27	141	448
Hens	110		30	140	326	257	53	267	903
Unidentified	13		0	13	474	36	10	195	715
Total	177	0	45	222	933	440	90	603	2,066
Percent of Hunters Who Saw Turkeys	100.00		100.00	100.00	93.00	100.00	100.00	75.00	92.00
Percent of Hunters Who Saw Gobblers	100.00		100.00	100.00	71.00	100.00	100.00	75.00	86.50
Beard Length 0"-<4" (% of Harvest)	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beard Length 4"-7" (% of Harvest)	0.00		0.00	0.00	36.00	23.00	0.00	29.00	22.00
Beard Length >7" (% of Harvest)	100.00		100.00	100.00	64.00	77.00	100.00	71.00	78.00
Blunt Spur (% of Harvest)	0.00		0.00	0.00	9.00	17.00	0.00	0.00	6.50
Rounded Spur (% of Harvest)	60.00		100.00	80.00	55.00	50.00	50.00	86.00	60.25
Sharp Spur (% of Harvest)	40.00		0.00	20.00	36.00	33.00	50.00	14.00	33.25

Table 4. Summary of the 1999 spring limited entry Rio Grande turkey season (continued).

	Colorado River	Colorado River	Colorado River	Conservation	Landowner	Unit	Green River	Green River	Green River	Conservation	Landowner	Unit
	(A)	(B)	(C)	Permits	Permits	Totals	(A)	(B)	(C)	Permits	Permits	Totals
Hunt Number	105a	105b	105c				106a	106b	106c			
Permits Sold	8	8	8			24	5	5	5			15
No Hunts	0	0	1			1	0	0	0			0
Hunters Afield	8	8	7			23	5	5	5	2	3	20
Hunter-Days	13	20	23			56	8	9	16	14	9	56
Turkeys Bagged	8	5	5			18	5	3	5	2	0	15
Percent Success	100	63	71	ERR	ERR	78	100	60	100	100	0	75
Turkeys Bagged Per												
Hunter-Day	0.62	0.25	0.22	ERR	ERR	0.32	0.63	0.33	0.31	0.14	0.00	0.27
Reported Crippling Loss	0	0	6			6	0	0	0	0	1	1
(Loss/100 Bagged)	0	0	120	ERR	ERR	33	0	0	0	0	ERR	7
Turkeys Observed												
Gobblers	69	46	91			206	26	24	20	9	8	87
Hens	135	103	282			520	24	52	37	7	25	145
Unidentified	57	190	15			262	27	54	0	3	0	84
Total	261	339	388	0	0	988	77	130	57	19	33	316
Percent of Hunters												
Who Saw Turkeys	100.00	100.00	100.00			100.00	80.00	100.00	100.00	100.00	100.00	96.00
Percent of Hunters												
Who Saw Gobblers	86.00	88.00	100.00			91.33	80.00	80.00	100.00	100.00	100.00	92.00
Beard Length 0"-<4" (% of Harvest)	14.00	0.00	0.00			4.67	20.00	0.00	0.00	0.00	0.00	5.00
Beard Length 4"-7" (% of Harvest)	14.00	40.00	50.00			34.67	0.00	0.00	50.00	100.00	0.00	37.50
Beard Length >7" (% of Harvest)	71.00	60.00	50.00			60.33	80.00	100.00	50.00	0.00	0.00	57.50
Blunt Spur (% of Harvest)	14.00	20.00	50.00			28.00	0.00	0.00	0.00	0.00	0.00	0.00
Rounded Spur (% of Harvest)	29.00	40.00	25.00			31.33	20.00	33.00	50.00	0.00	0.00	25.75
Sharp Spur (% of Harvest)	57.00	40.00	25.00			40.67	80.00	67.00	50.00	100.00	0.00	74.25

Table 4. Summary of the 1999 spring limited entry Rio Grande turkey season (continued).

	Milford*	Monroe Mountain	Conservation Permits	Landowner Permits	Unit Totals	Morgan- South Rich	Conservation Permits	Landowner Permits	Unit Totals
Hunt Number	107	108				109			
Permits Sold	C	5			5	5			5
No Hunts	L	2			2	2			2
Hunters Afield	O	3	2		5	3			3
Hunter-Days	S	20	10		30	3			3
Turkeys Bagged	E	1	0		1	2			2
Percent Success	D	33	0	ERR	20	67	ERR	ERR	67
Turkeys Bagged Per Hunter-Day		0.05	0.00	ERR	0.03	0.67	ERR	ERR	0.67
Reported Crippling Loss (Loss/100 Bagged)		0	0	ERR	0	0	ERR	ERR	0
Turkeys Observed									
Gobblers		2	2		4	3			3
Hens		0	20		20	4			4
Unidentified		0	0		0	0			0
Total		2	22	0	24	7	0	0	7
Percent of Hunters Who Saw Turkeys		100.00	100.00		100.00	50.00			50.00
Percent of Hunters Who Saw Gobblers		100.00	100.00		100.00	50.00			50.00
Beard Length 0"-<4" (% of Harvest)		0.00			0.00	0.00			0.00
Beard Length 4"-7" (% of Harvest)		100.00			100.00	0.00			0.00
Beard Length >7" (% of Harvest)		0.00			0.00	100.00			100.00
Blunt Spur (% of Harvest)		0.00			0.00	0.00			0.00
Rounded Spur (% of Harvest)		100.00			100.00	100.00			100.00
Sharp Spur (% of Harvest)		0.00			0.00	0.00			0.00

Table 4. Summary of the 1999 spring limited entry Rio Grande turkey season (continued).

	Ogden	Conservation	Landowner	Unit	Pine Valley	Pine Valley	Conservation	Landowner	Unit	San Juan	San Juan	Conservation	Landowner	Unit
		Permits	Permits	Totals	(early)	(late)	Permits	Permits	Totals	(early)	(late)	Permits	Permits	Totals
					111a	111b				112a	112b			
Hunt Number	110													
Permits Sold	15			15	25	25			50	20	20			40
No Hunts	1			1	0	1			1	2	1			3
Hunters Afield	14			14	25	24	2	1	52	18	19	1		38
Hunter-Days	94			94	70	81	2	5	158	43	63	1		107
Turkeys Bagged	9			9	20	17	2	1	40	18	16	1		35
Percent Success	64	ERR	ERR	64	80	71	100	100	77	100	84	100	ERR	92
Turkeys Bagged Per														
Hunter-Day	0.10	ERR	ERR	0.10	0.29	0.21	1.00	0.20	0.25	0.42	0.25	1.00	ERR	0.33
Reported Crippling Loss	0			0	6	0	0	0	6	1	3	0		4
(Loss/100 Bagged)	0	ERR	ERR	0	30	0	0	0	15	6	19	0	ERR	11
Turkeys Observed														
Gobblers	186			186	170	110	15	10	305	266	123	80		469
Hens	257			257	383	150	15	20	568	525	128	100		753
Unidentified	34			34	21	17	20	0	58	97	112	100		309
Total	477	0	0	477	574	277	50	30	931	888	363	280	0	1,531
Percent of Hunters														
Who Saw Turkeys	77.00			77.00	95.00	100.00	100.00	100.00	98.75	100.00	100.00	100.00		100.00
Percent of Hunters														
Who Saw Gobblers	77.00			77.00	95.00	95.00	100.00	100.00	97.50	100.00	92.00	100.00		97.33
Beard Length 0"-<4" (% of Harvest)	0.00			0.00	22.00	21.00	0.00	100.00	35.75	12.00	9.00	0.00		7.00
Beard Length 4"-7" (% of Harvest)	38.00			38.00	28.00	36.00	0.00	0.00	16.00	18.00	27.00	0.00		15.00
Beard Length >7" (% of Harvest)	63.00			63.00	50.00	43.00	100.00	0.00	48.25	71.00	64.00	100.00		78.33
Blunt Spur (% of Harvest)	13.00			13.00	17.00	14.00	0.00	100.00	32.75	24.00	9.00	0.00		11.00
Rounded Spur (% of Harvest)	38.00			38.00	61.00	50.00	0.00	0.00	27.75	65.00	82.00	100.00		82.33
Sharp Spur (% of Harvest)	50.00			50.00	22.00	36.00	100.00	0.00	39.50	12.00	11.00	0.00		7.67

Table 4. Summary of the 1999 spring limited entry Rio Grande turkey season (continued).

Hunt Number	Uintah County (early) 113a	Uintah County (late) 113b	Conservation Permits	Landowner Permits	Unit Totals	No. Utah County (A) 114a	No. Utah County (B) 114b	No. Utah County (C) 114c	Conservation Permits	Landowner Permits	Unit Totals
Permits Sold	8	8			16	25	20	20			65
No Hunts	0	0			0	1	2	3			6
Hunters Afield	8	8	1		17	24	18	17		6	65
Hunter-Days	14	21	1		36	76	59	61		32	228
Turkeys Bagged	4	7	1		12	14	11	8		5	38
Percent Success	50	88	100	ERR	71	58	61	47	ERR	83	58
Turkeys Bagged Per Hunter-Day	0.29	0.33	1.00	ERR	0.33	0.18	0.19	0.13	ERR	0.16	0.17
Reported Crippling Loss (Loss/100 Bagged)	0	1	0		1	1	1	2		2	6
	0	14	0	ERR	8	7	9	25	ERR	40	16
Turkeys Observed											
Gobblers	12	46	4		62	145	109	65		32	351
Hens	37	43	4		84	278	228	149		118	773
Unidentified	10	8	0		18	1	43	43		4	91
Total	59	97	8	0	164	424	380	257	0	154	1,215
Percent of Hunters											
Who Saw Turkeys	75.00	86.00	100.00		87.00	95.00	94.00	100.00		100.00	97.25
Percent of Hunters											
Who Saw Gobblers	50.00	86.00	100.00		78.67	89.00	94.00	92.00		100.00	93.75
Beard Length 0"-<4" (% of Harvest)	0.00	17.00	0.00		5.67	9.00	0.00	0.00		0.00	2.25
Beard Length 4"-7" (% of Harvest)	25.00	17.00	0.00		14.00	27.00	20.00	17.00		33.00	24.25
Beard Length >7" (% of Harvest)	75.00	67.00	100.00		80.67	64.00	80.00	83.00		67.00	73.50
Blunt Spur (% of Harvest)	0.00	0.00	0.00		0.00	10.00	0.00	0.00		0.00	2.50
Rounded Spur (% of Harvest)	25.00	33.00	0.00		19.33	50.00	70.00	100.00		50.00	67.50
Sharp Spur (% of Harvest)	75.00	67.00	100.00		80.67	40.00	30.00	0.00		50.00	30.00

Table 4. Summary of the 1999 spring limited entry Rio Grande turkey season (continued).

Hunt Number	So. Utah County (A) 115a	So. Utah County (B) 115b	So. Utah County (C) 115c	Conservation Permits	Landowner Permits	Unit Totals	Wasatch County 116	Conservation Permits	Landowner Permits	Unit Totals
Permits Sold	8	8	8			24	10			10
No Hunts	0	0	0			0	1			1
Hunters Afield	8	8	8	3	4	31	9			9
Hunter-Days	24	30	35	24	10	123	41			41
Turkeys Bagged	3	6	5	3	1	18	3			3
Percent Success	38	75	63	100	25	58	33	ERR	ERR	33
Turkeys Bagged Per Hunter-Day	0.13	0.20	0.14	0.13	0.10	0.15	0.07	ERR	ERR	0.07
Reported Crippling Loss (Loss/100 Bagged)	1	1	0	0	0	2	0			0
	33	17	0	0	0	11	0	ERR	ERR	0
Turkeys Observed										
Gobblers	67	41	60	20	14	202	54			54
Hens	91	93	51	15	34	284	52			52
Unidentified	19	15	0	10	3	47	41			41
Total	177	149	111	45	51	533	147	0	0	147
Percent of Hunters										
Who Saw Turkeys	100.00	100.00	100.00	100.00	100.00	100.00	88.00			88.00
Percent of Hunters										
Who Saw Gobblers	100.00	100.00	100.00	100.00	100.00	100.00	88.00			88.00
Beard Length 0"-<4" (% of Harvest)	0.00	0.00	0.00	0.00	0.00	0.00	67.00			67.00
Beard Length 4"-7" (% of Harvest)	0.00	20.00	60.00	100.00	0.00	36.00	0.00			0.00
Beard Length >7" (% of Harvest)	100.00	80.00	40.00	0.00	100.00	64.00	33.00			33.00
Blunt Spur (% of Harvest)	0.00	0.00	40.00	100.00	0.00	28.00	33.00			33.00
Rounded Spur (% of Harvest)	0.00	40.00	0.00	0.00	100.00	28.00	33.00			33.00
Sharp Spur (% of Harvest)	100.00	60.00	60.00	0.00	0.00	44.00	33.00			33.00

Table 4. Summary of the 1999 spring limited entry Rio Grande turkey season (continued).

	West Pine Valley	Paunsaugunt	Conservation Permits	Landowner Permits	Unit Totals	Juab	Conservation Permits	Landowner Permits	Unit Totals	Caineville	Conservation Permits	Landowner Permits	Unit Totals	STATE TOTALS
Hunt Number	117	118				119				120				
Permits Sold	C	5			5	10			10	3			3	398
No Hunts	L	0			0	0			0	0			0	24
Hunters Afield	O	5			5	10		2	12	3			3	413*
Hunter-Days	S	16			16	21		9	30	13			13	1,373
Turkeys Bagged	E	5			5	9		2	11	3			3	289
Percent Success	D	100	ERR	ERR	100	90	ERR	100	92	100	ERR	ERR	100	ERR
Turkeys Bagged Per Hunter-Day		0.31	ERR	ERR	0.31	0.43	ERR	0.22	0.37	0.23	ERR	ERR	0.23	0.21
Reported Crippling Loss (Loss/100 Bagged)		0			0	0		0	0	1			1	0
		0	ERR	ERR	0	0	ERR	0	0	33	ERR	ERR	33	0
Turkeys Observed														
Gobblers		29			29	57		20	77	3			3	2,816
Hens		53			53	60		40	100	8			8	5,131
Unidentified		10			10	8		0	8	80			80	1,897
Total		92	0	0	92	125	0	60	185	91	0	0	91	9,844
Percent of Hunters Who Saw Turkeys		100.00			100.00	100.00		100.00	100.00	67.00			67.00	90.20
Percent of Hunters Who Saw Gobblers		100.00			100.00	100.00		100.00	100.00	33.00			33.00	85.96
Beard Length 0"-<4" (% of Harvest)		0.00			0.00	0.00		0.00	0.00	0.00			0.00	8.71
Beard Length 4"-7" (% of Harvest)		20.00			20.00	40.00		0.00	20.00	0.00			0.00	25.77
Beard Length >7" (% of Harvest)		80.00			80.00	60.00		100.00	80.00	100.00			100.00	65.59
Blunt Spur (% of Harvest)		20.00			20.00	17.00		0.00	8.50	0.00			0.00	11.96
Rounded Spur (% of Harvest)		40.00			40.00	33.00		0.00	16.50	67.00			67.00	51.60
Sharp Spur (% of Harvest)		40.00			40.00	50.00		100.00	75.00	33.00			33.00	36.53

* Includes Conservation permit holders.

Table 5. Summary of Rio Grande turkey harvest statistics for spring gobbler seasons, 1991-99.

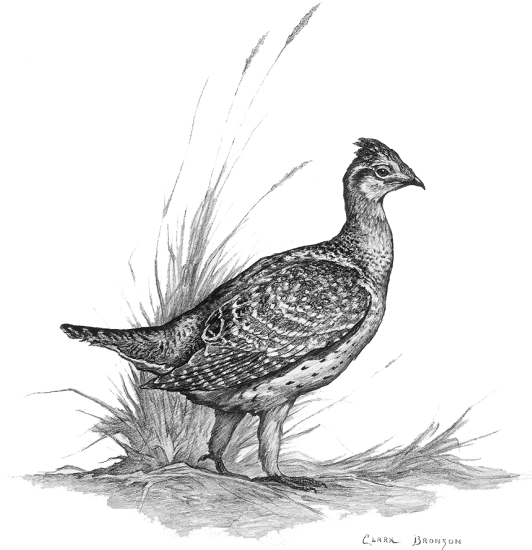
Hunting Unit	Year	Hunters Afield*	Total Harvest	Hunter-Days Afield	Percent Success	Turkeys Per Hunter-Day	Percent of Hunters Observing Turkeys	Total Limited Entry Permits
STATE TOTALS	1991	18	11	71	61	0.15	--	20
	1992	20	15	64	75	0.23	--	21
	1993	41	26	200	63	0.13	--	42
	1994	105	79	464	75	0.17	--	105
	1995	123	78	628	63	0.12	--	135
	1996	166	107	776	64	0.14	88	174
	1997	229	127	920	55	0.14	81.53	240
	1998	254	161	919	63	0.18	57	263
	1999	413	289	1,373	70	0.21	90.2	398
	STATE TOTALS (1991-99)		1,369	893	5,415	--	--	--
STATE AVERAGES (1991-98)		120	76	505	65	0.16	75.51	125

* Includes limited entry, conservation and landowner permittees.

Table 6. Summary of wild turkey limited entry hunting unit drawing success for 1999.

Hunt Name	Hunt Number	Permits Available	Resident Applicants	Nonresident Applicants	Total Applicants	Draw Success
BEAVER (EARLY)	T101A	25	186	4	190	7.60
BEAVER (LATE)	T101B	25	101	1	102	4.08
DUCHESNE (EARLY)*	T102A	8	34	0	34	4.25
DUCHESNE (LATE)*	T102B	8	13	0	13	1.63
WEST EMERY COUNTY*	T103	5	49	3	52	10.40
FILLMORE (EARLY)	T104A	20	335	5	340	17.00
FILLMORE (LATE)	T104B	20	217	3	220	11.00
COLORADO RIVER (A)*	T105A	8	34	4	38	4.75
COLORADO RIVER (B)*	T105B	8	26	4	30	3.75
COLORADO RIVER (C)*	T105C	8	5	2	7	0.88
GREEN RIVER (A)*	T106A	5	20	1	21	4.20
GREEN RIVER (B)*	T106B	5	25	1	26	5.20
GREEN RIVER (C)*	T106C	5	9	0	9	1.80
MONROE MOUNTAIN	T108	5	22	0	22	4.40
MORGAN-SOUTH RICH*	T109	5	11	0	11	2.20
OGDEN	T110	15	298	0	298	19.87
PINE VALLEY (EARLY)*	T111A	25	155	3	158	6.32
PINE VALLEY (LATE)*	T111B	25	54	8	62	2.48
SAN JUAN (EARLY)	T112A	20	130	3	133	6.65
SAN JUAN (LATE)	T112B	20	79	2	81	4.05
UINTAH COUNTY (EARLY)*	T113A	8	43	0	43	5.38
UINTAH COUNTY (LATE)*	T113B	8	27	0	27	3.38
UTAH COUNTY NORTH (A)	T114A	25	322	3	325	13.00
UTAH COUNTY NORTH (B)	T114B	20	149	0	149	7.45
UTAH COUNTY NORTH (C)	T114C	20	91	1	92	4.60
UTAH COUNTY SOUTH (A)	T115A	8	86	0	86	10.75
UTAH COUNTY SOUTH (B)	T115B	8	77	0	77	9.63
UTAH COUNTY SOUTH (C)	T115C	8	36	0	36	4.50
WASATCH COUNTY	T116	10	125	0	125	12.50
PAUNSAUGUNT	T118	5	13	2	15	3.00
JUAB	T119	10	57	3	60	6.00
CAINEVILLE	T120	3	9	0	9	3.00
RIO GRANDE TOTALS		398	2838	53	2891	7.26
BOULDER MOUNTAIN (EARLY)	T201A	75	273	4	277	3.69
BOULDER MOUNTAIN (LATE)	T201B	75	154	0	154	2.05
LASAL (EARLY)	T203A	15	41	1	42	2.80
LASAL (LATE)	T203B	15	48	1	49	3.27
ZION (EARLY)	T204A	75	100	6	106	1.41
ZION (LATE)	T204B	100	109	5	114	1.14
MERRIAM'S TOTALS		355	725	17	742	2.09
TOTAL		753	3563	70	3633	4.82

Undersubscribed



Sharp-tailed Grouse

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

Annual lek count survey data from 1979-99 is found in Table 1.

There was no legal harvest of sharp-tailed grouse from 1980 through 1997.

In 1998, as a result of intensive lek location surveys conducted in 1997 and 1998, a conservative, limited entry hunting season was offered. The hunt occurred in eastern Box Elder County in Northern Utah. The hunt strategy was designed to allow for the take of no more than 10-15 percent of the total fall population of sharptails. In 1999, a total of 663 two-bird permits were offered through a drawing and first come-first served after the drawing. A total of 381 permits were sold. Three hundred thirty-two hunters went afield and harvested 413 sharptails. Harvest statistics for 1998-99 are found in Table 3.

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.

Sharp-tailed grouse brood count information for Box Elder County in 1999 is shown in Table 2.

Table 1. Lek counts of Columbian Sharp-tailed Grouse in Utah.

State Summary: Sharp-tailed Grouse Lek Count Data

Lek Name and Number	Maximum Cocks Counted																			Average			
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	
Box Elder County																							
1 West Hills Complex	15	4	12	0	14	0	18	46	40	33	40	75	53	55	5	6	0	5	0		57	23.9	
2 North White's Valley #1		0		6			2		18	11	9	8	14	5	2	8	8	4			12	7.6	
3 North White's Valley #2													10	32	3	7	18	5	22		24	15.1	
4 Hunsaker's - South White's Valley	3						2	0	6	7	3	13	3	13	4	2		2	1		4	4.5	
5 Pocatello Valley Complex	7	7	19	19	14	5	9	20	20	19	16	11	4			2	0				8	11.3	
6 Middle Canyon													9	14	2	6	11	19	15	33	67	19.6	
7 Blue Creek													6	5	Active	Active						2.8	
8 Howell													13	6								9.5	
9 Microwave								6	6	7	9	6										6.8	
10 Sunset													8	2								5.0	
11 Nucor													11	6	Active						27	11.0	
12 Wellsville													8	8	3	2	0					4.2	
13 Snowville													8	8	Active							4.0	
14 Nucor #1																				12	19	15.5	
15 Golden Spike #1																				15	16	15.5	
16 Golden Spike #2																				14	35	24.5	
17 Golden Spike #3																					12	12.0	
18 Golden Spike #4																					17	20	18.5
19 North Hansel Mountain #1																					18	21	19.5
20 North Hansel Mountain #2																				20	Active	10.0	
21 North Hansel Mountain #3																				13	28	20.5	
22 North Hansel Mountain #4																				9	5	7.0	
23 North Hansel Mountain #5																				8	Active	4.0	
24 Middle Canyon #1																				22	20	21.0	
25 Middle Canyon #2																				13	18	15.5	
26 Middle Canyon #3																				9	12	10.5	
27 Middle Canyon #4																				33	48	40.5	
28 North Promontory #1																				11	11	11.0	
29 North Promontory #2																				32	18	25.0	
30 North Promontory #3																				19	16	17.5	
31 North Promontory #4																				26	16	21.0	
32 North Promontory #5																				18	4	11.0	
33 Blue Springs Hills #1																					6	6.0	
34 Blue Springs Hills #2																					12	12.0	
35 Short Divide #1																					21	21.0	
36 Short Divide #2																					8	8.0	
Cache County																							
1 Bankhead Well	2	2																				2.0	
2 Baxter Ridge		3	5	3																		3.7	
3 Crow Mountain	13	4	11	3									27	18	9	8					9	11.3	
4 High Creek			7										22			13		30			Active	14.4	
5 Clarkston (Old)													20	5	Active	12						9.3	
6 Four Mile Complex														9	27			13				14.8	
7 Clarkston #1																					11	11.0	
8 Clarkston #2																					9	9.0	
Weber County																							
1 Monastary	3																					3.0	
Morgan County																							
1 Cottonwood #1	3																					3.0	
2 Cottonwood #2	25																					25.0	
3 Deep Creek		4																				4.0	
4 Bohman Hollow													11						0			5.5	
State Total:	71	24	54	31	28	5	31	72	90	77	77	113	227	178	53	60	37	82	42	342	604		
Leks Counted	8	7	5	5	2	2	4	4	5	5	5	5	16	14	7	10	6	8	5	18	32		
State Average:	8.9	3.4	10.8	6.2	14.0	2.5	7.8	18.0	18.0	15.4	15.4	22.6	14.2	12.7	7.6	6.0	6.2	10.3	8.4	19.0	18.9	12.4	

Table 2. Sharp-tailed grouse summer inventory, 1999.

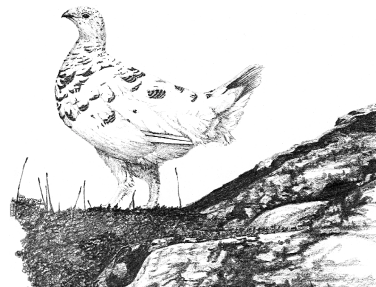
Region and County	Distinct Broods			Mean Brood	Mixed Young & Adults		Adults w/o Young	Total Adults	Total Young	Total Grouse	Young/100 Adults	Vehicle		Hours of Effort			Birds/100 Hr
	#	Adults	Young		Adults	Young						Miles	Vehicle	Horse	Walk	Total	
Northern Region																	
Box Elder	9	9	49	5.44	21	0	13	30	49	92	163	--	--	17	--	17	541
Cache	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rich	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summit	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REGIONAL TOTALS	9	9	49	5.44	21	0	13	30	49	92	163	0	0	17	0	17	541
Central Region																	
Juab																	
Salt Lake																	
Sanpete																	
Tooele																	
Utah																	
Wasatch																	
REGIONAL TOTALS																	
Southern Region																	
Beaver																	
Garfield																	
Iron																	
Kane																	
Millard																	
Piute																	
Sevier																	
Washington																	
Wayne																	
REGIONAL TOTALS																	
Northeastern Region																	
Daggett																	
Duchesne																	
Uintah																	
REGIONAL TOTALS																	
Southeastern Region																	
Carbon																	
Emery																	
Grand																	
San Juan																	
REGIONAL TOTALS																	
STATE TOTALS	9	9	49	5.44	21	0	13	43	49	92	114	0	0	17	0	17	541

Table 3. Summary of Sharp-tailed Grouse harvest statistics, 1998-99. Estimates are calculated based upon projection factors.

Year	Permits Sold	Hunters Afield	Hunter-Days Afield	Total Harvest	Birds Per Hunter	Birds Per Hunter-Day	Crippling Loss/100 Bagged	Grouse Observed	% Hunters Observing Grouse
1998	378	235	373	172	0.73	0.46	13	3,549	93.71
1999	381	332	584	413	1.24	0.71	15	6,597	98.78
STATE TOTALS (1998-99)	759	567	957	585	--	--	--	10,146	--
STATE AVERAGES (1998)	378	235	373	172	0.73	0.46	13	3,549	93.71

Projection Factor = **2.026596 (NUMBER OF PERMITS ISSUED/NUMBER OF QUESTIONNAIRES RETURNED)**
381 PERMITS SOLD
188 QUESTIONNAIRES RETURNED
49% QUESTIONNAIRE RETURN RATE

White-tailed Ptarmigan



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.

Since introduction in 1976, ptarmigan have dispersed into available habitat from the west, 100 miles to the east in the Uinta Mountains.

Breeding Territory and Brood Surveys

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

These surveys have not been conducted over the past several years due to the remoteness of ptarmigan habitat and other constraints on biologist's time.

Harvest

Ninety hunters obtained free permits to hunt ptarmigan in Utah in 1999 (Table 3). An estimated 34 hunters actually pursued ptarmigan and 23 birds were killed.

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

Results of the 1999 season are shown in Table 3 of this section. The trend of these data since 1982 is shown in Table 3 and Figures 1 and 2. The 1999 season compared to 1998 and the previous 17-year average follows:

	<u>1999</u>	Percent change from <u>1998</u>	Percent change from <u>Average</u>
Permits sold	90	+20	+169
Ptarmigan hunters	34	-24	+132
Hunter-days afield	53	-37	+120
Ptarmigan Harvest	23	+64	+88
Ptarmigan per hunter	0.68	+117	-36
Ptarmigan per hunter-day	0.43	+160	-32

Figure 1. Ptarmigan harvest statistics, 1982-99.

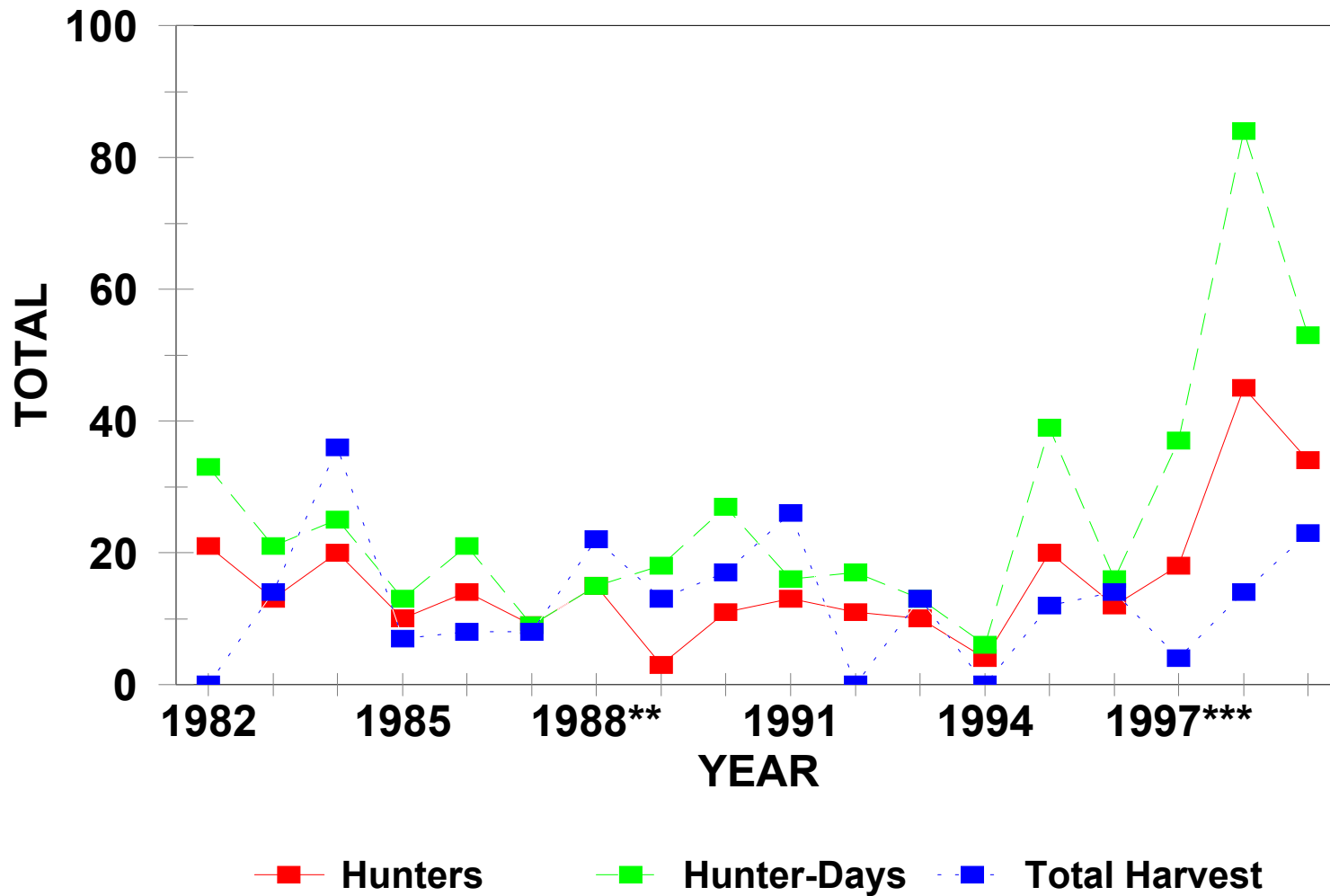


Figure 2. Ptarmigan hunting success, 1982-99.

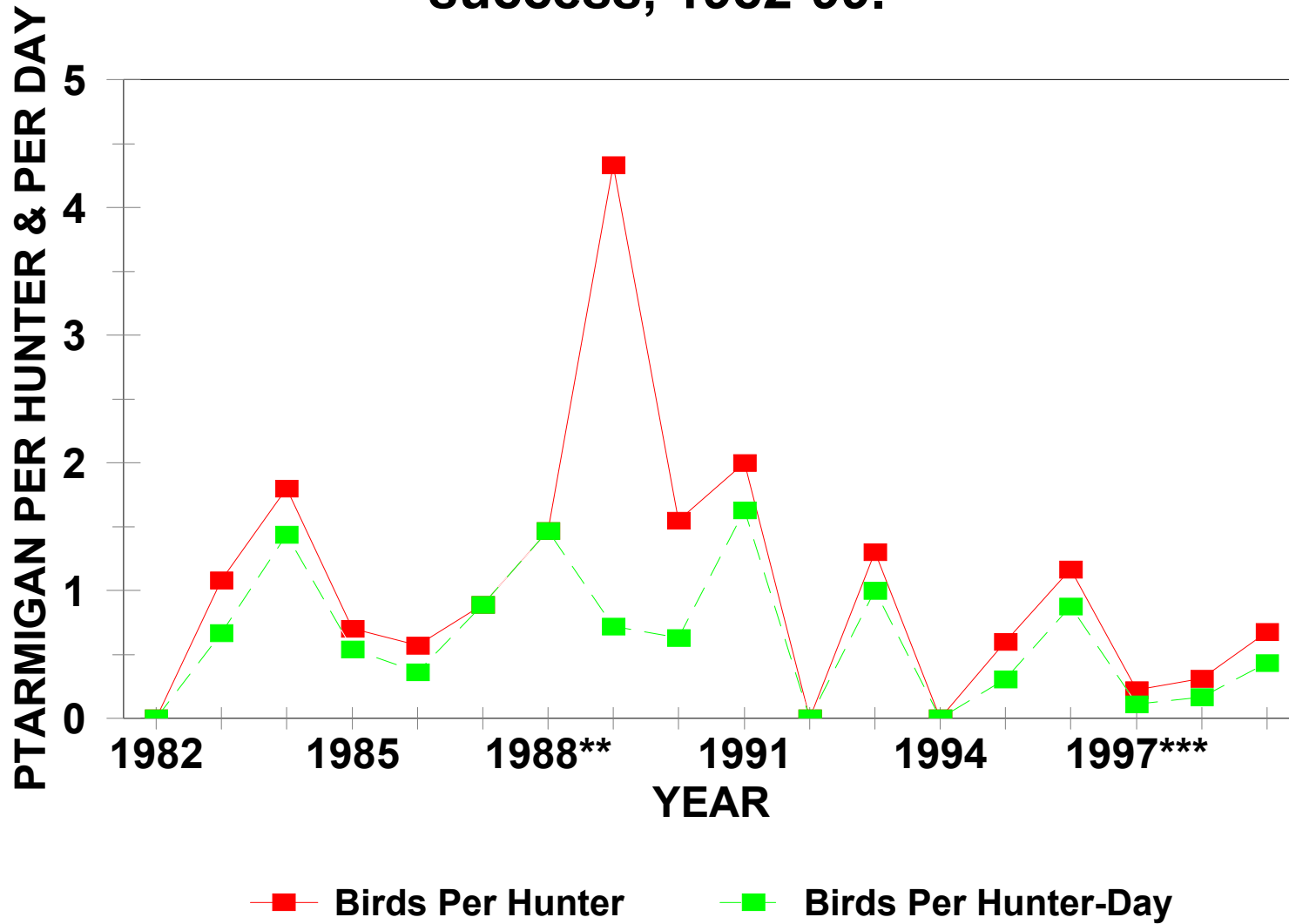


Table 1. Summary of white-tailed ptarmigan breeding territories (pairs), 1989-99.

County	Location	1989(1)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Duchesne	Painter Basin											
Duchesne	Gilbert Basin	N O	N O	N O	N O	N O	N O		N O	N O	N O	N O
Duchesne	Atwood Basin											
Duchesne	Yellowstone River	S U R	S U R	S U R	S U R	S U R	S U R		S U R	S U R	S U R	S U R
Summit	Henry's Fork	V E	V E	V E	V E	V E	V E		V E	V E	V E	V E
Summit	Flat Top Mountain	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y
Summit	Lake Blanchard											
Summit	Beaver Creek											
Summit	Smith's Fork											
Summit	Burnt Fork Drainage							0				
Uintah	Leidy Peak											

(1) Investigator was incapacitated.

Table 3. Summary of white-tailed ptarmigan harvest statistics, 1982-99.

Year	Permits Sold	Hunters Afield	Hunter-Days Afield	Total Harvest	Birds Per Hunter	Birds Per Hunter-Day	Crippling Loss/100 Bagged	% Hunters		
								Ptarmigan Observed	Observing Ptarmigan	Immatures per 100 Adults
1982	48	21	33	0	0.00	0.00	0	0	--	--
1983	31	13	21	14	1.08	0.67	0	25	30	--
1984	28	20	25	36	1.80	1.44	0	--	--	--
1985	55	10	13	7	0.70	0.54	14	9	14	--
1986	49	14	21	8	0.57	0.36	0	8	22	--
1987	45	9	9	8	0.89	0.89	--	--	--	--
1988**	28	15	15	22	1.47	1.47	--	59	--	4.50(11)
1989	20	3	18	13	4.33	0.72	--	35	--	--
1990	17	11	27	17	1.55	0.63	0	28	35	--
1991	15	13	16	26	2.00	1.63	0	95	50	--
1992	17	11	17	0	0.00	0.00	0	56	36	--
1993	10	10	13	13	1.30	1.00	0	140	38	--
1994	14	4	6	0	0.00	0.00	0	3	100	--
1995***	39	20	39	12	0.60	0.31	0	31	11	--
1996***	30	12	16	14	1.17	0.88	0	106	29	--
1997***	47	18	37	4	0.22	0.11	0	17	--	--
1998***	75	45	84	14	0.31	0.17	0	14	--	--
1999***	90	34	53	23	0.68	0.43	0	56	24	--
STATE TOTALS (1982-99)	658	283	463	231	--	--	--	682	--	--
STATE AVERAGES (1982-98)	33	15	24	12	1.06	0.64	--	37	21	--

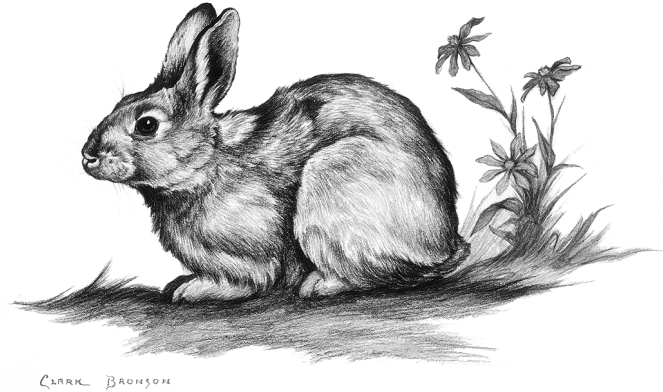
**For the first time a handling fee of \$2.00 per permit was charged.

***Permit still required, but at no charge

Projection Factor = 3.75 (NUMBER OF PERMITS ISSUED/NUMBER OF QUESTIONNAIRES RETURNED)
 90 PERMITS ISSUED
 24 QUESTIONNAIRES RETURNED
 27% QUESTIONNAIRE RETURN RATE

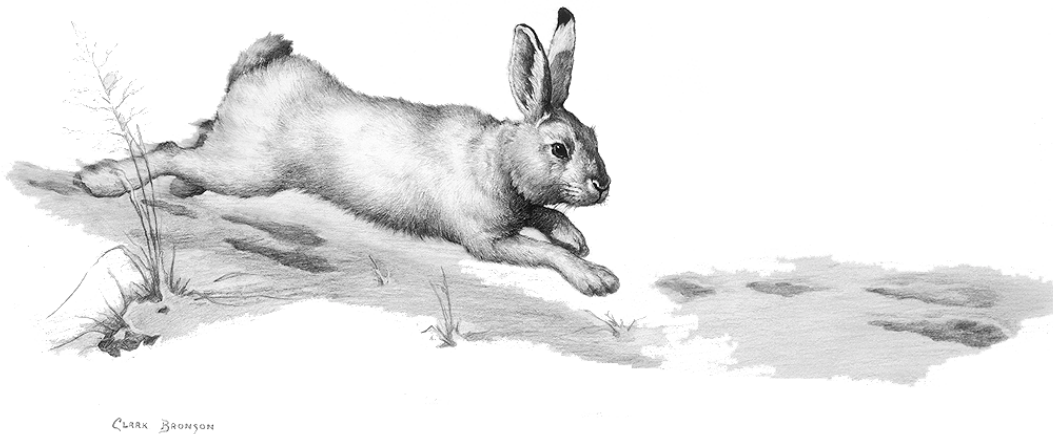
Rabbits and Hares

Cottontail Rabbit



Summer roadside counts indicated an increased population density statewide, but reproduction was below 1998. Harvest statistics indicated increased hunter success, but is still 16 percent below average.

Snowshoe Hare



Hunter numbers increased 96 percent from the previous year, but remained below average. Total hares harvested increased 103 percent from 1998.

COTTONTAIL RABBIT

Roadside Counts

Results of the annual roadside counts for 1999 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 Tables 2 and 3. Indices for 1999 compared to 1998 and the 10-year (1989-98) average follow:

	<u>1999</u>	Percent change from <u>1998</u>	Percent change from <u>Average</u>
Total miles driven	1,639	+17	+137
Total cottontails counted	442	+26	+117
Cottontails observed per mile	0.27	+8	-10
Young observed per 100 adults	79	-10	0

Production data from roadside counts indicated an increase in the total statewide cottontail population. Cottontails observed per mile increased 8 percent from 1998. The cottontail young per 100 adults index decreased 10 percent from 1998, but was unchanged from the long-term average.

Harvest

Hunter Questionnaire

Results of the 1999 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 1999 season compared to 1998 and the previous 32-year average follow:

	<u>1999</u>	Percent change from <u>1998</u>	Percent change from <u>Average</u>
Cottontail hunters	15,475	+46	-31
Cottontail harvest	66,142	+16	-53
Hunter-days afield	54,894	+19	-41
Cottontails per hunter-day	1.20	-3	-16
Cottontails per hunter	4.27	-21	-27

Total hunters increased 46 percent from 1998. Total harvest increased 16 percent. Total harvest was 53 percent below average. Hunter success was 16 percent below average.

Figure 1. Cottontail rabbit population indices trends, 1967-99.

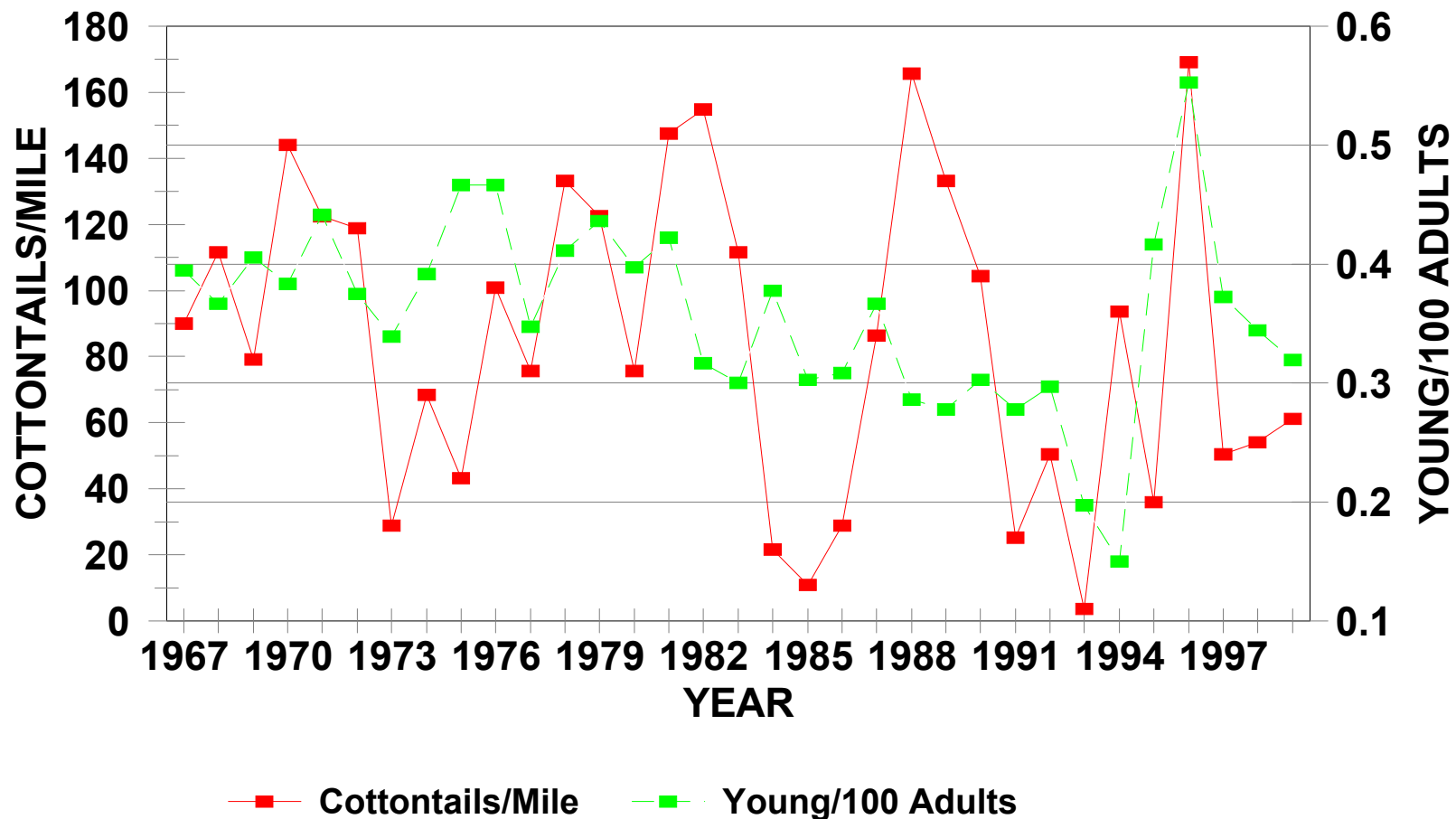
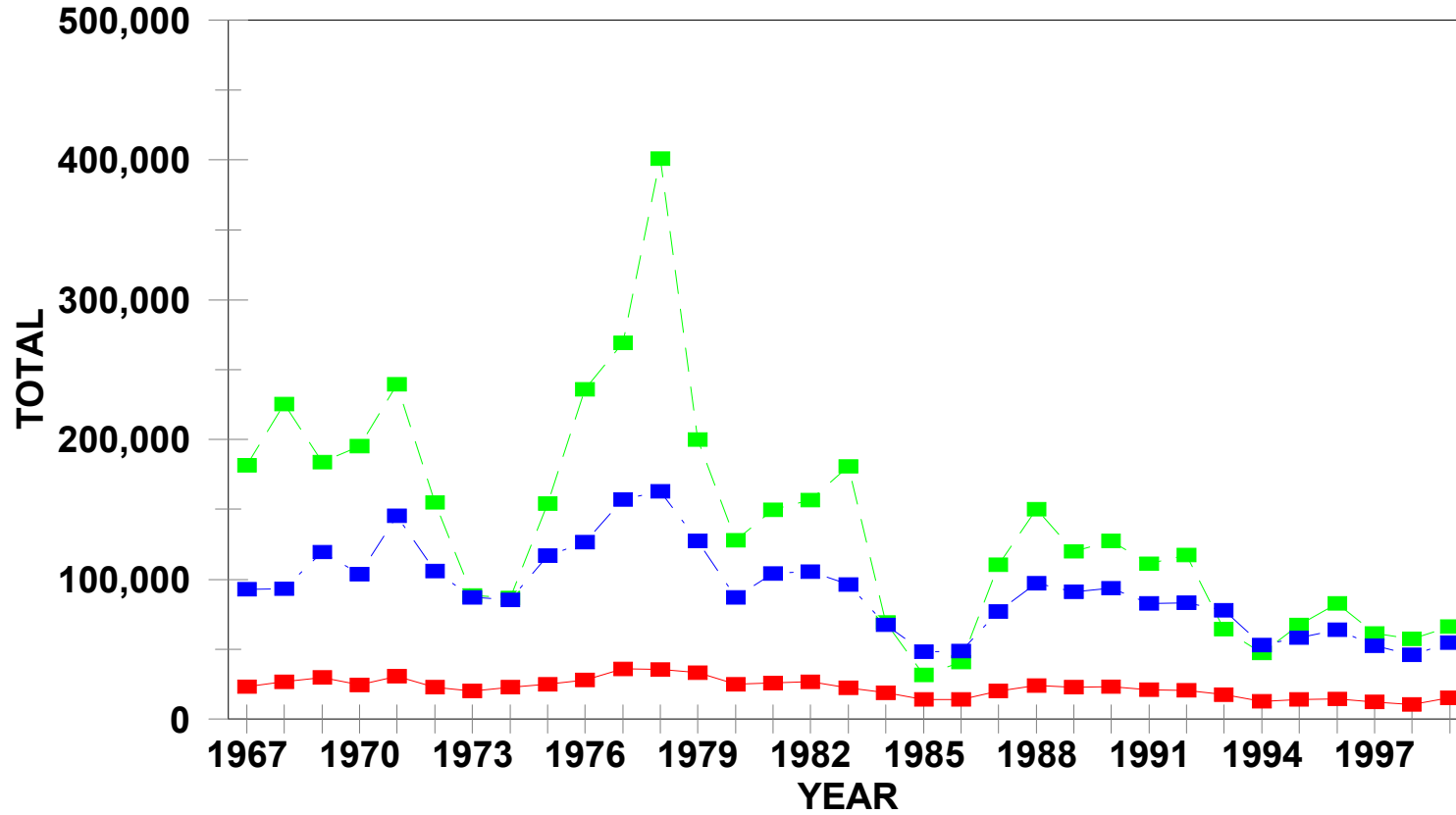


Figure 2. Statewide trends of c/t rabbit harvest statistics, 1967-99.

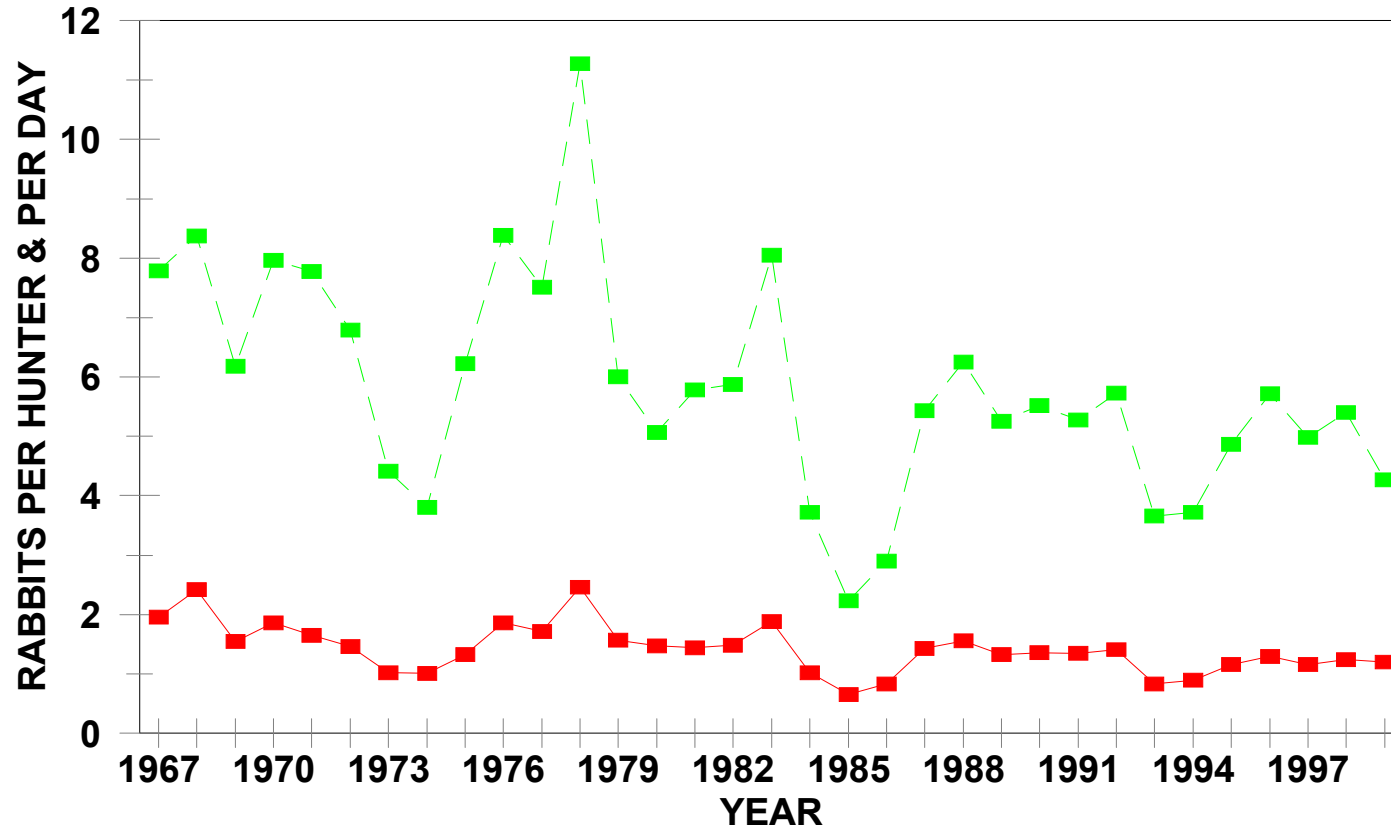


—■— Hunters

-■- Harvest

-■- Hunter-Days Afield

**Figure 3. Statewide trends of c/t
rabbit hunter success rates, 1967-99.**



—■— Cottontails Per Hunter-Day -■- Cottontails Per Hunter

Table 1. Cottontail rabbit summer inventory summary, 1999.

Region and County	Miles Driven	Rabbits Observed			Total	Young/ 100 Adults	Rabbits/ Mile
		Adults	Young	Unclassified			
Northern Region							
Box Elder	383	11	5	0	16	45	0.04
Cache	--	--	--	--	--	--	--
Davis	--	--	--	--	--	--	--
Morgan	--	--	--	--	--	--	--
Rich	180	28	10	0	38	36	0.21
Summit	--	--	--	--	--	--	--
Weber	--	--	--	--	--	--	--
REGIONAL TOTALS	563	39	15	0	54	38	0.10
Central Region							
Juab	90	4	7	0	11	175	0.12
Salt Lake	--	--	--	--	--	--	--
Sanpete	90	8	10	0	18	125	0.20
Tooele	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	--
REGIONAL TOTALS	180	12	17	0	29	142	0.16
Southern Region							
Beaver	90	25	2	0	27	8	0.30
Garfield	90	7	8	0	15	114	0.17
Iron	90	21	36	0	57	171	0.63
Kane	--	--	--	--	--	--	--
Millard	120	16	1	0	17	6	0.14
Piute	--	--	--	--	--	--	--
Sevier	90	--	--	--	19	--	0.21
Washington	--	--	--	--	--	--	--
Wayne	90	20	44	0	64	220	0.71
REGIONAL TOTALS	570	89	91	0	199	102	0.35
Northeastern Region							
Daggett	70	7	16	4	27	229	0.39
Duchesne	91.5	41	6	12	59	15	0.64
Uintah	74	15	20	26	61	133	0.82
REGIONAL TOTALS	236	63	42	42	147	67	0.62
Southeastern Region							
Carbon	90	9	3	1	13	33	0.14
Emery	--	--	--	--	--	--	--
Grand	--	--	--	--	--	--	--
San Juan	--	--	--	--	--	--	--
REGIONAL TOTALS	90	9	3	1	13	33	0.14
STATE TOTALS	1639	212	168	43	442	79	0.27

Table 2. Summary of cottontail rabbits observed per mile during summer inventory, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	0.03	0.39	0.10	0.08	--	--	--	--	--	0.04	0.04	
Cache	--	--	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	0.13	0.21	
Summit	--	--	--	--	--	--	--	--	--	0.04	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	0.03	0.39	0.10	0.08	--	--	--	--	--	0.07	0.10	0.13
Central Region												
Juab	0.30	0.23	--	--	--	--	0.01	0.02	0.00	0.00	0.12	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	0.22	0.65	0.09	0.15	0.01	--	0.07	0.14	0.00	0.18	0.20	
Tooele	--	--	--	0.03	--	--	0.02	0.00	0.02	0.00	--	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	0.26	0.45	0.09	0.08	0.01	--	0.04	0.06	0.01	0.06	0.16	0.12
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	--	0.30	
Garfield	--	--	--	--	--	--	--	--	--	--	0.17	
Iron	--	--	--	--	--	--	--	--	--	0.38	0.63	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	0.08	--	--	--	--	--	--	--	--	0.14	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	0.04	0.21	
Washington	0.33	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	0.83	0.21	--	--	--	--	--	--	0.71	
REGIONAL TOTALS	0.33	0.08	0.83	0.21	--	--	--	--	--	0.23	0.35	0.34
Northeastern Region												
Daggett	0.50	0.55	--	0.28	0.07	0.07	0.50	0.94	0.80	1.14	--	
Duchesne	1.04	0.23	0.03	0.60	0.23	0.56	0.39	1.69	0.33	0.95	--	
Uintah	1.40	1.00	--	0.18	0.17	0.24	0.23	0.82	0.43	--	--	
REGIONAL TOTALS	0.91	0.57	0.03	0.38	0.16	0.36	0.39	1.21	0.50	1.00	--	0.55
Southeastern Region												
Carbon	0.34	0.02	0.20	0.21	0.13	--	--	--	--	0.97	0.14	
Emery	0.33	0.40	0.37	0.34	0.06	--	--	--	--	--	--	
Grand	0.06	0.01	0.05	0.13	0.20	--	--	--	--	--	--	
San Juan	0.55	0.80	0.28	0.34	0.16	--	--	--	--	--	--	
REGIONAL TOTALS	0.32	0.36	0.24	0.26	0.14	--	--	--	--	0.97	0.14	0.38
STATE TOTALS	0.47	0.39	0.17	0.24	0.11	0.36	0.20	0.57	0.24	0.25	0.21	0.30

Table 3. Summary of cottontail rabbit young per 100 adults, 1989-99.

Region and County	Year											Average 1989-98
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Northern Region												
Box Elder	200	200	13	67	--	--	--	--	--	33	45	
Cache	--	--	--	--	--	--	--	--	--	--	--	
Davis	--	--	--	--	--	--	--	--	--	--	--	
Morgan	--	--	--	--	--	--	--	--	--	--	--	
Rich	--	--	--	--	--	--	--	--	--	44	36	
Summit	--	--	--	--	--	--	--	--	--	33	--	
Weber	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	200	200	13	67	--	--	--	--	--	40	38	104
Central Region												
Juab	13	--	--	--	--	--	0	100	--	--	175	
Salt Lake	--	--	--	--	--	--	--	--	--	--	--	
Sanpete	40	40	50	50	--	--	133	100	--	220	125	
Tooele	--	--	--	100	--	--	--	--	--	--	--	
Utah	--	--	--	--	--	--	--	--	--	--	--	
Wasatch	--	--	--	--	--	--	--	--	--	--	--	
REGIONAL TOTALS	23	27	50	57	--	--	125	100	--	220	142	86
Southern Region												
Beaver	--	--	--	--	--	--	--	--	--	13	8	
Garfield	--	--	--	--	--	--	--	--	--	--	114	
Iron	--	--	--	--	--	--	--	--	--	143	171	
Kane	--	--	--	--	--	--	--	--	--	--	--	
Millard	--	100	--	--	--	--	--	--	--	--	6	
Piute	--	--	--	--	--	--	--	--	--	--	--	
Sevier	--	--	--	--	--	--	--	--	--	0	--	
Washington	131	--	--	--	--	--	--	--	--	--	--	
Wayne	--	--	369	138	--	--	--	--	--	260	220	
REGIONAL TOTALS	131	100	369	138	--	--	--	--	--	131	102	174
Northeastern Region												
Daggett	59	55	--	89	33	--	100	177	89	125	--	
Duchesne	29	--	50	138	36	17	183	172	110	24	--	
Uintah	239	95	--	10	80	50	50	156	94	--	--	
REGIONAL TOTALS	82	58	50	95	47	18	113	170	95	48	--	78
Southeastern Region												
Carbon	400	400	--	25	--	--	--	--	--	150	33	
Emery	--	--	--	--	--	--	--	--	--	--	--	
Grand	--	--	--	40	--	--	--	--	--	--	--	
San Juan	80	60	54	37	18	--	--	--	--	--	--	
REGIONAL TOTALS	110	67	100	33	18	--	--	--	--	150	33	80
STATE TOTALS	64	73	64	71	35	18	114	163	98	88	85	79

Table 4. Summary of cottontail rabbit hunter success and distribution of harvest and hunting pressure by region and county, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	RABBITS BAGGED	RABBITS PER HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	81	4,399	5,209	1.18	8.01	7.88
CACHE	14	569	396	0.70	1.04	0.60
DAVIS	1	17	17	1.00	0.03	0.03
MORGAN	8	362	431	1.19	0.66	0.65
RICH	15	552	655	1.19	1.01	0.99
SUMMIT	12	966	621	0.64	1.76	0.94
WEBER	4	138	103	0.75	0.25	0.16
REGIONAL TOTALS	135	7,004	7,435	1.06	12.76	11.24
CENTRAL REGION						
JUAB	44	1,776	3,967	2.23	3.24	6.00
SALT LAKE	2	345	86	0.25	0.63	0.13
SANPETE	27	1,914	3,036	1.59	3.49	4.59
TOOELE	120	8,056	7,331	0.91	14.68	11.09
UTAH	102	5,951	6,365	1.07	10.84	9.62
WASATCH	7	724	207	0.29	1.32	0.31
REGIONAL TOTALS	302	18,769	20,995	1.12	34.19	31.74
SOUTHERN REGION						
BEAVER	12	638	759	1.19	1.16	1.15
GARFIELD	4	258	207	0.80	0.47	0.31
IRON	11	707	414	0.59	1.29	0.63
KANE	0	0	0	0.00	0.00	0.00
MILLARD	28	1,500	2,673	1.78	2.73	4.04
PIUTE	6	241	103	0.43	0.44	0.16
SEVIER	16	1,104	793	0.72	2.01	1.20
WASHINGTON	20	2,087	2,087	1.00	3.80	3.16
WAYNE	7	207	327	1.58	0.38	0.50
REGIONAL TOTALS	104	6,745	7,366	1.09	12.29	11.14
NORTHEASTERN REGION						
DAGGETT	16	500	1,052	2.10	0.91	1.59
DUCHESNE	75	5,624	8,901	1.58	10.25	13.46
UINTAH	70	5,485	6,641	1.21	9.99	10.04
REGIONAL TOTALS	161	11,610	16,596	1.43	21.15	25.09
SOUTHEASTERN REGION						
CARBON	42	4,588	5,813	1.27	8.36	8.79
EMERY	30	3,243	4,192	1.29	5.91	6.34
GRAND	9	1,707	2,397	1.40	3.11	3.63
SAN JUAN	12	1,224	1,345	1.10	2.23	2.03
REGIONAL TOTALS	93	10,764	13,749	1.28	19.61	20.79
Unknown	186	0	0	0.00	0.00	0.00
STATE TOTALS	981	54,894	66,142	1.20	100.00	100.00

*Total hunter trips from questionnaire returns.

Table 5. Summary of cottontail rabbits bagged per hunter-day by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	1.46	0.71	0.82	1.00	0.78	6.16	0.71	1.18
Cache	1.50	0.76	1.30	0.76	0.56	0.14	0.18	0.70
Davis	0.00	0.08	0.00	0.50	2.67	0.00	0.00	1.00
Morgan	1.08	0.33	0.47	4.00	2.00	0.20	0.50	1.19
Rich	2.50	0.56	1.21	1.34	1.72	0.58	0.73	1.19
Summit	0.81	1.22	1.39	0.73	1.00	0.95	1.00	0.64
Weber	0.89	0.64	0.28	0.88	1.27	0.20	2.00	0.75
REGIONAL TOTALS	1.50	0.71	0.77	0.97	0.96	8.23	0.68	1.06
Central Region								
Juab	1.54	0.83	0.64	0.49	1.08	2.65	1.59	2.23
Salt Lake	0.97	0.57	2.00	0.57	2.16	1.43	5.00	0.25
Sanpete	0.86	0.40	1.02	0.75	0.85	1.43	0.76	1.59
Tooele	1.26	0.48	0.70	0.53	0.69	4.35	0.68	0.91
Utah	1.00	0.56	0.46	0.64	1.08	2.45	0.82	1.07
Wasatch	1.70	0.83	1.57	0.21	0.18	0.07	0.09	0.29
REGIONAL TOTALS	1.19	0.57	0.67	0.56	0.98	12.38	0.86	1.12
Southern Region								
Beaver	2.44	0.67	1.50	0.39	1.00	0.58	1.00	1.19
Garfield	0.52	1.53	1.04	1.36	0.38	0.71	0.40	0.80
Iron	0.94	0.80	1.05	0.68	0.96	0.27	0.81	0.59
Kane	0.97	1.62	0.91	3.50	0.10	1.09	2.00	0.00
Millard	1.35	1.56	0.69	0.88	0.83	3.40	1.21	1.78
Piute	0.00	0.63	0.33	0.80	1.25	0.00	2.60	0.43
Sevier	1.27	0.69	0.67	0.39	1.04	1.63	1.15	0.72
Washington	1.03	1.02	1.01	1.13	1.40	1.70	1.04	1.00
Wayne	2.26	0.73	1.06	1.38	2.05	2.24	1.79	1.58
REGIONAL TOTALS	1.32	1.11	0.93	0.89	1.04	11.63	1.11	1.09
Northeastern Region								
Daggett	2.00	1.47	1.52	3.55	2.87	5.54	2.35	2.10
Duchesne	1.97	1.16	1.43	2.40	1.99	13.67	1.73	1.58
Uintah	1.74	0.82	1.55	2.77	2.66	31.73	2.03	1.21
REGIONAL TOTALS	1.87	1.04	1.51	2.61	2.34	50.95	1.89	1.43
Southeastern Region								
Carbon	1.51	0.69	0.89	1.19	1.17	5.24	1.38	1.27
Emery	1.43	0.88	0.90	1.24	1.36	6.12	0.96	1.29
Grand	1.66	1.86	1.21	1.21	0.40	1.09	2.43	1.40
San Juan	2.34	0.81	0.97	1.14	0.53	4.15	1.87	1.10
REGIONAL TOTALS	1.63	0.88	0.94	1.19	0.95	16.60	1.36	1.28
Unknown counties	0.00	1.40	0.00	1.07	3.00	0.20	0.00	0.00
STATE TOTALS	1.35	1.41	0.83	1.16	1.29	0.00	1.24	1.20

Table 8. Statewide summary of cottontail rabbit harvest statistics, 1967-99.

Year	Total Hunters	Total Harvest	Hunter-Days Afield	Cottontails Per Hunter-Day	Cottontails Per Hunter
1967	23,249	181,812	92,681	1.95	7.79
1968	26,889	225,450	93,126	2.42	8.38
1969	29,760	184,034	119,596	1.54	6.18
1970	24,486	195,248	103,725	1.86	7.97
1971	30,824	239,511	145,287	1.65	7.78
1972	22,835	155,102	105,941	1.46	6.79
1973	20,109	88,603	87,036	1.02	4.41
1974	22,737	86,506	85,499	1.01	3.80
1975	24,803	154,182	116,707	1.32	6.22
1976	28,239	235,952	126,737	1.86	8.39
1977	35,831	269,263	157,257	1.71	7.51
1978	35,590	401,071	163,019	2.46	11.27
1979	33,385	200,223	127,497	1.57	6.00
1980	25,156	127,652	87,051	1.47	5.07
1981	25,906	149,765	104,183	1.44	5.78
1982	26,714	156,696	105,644	1.48	5.87
1983	22,467	180,767	96,151	1.88	8.05
1984	18,616	69,186	67,643	1.02	3.72
1985	14,059	31,397	48,371	0.65	2.23
1986	13,992	40,636	48,694	0.83	2.90
1987	20,322	110,411	77,047	1.43	5.43
1988	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
1991	21,137	111,407	82,772	1.35	5.27
1992	20,509	117,454	83,154	1.41	5.73
1993	17,578	64,400	77,968	0.83	3.66
1994	12,709	47,322	53,175	0.89	3.72
1995	13,840	67,295	58,042	1.16	4.86
1996	14,470	82,803	63,943	1.29	5.72
1997	12,263	61,109	52,587	1.16	4.98
1998	10,585	57,137	45,947	1.24	5.40
1999	15,475	66,142	54,894	1.20	4.27
Totals					
(1967-99)	734,559	4,556,386	3,013,343	--	--
Averages					
(1967-98)	22,471	140,320	92,452	1.42	5.87

SNOWSHOE HARE

Harvest

Results of the 1999 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 1999 season compared to 1998 and the previous 24-year average follow:

	<u>1999</u>	Percent change from <u>1998</u>	Percent change from <u>Average</u>
Snowshoe hare hunters	2,139	+96	-49
Snowshoe hares harvested	2,173	+103	-74
Hunter-days afield	5,831	+65	-55
Snowshoes per hunter-day	0.37	+23	-36
Snowshoes per hunter	1.02	+4	-43

Results of the 1999 harvest questionnaire indicates a 103 percent increase in total hares harvested. Success was 36 percent below the long-term average.

Figure 1. Statewide trends of snowshoe hare harvest statistics, 1975-99.

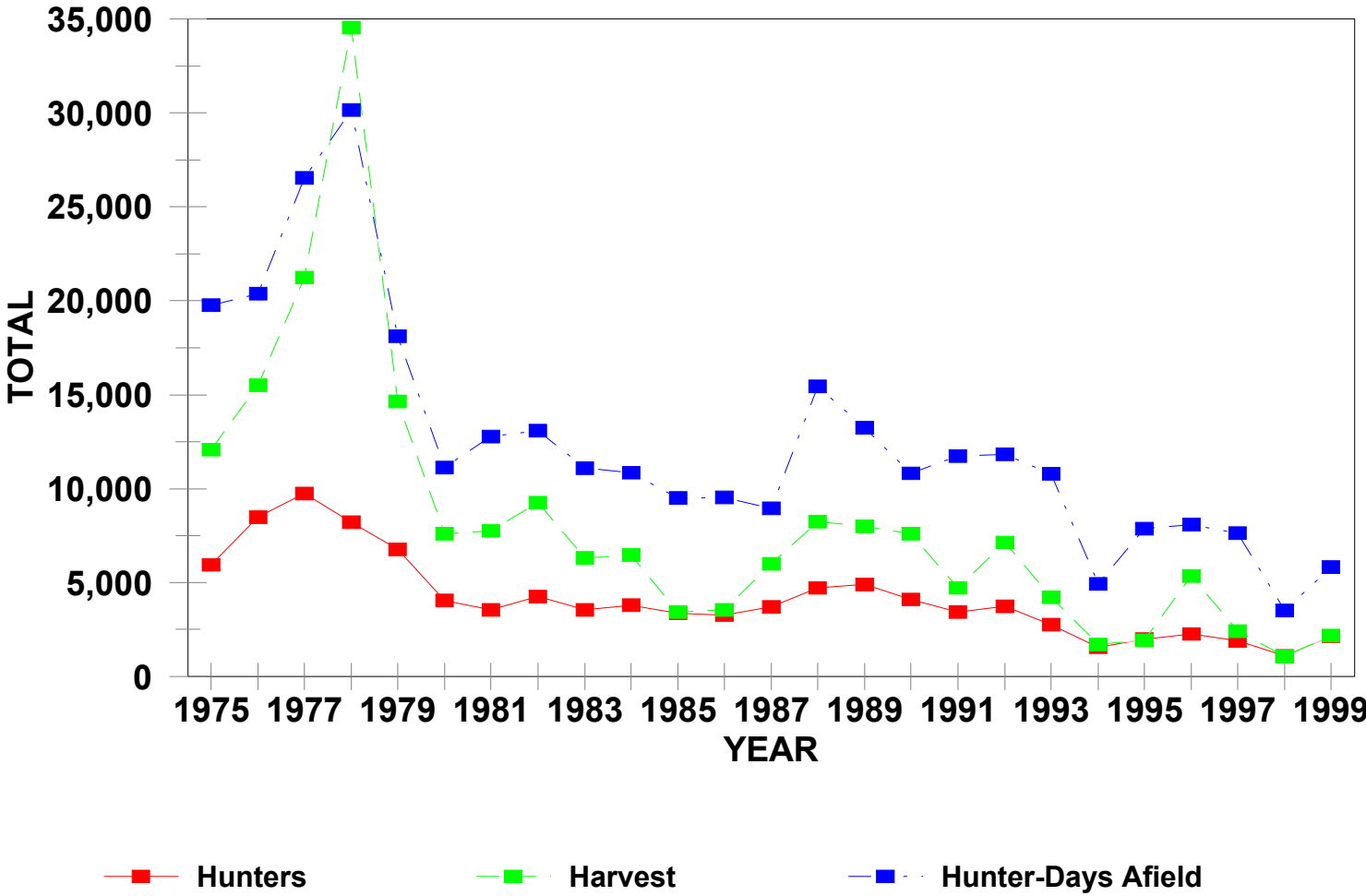


Figure 2. Statewide trends of snowshoe hare hunter success rates, 1975-99.

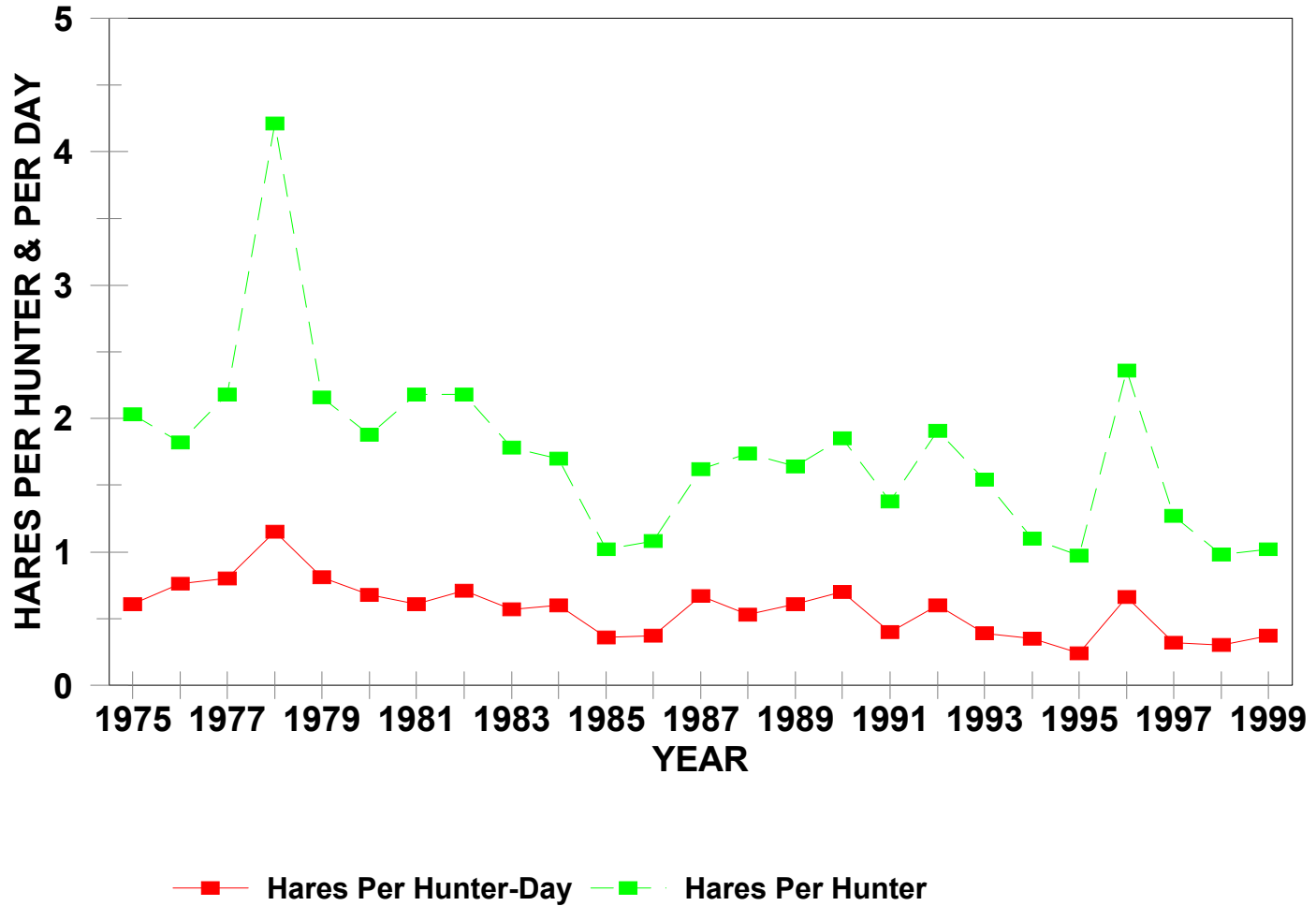


Table 11. Summary of snowshoe hare hunter success and distribution of harvest and hunting pressure by region and county, 1999.

REGION AND COUNTY	SAMPLE SIZE*	HUNTER-DAYS AFIELD	SNOWSHOE BAGGED	SNOWSHOE HUNTER-DAY	% OF PRESSURE	% OF HARVEST
NORTHERN REGION						
BOX ELDER	11	517	207	0.40	8.88	9.53
CACHE	14	500	51	0.10	8.58	2.38
DAVIS	0	0	0	0.00	0.00	0.00
MORGAN	1	17	17	1.00	0.30	0.79
RICH	5	155	34	0.22	2.66	1.59
SUMMIT	6	483	155	0.32	8.28	7.15
WEBER	1	69	17	0.25	1.18	0.79
REGIONAL TOTALS	38	1,742	483	0.28	29.88	22.23
CENTRAL REGION						
JUAB	2	34	172	5.00	0.59	7.94
SALT LAKE	1	172	0	0.00	2.96	0.00
SANPETE	6	517	207	0.40	8.88	9.53
TOOELE	4	155	34	0.22	2.66	1.59
UTAH	6	362	155	0.43	6.21	7.15
WASATCH	6	362	34	0.10	6.21	1.59
REGIONAL TOTALS	25	1,604	603	0.38	27.51	27.79
SOUTHERN REGION						
BEAVER	0	0	0	0.00	0.00	0.00
GARFIELD	0	0	0	0.00	0.00	0.00
IRON	0	0	0	0.00	0.00	0.00
KANE	0	0	0	0.00	0.00	0.00
MILLARD	0	0	0	0.00	0.00	0.00
PIUTE	1	17	34	2.00	0.30	1.59
SEVIER	3	103	17	0.17	1.78	0.79
WASHINGTON	0	0	0	0.00	0.00	0.00
WAYNE	1	34	51	1.50	0.59	2.38
REGIONAL TOTALS	5	155	103	0.67	2.66	4.76
NORTHEASTERN REGION						
DAGGETT	3	103	0	0.00	1.78	0.00
DUCHESNE	8	293	293	1.00	5.03	13.50
UINTAH	6	759	224	0.30	13.02	10.32
REGIONAL TOTALS	17	1,155	517	0.45	19.82	23.82
SOUTHEASTERN REGION						
CARBON	8	552	293	0.53	9.47	13.50
EMERY	7	276	138	0.50	4.73	6.35
GRAND	1	345	34	0.10	5.92	1.59
SAN JUAN	0	0	0	0.00	0.00	0.00
REGIONAL TOTALS	16	1,173	465	0.40	20.12	21.44
Unknown	30	0	0	0.00	0.00	0.00
STATE TOTALS	131	5,831	2,173	0.37	100.00	100.00

*Total hunter trips from questionnaire returns.

Table 12. Summary of snowshoe hare bagged per hunter-day by region and county, 1992-99.

Region and County	Year							
	1992	1993	1994	1995	1996	1997	1998	1999
Northern Region								
Box Elder	0.52	0.45	0.82	0.14	0.21	0.85	0.10	0.40
Cache	0.26	0.42	1.30	0.11	0.09	0.07	0.50	0.10
Davis	0.00	0.00	0.00	0.60	0.75	0.00	0.00	0.00
Morgan	0.15	0.00	0.47	0.00	1.88	1.50	0.00	1.00
Rich	1.15	0.38	1.21	0.21	1.00	1.82	0.33	0.22
Summit	0.62	0.18	0.39	0.23	0.75	0.17	1.40	0.32
Weber	1.00	1.12	0.28	0.91	0.00	0.57	0.00	0.25
REGIONAL TOTALS	0.54	0.48	0.77	0.38	0.38	0.68	0.44	0.28
Central Region								
Juab	0.38	0.00	0.64	0.15	1.14	3.00	0.00	5.00
Salt Lake	0.08	0.00	2.00	0.00	2.00	0.00	0.00	0.00
Sanpete	0.43	0.67	1.02	0.50	0.63	1.00	0.35	0.40
Tooele	0.58	0.25	0.70	0.38	0.05	0.13	0.50	0.22
Utah	0.79	0.08	0.46	0.10	0.35	0.11	0.88	0.43
Wasatch	0.48	8.67	1.57	0.04	0.11	0.27	0.33	0.10
REGIONAL TOTALS	0.55	0.44	0.67	0.21	0.35	0.16	0.59	0.38
Southern Region								
Beaver	0.00	0.00	1.50	0.05	0.00	6.50	0.00	0.00
Garfield	0.00	0.00	1.04	0.00	0.00	0.00	0.00	0.00
Iron	0.67	0.00	1.05	0.00	0.00	0.00	0.00	0.00
Kane	0.20	0.00	0.91	0.00	0.00	0.00	0.00	0.00
Millard	0.15	0.32	0.69	0.00	0.00	0.12	0.00	0.00
Piute	1.50	0.00	0.33	0.00	3.21	0.00	0.50	2.00
Sevier	0.78	0.44	0.67	0.00	0.00	0.20	0.00	0.17
Washington	0.00	0.00	1.01	0.00	0.00	0.00	0.00	0.00
Wayne	1.25	0.25	1.06	0.00	0.00	0.00	0.00	1.50
REGIONAL TOTALS	0.70	0.30	0.93	0.02	3.03	0.78	0.14	0.67
Northeastern Region								
Daggett	1.00	0.43	1.52	0.00	3.00	0.06	0.00	0.00
Duchesne	0.23	0.22	1.43	0.12	0.35	0.16	0.08	1.00
Uintah	1.62	0.15	1.55	0.33	0.41	0.13	0.18	0.30
REGIONAL TOTALS	0.79	0.23	1.51	0.24	0.44	0.12	0.10	0.45
Southeastern Region								
Carbon	0.63	0.29	0.89	0.00	1.67	0.10	0.17	0.53
Emery	0.33	0.60	0.90	0.33	0.70	0.13	0.00	0.50
Grand	0.00	0.00	1.21	0.00	0.00	0.00	0.00	0.10
San Juan	1.00	0.00	0.97	0.00	0.00	0.20	0.00	0.00
REGIONAL TOTALS	0.46	0.37	0.94	0.20	0.92	0.11	0.22	0.40
Unknown counties	0.00	3.60	0.00	0.00	0.00	0.00	0.00	0.00
STATE TOTALS	0.60	0.39	0.35	0.24	0.66	0.32	0.30	0.37

Table 15. Statewide summary of snowshoe hare harvest statistics, 1975-99.

Year	Total Hunters	Total Harvest	Hunter-Days Afield	Hares Per Hunter-Day	Hares Per Hunter
1975	5,961	12,072	19,770	0.61	2.03
1976	8,502	15,500	20,367	0.76	1.82
1977	9,752	21,232	26,535	0.80	2.18
1978	8,205	34,535	30,155	1.15	4.21
1979	6,787	14,641	18,115	0.81	2.16
1980	4,048	7,603	11,140	0.68	1.88
1981	3,554	7,750	12,782	0.61	2.18
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
1992	3,732	7,144	11,836	0.60	1.91
1993	2,755	4,237	10,774	0.39	1.54
1994	1,565	1,722	4,922	0.35	1.10
1995	1,983	1,924	7,891	0.24	0.97
1996	2,276	5,365	8,106	0.66	2.36
1997	1,912	2,431	7,628	0.32	1.27
1998	1,093	1,070	3,536	0.30	0.98
1999	2,139	2,173	5,831	0.37	1.02
Totals (1975-99)	103,335	202,952	313,615	--	--
Averages (1975-98)	4,217	8,366	12,824	0.58	1.77

A P P E N D I C E S

APPENDIX A

WEATHER CONDITIONS

Weather information used in this report (Tables 1 & 2 and Figures 1 & 2) is from the N.O.A.A. monthly periodical titled "Climatological Data."

The 1998-99 winter weather was very mild in terms of temperature. During November-March temperatures statewide were well above normal. Below average precipitation fell November through March.

In the spring of 1999, temperatures were below normal April through June. Precipitation was above normal April through August.

Table 1. Comparison of 1999 monthly average temperatures (F) to the normal for each weather division and statewide.

Weather Division	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
No.1 Western													
Normal	26.0	32.5	39.6	47.3	56.5	66.0	74.3	72.1	62.0	50.1	37.6	27.4	49.3
1999	33.1	35.3	42.4	43.8	54.9	65.8	74.5	72.1	61.3	51.3	41.7	28.8	50.4
Departure (degrees)	7.1	2.8	2.8	-3.5	-1.6	-0.2	0.2	0.0	-0.7	1.2	4.1	1.4	1.1
No.2 Dixie													
Normal	38.8	44.1	49.2	56.6	65.7	75.6	81.7	79.4	71.9	60.9	48.0	39.5	59.3
1999	44.0	46.5	54.4	53.1	66.1	74.9	80.5	80.6	74.0	64.9	53.8	41.8	61.2
Departure (degrees)	5.2	2.4	5.2	-3.5	0.4	-0.7	-1.2	1.2	2.1	4.0	5.8	2.3	1.9
No.3 North Central													
Normal	25.8	31.3	39.3	47.7	56.9	66.2	74.4	72.3	62.4	50.9	38.3	27.8	49.4
1999	33.9	35.9	44.3	45.2	55.0	66.3	75.3	74.2	62.1	53.7	45.3	30.5	51.8
Departure (degrees)	8.1	4.6	5.0	-2.5	-1.9	0.1	0.9	1.9	-0.3	2.8	7.0	2.7	2.4
No.4 South Central													
Normal	26.5	31.6	37.6	45.1	54.0	63.4	70.4	68.2	59.9	49.3	37.3	28.1	47.6
1999	33.1	35.0	42.0	40.7	52.2	63.0	70.1	68.1	59.6	51.8	42.8	29.9	49.0
Departure (degrees)	6.6	3.4	4.4	-4.4	-1.8	-0.4	-0.3	-0.1	-0.3	2.5	5.5	1.8	1.4
No.5 Northern Mountains													
Normal	20.9	24.7	31.7	40.6	49.6	58.2	65.6	63.6	54.9	44.7	32.5	22.8	42.5
1999	28.4	29.1	36.8	38.6	47.9	58.3	66.6	65.1	54.2	46.8	39.3	25.0	44.7
Departure (degrees)	7.5	4.4	5.1	-2.0	-1.7	0.1	1.0	1.5	-0.7	2.1	6.8	2.2	2.2
No.6 Uintah Basin													
Normal	16.7	24.0	36.3	46.8	56.2	65.3	72.2	69.8	60.2	48.3	34.0	20.5	45.9
1999	25.8	32.4	42.0	44.7	53.8	63.9	72.6	69.4	58.7	49.9	37.8	25.0	48.0
Departure (degrees)	9.1	8.4	5.7	-2.1	-2.4	-1.4	0.4	-0.4	-1.5	1.6	3.8	4.5	2.1
No.7 Southeast													
Normal	26.9	34.2	41.9	50.5	60.0	70.1	76.7	74.2	65.2	53.4	40.2	29.5	51.9
1999	35.1	38.0	48.1	47.8	59.5	70.0	77.3	72.9	65.1	56.0	44.7	32.0	53.9
Departure (degrees)	8.2	3.8	6.2	-2.7	-0.5	-0.1	0.6	-1.3	-0.1	2.6	4.5	2.5	2.0
STATE AVERAGES													
Normal	25.9	31.8	39.4	47.8	57.0	66.4	73.6	71.4	62.4	51.1	38.3	27.9	49.4
1999	33.3	36.0	44.3	44.8	55.6	66.0	73.8	71.8	62.1	53.5	43.6	30.4	51.3
Departure (degrees)	7.4	4.3	4.9	-3.0	-1.4	-0.4	0.2	0.4	-0.2	2.4	5.4	2.5	1.9

Figure 1. Temperature Departure from Normal, (degrees F), 1999

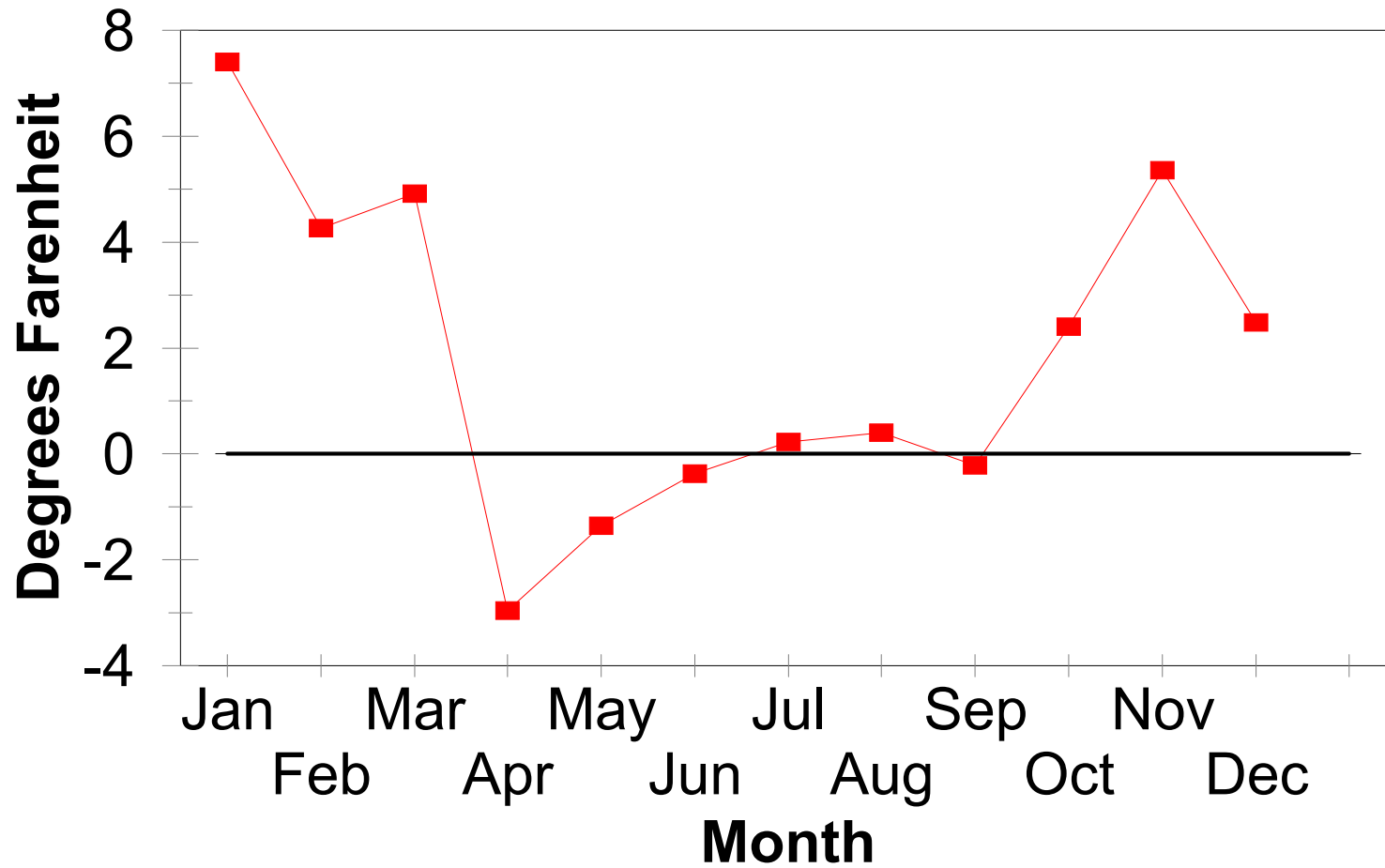
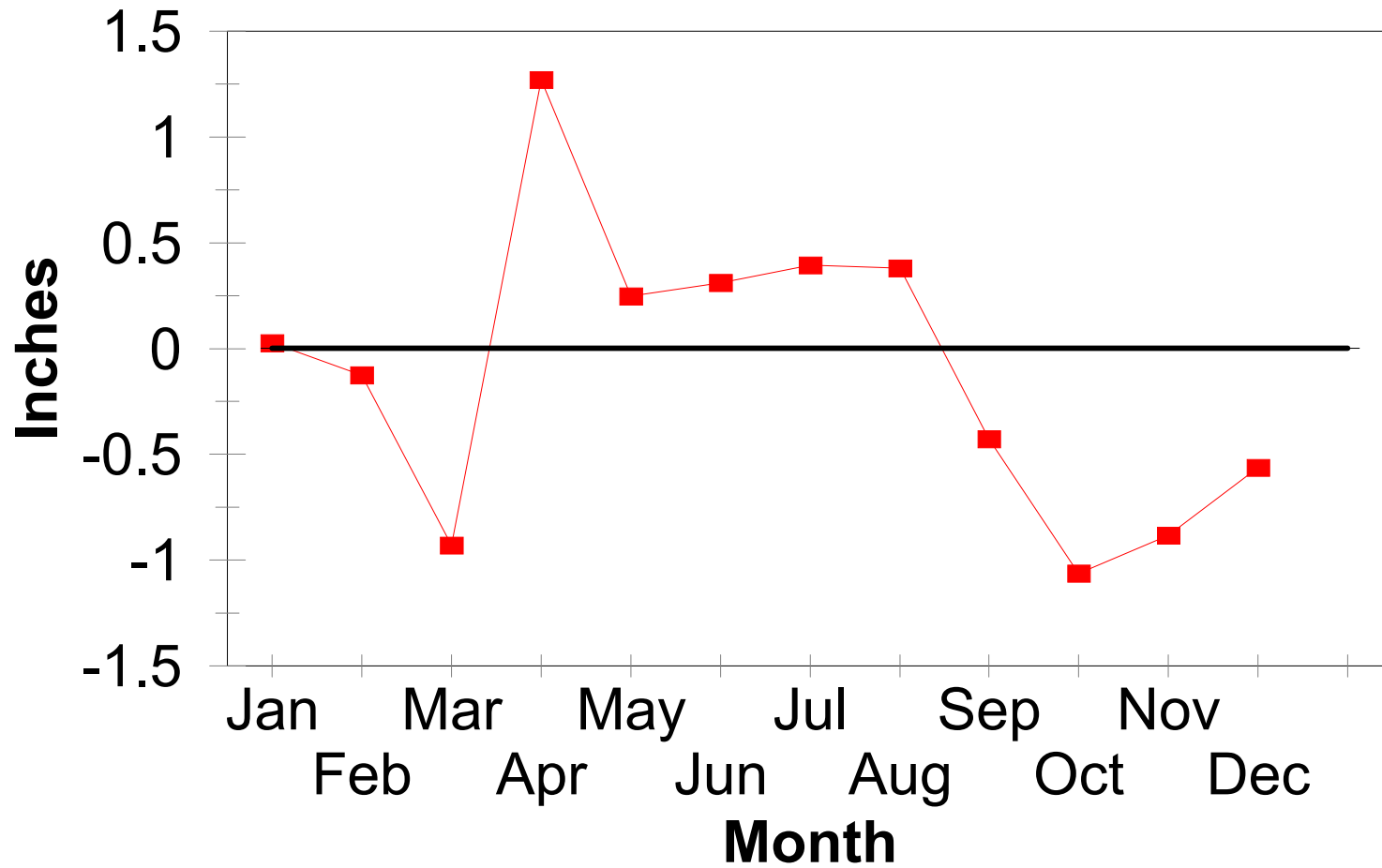


Table 2. Comparison of 1999 monthly average precipitation to the normal for each weather division and statewide.

Weather Division	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
No.1 Western													
Normal	0.53	0.58	0.85	0.89	0.98	0.71	0.73	0.83	0.79	0.81	0.68	0.58	8.96
1999	0.46	0.33	0.35	1.66	0.74	1.07	0.58	0.78	0.28	0.06	0.11	0.16	6.58
Departure (inches)	-0.07	-0.25	-0.50	0.77	-0.24	0.36	-0.15	-0.05	-0.51	-0.75	-0.57	-0.42	-2.38
No.2 Dixie													
Normal	1.32	1.29	1.67	0.90	0.63	0.31	0.90	1.19	0.86	0.78	1.19	1.01	12.05
1999	0.58	0.75	0.12	1.39	0.27	1.23	1.97	1.24	0.21	0.00	0.05	0.04	7.85
Departure (inches)	-0.74	-0.54	-1.55	0.49	-0.36	0.92	1.07	0.05	-0.65	-0.78	-1.14	-0.97	-4.20
No.3 North Central													
Normal	1.34	1.39	1.77	1.94	1.84	1.21	0.85	0.99	1.43	1.64	1.53	1.49	17.42
1999	2.17	1.54	0.84	3.64	2.79	1.61	0.74	0.87	0.42	0.10	0.55	1.01	16.28
Departure (inches)	0.83	0.15	-0.93	1.70	0.95	0.40	-0.11	-0.12	-1.01	-1.54	-0.98	-0.48	-1.14
No.4 South Central													
Normal	0.98	1.01	1.37	1.07	0.98	0.60	1.07	1.38	1.18	1.05	1.07	1.02	12.78
1999	0.56	0.79	0.25	2.41	1.21	1.00	2.13	1.87	0.99	0.16	0.22	0.44	12.03
Departure (inches)	-0.42	-0.22	-1.12	1.34	0.23	0.40	1.06	0.49	-0.19	-0.89	-0.85	-0.58	-0.75
No.5 Northern Mountains													
Normal	1.83	1.78	1.93	1.95	1.68	1.19	1.04	1.19	1.52	1.69	1.83	1.92	19.55
1999	2.82	2.18	0.85	3.75	2.92	1.33	1.21	1.50	0.84	0.26	0.44	1.27	19.37
Departure (inches)	0.99	0.40	-1.08	1.80	1.24	0.14	0.17	0.31	-0.68	-1.43	-1.39	-0.65	-0.18
No.6 Uintah Basin													
Normal	0.48	0.46	0.63	0.73	0.86	0.71	0.71	0.73	0.88	0.96	0.56	0.60	8.31
1999	0.48	0.26	0.01	2.29	0.97	0.36	0.75	1.53	1.07	0.04	0.06	0.19	8.01
Departure (inches)	0.00	-0.20	-0.62	1.56	0.11	-0.35	0.04	0.80	0.19	-0.92	-0.50	-0.41	-0.30
No.7 Southeast													
Normal	0.68	0.59	0.81	0.66	0.67	0.46	0.97	1.05	0.98	1.13	0.80	0.73	9.53
1999	0.28	0.37	0.10	1.90	0.47	0.76	1.65	2.23	0.83	0.00	0.05	0.31	8.95
Departure (inches)	-0.40	-0.22	-0.71	1.24	-0.20	0.30	0.68	1.18	-0.15	-1.13	-0.75	-0.42	-0.58
STATE AVERAGES													
Normal	1.02	1.01	1.29	1.16	1.09	0.74	0.90	1.05	1.09	1.15	1.09	1.05	12.66
1999	1.05	0.89	0.36	2.43	1.34	1.05	1.29	1.43	0.66	0.09	0.21	0.49	11.30
Departure (inches)	0.03	-0.13	-0.93	1.27	0.25	0.31	0.39	0.38	-0.43	-1.06	-0.88	-0.56	-1.36

**Figure 2. Precipitation Departure
from Normal, (inches), 1999**



APPENDIX B

LICENSE SALES

Small game and Combination license sales by type and cost are listed in Table 1. The number of licenses sold for all types increased slightly in 1999.

The proportion of Utah's population hunting small game is declining (Table 2). In the early 1970s about 9 percent of Utah's population was hunting small game. In 1999, only 2.9 percent of Utah's population hunted 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 public services.

Table 1. Statewide small game license sales information, 1954-99.

Year	Adult Res. Small Game		Juv. Res. Small Game		Non Res. Small Game		Combination License	
	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
1967	18,588	\$4.50	12,851	\$2.50	652	\$20.00	86,218	\$10.00
1968	20,647	\$4.50	15,205	\$2.50	703	\$20.00	91,020	\$10.00
1969	20,221	\$4.50	15,567	\$2.50	853	\$20.00	96,117	\$10.00
1970	19,564	\$4.50	15,827	\$2.50	1,009	\$20.00	100,467	\$10.00
1971	20,681	\$4.50	16,044	\$2.50	1,000	\$20.00	102,284	\$10.00
1972	19,796	\$4.50	16,523	\$2.50	1,075	\$20.00	107,414	\$10.00
1973	18,836	\$4.50	16,522	\$2.50	964	\$20.00	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
1976	33,078	\$6.00	16,261	\$3.00	1,141	\$20.00	76,587	\$18.00
1977	36,473	\$6.00	15,795	\$3.00	1,270	\$20.00	74,600	\$18.00
1978	37,082	\$6.00	15,419	\$3.00	1,449	\$20.00	81,227	\$18.00
1979	36,721	\$6.00	14,200	\$3.00	1,575	\$20.00	84,450	\$18.00
1980	30,189	\$8.00	14,042	\$4.00	1,330	\$30.00	100,177	\$23.00
1981	37,804	\$8.00	13,874	\$4.00	1,559	\$30.00	83,486	\$23.00
1982	36,850	\$8.00	14,040	\$4.00	1,637	\$30.00	82,970	\$23.00
1983	39,602	\$8.00	13,814	\$4.00	1,685	\$30.00	73,529	\$23.00
1984	36,070	\$8.00	13,170	\$4.00	1,633	\$30.00	73,081	\$23.00
1985	30,102	\$12.00	12,987	\$6.00	1,500	\$40.00	82,137	\$35.00
1986	29,202	\$12.00	11,921	\$6.00	1,274	\$40.00	67,187	\$35.00
1987	26,781	\$12.00	11,228	\$6.00	1,235	\$40.00	66,715	\$35.00
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	79,165	\$35.00
1992	21,852	\$12.00	5,431	\$6.00	1,195	\$40.00	78,940	\$35.00
1993	20,899	\$12.00	4,887	\$6.00	1,150	\$40.00	78,030	\$25.00
1994	25,792	\$12.00	4,551	\$6.00	1,223	\$40.00	59,854	\$25.00
1995	24,219	\$12.00	4,403	\$6.00	1,379	\$40.00	66,607	\$25.00
1996	23,908	\$12.00	3,584	\$6.00	1,503	\$40.00	65,003	\$25.00
1997	22,335	\$12.00	3,546	\$6.00	1,476	\$40.00	62,936	\$25.00
1998	22,671	\$12.00	3,529	\$6.00	1,618	\$40.00	63,648	\$25.00
1999	23,109	\$13.00	3,654	\$7.00	1,651	\$41.00	65,193	\$28.00

Table 2. Actual (1971-1999) proportion of Utah population hunting small game.

Year	Utah Population	Resident Small Game Hunters 1	Proportion Hunting Small Game
1971	1,101,000	93,399	8.5
1972	1,135,000	102,430	9.0
1973	1,169,000	106,868	9.1
1974	1,197,000	104,796	8.8
1975	1,234,000	100,702	8.2
1976	1,272,000	77,138	6.1
1977	1,316,000	78,652	6.0
1978	1,364,000	87,928	6.4
1979	1,416,000	93,016	6.6
1980	1,461,037	103,018	7.1
1981	1,524,830	96,104	6.3
1982	1,588,622	92,724	5.8
1983	1,652,415	86,396	5.2
1984	1,716,207	81,499	4.7
1985	1,780,000	88,498	5.0
1986a	1,665,000	87,442	5.3
1987a	1,678,000	79,485	4.7
1988	1,695,000	87,928	5.2
1989a	1,715,000	89,147	5.2
1990a	1,722,850	87,691	5.1
1991a	1,774,241	86,484	4.9
1992a	1,820,453	88,707	4.9
1993a	1,866,000	86,150	4.6
1994a	1,916,000	72,383	3.8
1995a	1,959,000	75,251	3.8
1996a	2,002,359	70,142	3.5
1997a	2,048,753	61,945	3.0
1998a	2,082,502	60,396	2.9
1999a	2,121,053	62,555	2.9

1 Resident Small Game Hunters = Number of Combination Licenses sold - number of Federal Duck Stamps sold, plus number of RESident Small Game Licenses sold, plus half of number of Juvenile Resident Small Game Licenses sold.

**a Utah Population Estimate Committee Report for July 1
(Governor's Office Planning and Budget)**

Table 3. Small game license sales and income, 1971-99 (JSG=juvenile small game, RSG=adult resident small game, CMB=combination license, NRSG=nonresident small game).

Year	License Fees				Number of Licenses Sold				No. Federal	Total Gross Revenues Attributed to Small Game (\$)				
	JSG	RSG	CMB	NRSG	JSG	RSG	CMB	NRSG	Duck Stamps Sold(3)	JSG(4)	RSG	CMB(2)	NRSG	TOTAL(1)
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
1975	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
1981	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
1992	6.00	12.00	35.00	40.00	5,431	21,852	78,940	1,195	14,801	16,293	262,224	598,417	47,800	924,734
1993	6.00	12.00	25.00	40.00	4,887	20,899	78,030	1,150	15,223	14,661	250,788	585,989	46,000	897,438
1994	6.00	12.00	25.00	40.00	4,551	25,792	59,854	1,223	15,539	13,653	309,504	413,459	48,920	785,536
1995	6.00	12.00	25.00	40.00	4,403	24,219	66,607	1,379	19,428	13,209	290,628	440,180	55,160	799,177
1996	6.00	12.00	25.00	40.00	3,584	23,908	65,003	1,503	21,403	10,752	286,896	552,412	60,120	910,180
1997	6.00	12.00	25.00	40.00	3,674	22,980	63,513	1,563	25,099	11,022	275,760	486,705	62,520	836,007
1998	6.00	12.00	25.00	40.00	3,529	22,671	63,648	1,618	27,668	10,587	272,052	455,867	64,720	803,226
1999	7.00	13.00	28.00	41.00	3,654	23,109	65,193	1,651	27,574	12,789	300,417	476,633	67,691	857,530

1 Value does not include cougar, bear or wild turkey permits, habitat authorization, or cooperative wildlife management unit or commercial hunting area license fees.

It does not include NRSG revenue--this is assumed to be primarily non-resident bear and cougar hunters.

2 Combination license values are based on the assumption that all waterfowl hunters purchased only combination licenses.

They may fish and hunt big game but they do not hunt any other small game. Therefore, duck stamp sales are subtracted from combination license sales when projecting revenue generated. The proportion of the combination license fee attributed to small game equals the resident small game license fee divided by the resident fishing license fee, plus the resident small game license fee.

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 Half 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

Surveys

Regional and statewide summary of effort expended on upland game summer surveys, 1972-99 is found in Table 1.

Generally hours spent and miles driven on upland game surveys in Utah have declined dramatically since 1972. 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 Federal Fair Labor and Standards Act has further eroded survey effort. When effort and results have reached a lower critical sample size, surveys have not been conducted or little effort expended.

Table 1. Regional and statewide summary of effort expended on upland game summer inventory, 1972-99.

Species	REGION												
	Northern		Central		Southern		Northeastern		Southeastern		STATE TOTALS		
	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	
Pheasant	1972	469	--	963	--	752	--	535	--	297	--	3,016	--
	1973	322	--	691	--	740	--	488	--	230	--	2,471	--
	1974	479	--	819	--	848	--	508	--	317	--	2,971	--
	1975	490	--	846	--	993	--	515	--	393	--	3,237	--
	1976	476	--	822	--	773	--	434	--	400	--	2,905	--
	1977	484	--	731	--	790	--	554	--	343	--	2,902	--
	1978	479	--	642	--	654	--	512	--	588	--	2,875	--
	1979	438	--	642	--	721	--	562	--	209	--	2,572	--
	1980	358	--	672	--	750	--	546	--	270	--	2,596	--
	1981	459	--	525	--	801	--	535	--	330	--	2,650	--
	1982	437	--	639	--	583	--	477	--	332	--	2,468	--
	1983	260	--	442	--	780	--	426	--	330	--	2,238	--
	1984	444	--	359	--	473	--	463	--	166	--	1,905	--
	1985	383	--	303	--	650	--	492	--	180	--	2,008	--
	1986	455	--	617	--	669	--	520	--	270	--	2,531	--
	1987	432	--	518	--	574	--	546	--	90	--	2,160	--
	1988	334	--	436	--	604	--	469	--	90	--	1,933	--
	1989	499	--	427	--	45	--	403	--	90	--	1,464	--
	1990	518	--	509	--	97	--	240	--	90	--	1,454	--
	1991	485	--	496	--	120	--	375	--	90	--	1,566	--
1992	413	--	455	--	0	--	657	--	90	--	1,615	--	
1993	249	--	547	--	80	--	340	--	90	--	1,306	--	
1994	180	--	468	--	--	--	297	--	--	--	945	--	
1995	150	--	454	--	--	--	285	--	--	--	889	--	
1996	141	--	471.6	--	--	--	261.8	--	--	--	874.4	--	
1997	60	--	419.8	--	--	--	279.5	--	--	--	759.3	--	
1998	--	--	405.9	--	452	--	208.5	--	--	--	1,066.4	--	
1999	--	--	410	--	219	--	291.5	--	--	--	920.5	--	
Chukar	1972	712	91	1,423	131	950	37	1,012	69	984	58	5,081	386
	1973	1,063	119	1,494	167	72	10	705	48	702	68	4,036	412
	1974	125	31	1,591	107	564	43	440	30	1,115	67	3,835	278
	1975	188	30	808	85	892	41	908	88	786	55	3,582	299
	1976	875	75	964	110	465	32	727	67	687	66	3,718	350
	1977	405	50	1,198	120	601	37	600	71	429	44	3,233	322
	1978	359	28	459	42	135	14	315	23	536	52	1,804	159
	1979	546	54	793	76	415	22	293	23	267	14	2,314	189
	1980	283	68	1,668	124	235	12	0	0	53	10	2,239	214
	1981	330	56	591	49	147	11	245	21	260	32	2	169
	1982	473	34	571	56	475	35	260	37	101	9	1,880	171
	1983	17	15	190	17	20	2	488	44	103	7	818	85
	1984	654	81	303	32	--	--	--	--	118	16	1,075	129
	1985	236	73	453	36	--	--	--	--	174	12	863	121
	1986	394	65	432	37	--	--	135	14	--	--	961	116
	1987	813	119	398	36	0	3	305	32	175	23	1,691	213
	1988	379	35	457	49	60	7	--	--	180	14	1,076	105
	1989	105	17	505	30	11	8	--	--	144	12	765	67
	1990	--	21	1,190	77	--	--	85	8	235	20	1,510	126
	1991	0	0	311	18	0	0	0	0	225	11	536	29
1992	178	27	270	12	0	0	0	0	216	24	664	63	
1993	--	--	--	--	--	--	--	--	300	22	300	22	
1994	--	--	--	--	--	--	--	--	70	6	70	6	
1995	--	--	--	--	--	--	--	--	--	--	--	--	
1996	54	16.5	--	--	--	--	--	--	--	--	16.5	--	
	1997 Aerial Survey in Central Region Only												
	1998 Aerial Survey in Central Region Only												
	1999 Aerial Survey in Central Region Only												

Table 1 (continued)

Species	REGION												STATE TOTALS	
	Northern		Central		Southern		Northeastern		Southeastern		Miles	Hours		
	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours	Miles	Hours		
Wild Turkey														
1972	--	--	--	--	73	62	--	--	290	54	363	116		
1973	--	--	--	--	143	11	--	--	--	--	143	11		
1974	--	--	--	--	0	0	--	--	799	64	799	64		
1975	--	--	--	--	215	18	--	--	792	100	1,007	118		
1976	--	--	--	--	125	16	--	--	362	45	487	61		
1977	--	--	--	--	193	29	--	--	421	58	614	87		
1978	--	--	--	--	--	--	--	--	204	55	204	55		
1979	--	--	--	--	--	--	--	--	190	14	190	14		
1980	--	--	--	--	--	--	--	--	--	--	--	--		
1981	--	--	--	--	--	--	--	--	--	--	--	--		
1982	--	--	--	--	--	--	--	--	--	--	--	--		
1983	--	--	--	--	--	--	--	--	--	--	--	--		
1984	--	--	--	--	--	--	--	--	--	--	--	--		
1985	--	--	--	--	--	--	--	--	--	--	--	--		
1986	--	--	--	--	--	--	--	--	41	15	41	15		
1987	--	--	--	--	--	--	--	--	--	--	--	--		
1988	--	--	--	--	--	--	--	--	--	--	--	--		
1989	--	--	--	--	--	--	--	--	--	--	--	--		
1990	--	--	--	--	--	--	--	--	--	--	--	--		
1991	--	--	155	68	--	--	--	--	150	15	305	83		
1992	--	--	100	16	--	--	--	--	35	6	135	22		
1993	--	--	--	--	--	--	57	3	117	9	174	12		
1994	--	--	--	--	--	--	--	--	--	--	--	--		
1995	--	--	--	--	--	--	--	--	--	--	--	--		
1996	--	--	433	84	--	--	--	--	--	--	433	84		
1997	--	--	65	16	--	--	--	--	--	--	65	16		
1998	--	--	--	--	--	--	--	--	--	--	--	--		
1999	--	--	--	--	--	--	--	--	--	--	--	--		
Cottontail Rabbit														
1972	510	--	279	--	939	--	360	--	555	--	2,643	--		
1973	337	--	242	--	879	--	270	--	270	--	1,998	--		
1974	270	--	180	--	1,040	--	370	--	542	--	2,402	--		
1975	330	--	231	--	1,237	--	340	--	712	--	2,850	--		
1976	510	--	260	--	1,382	--	300	--	636	--	3,088	--		
1977	360	--	262	--	1,329	--	400	--	556	--	2,907	--		
1978	382	--	264	--	1,038	--	300	--	761	--	2,745	--		
1979	270	--	270	--	903	--	400	--	580	--	2,423	--		
1980	90	--	265	--	655	--	359	--	540	--	1,909	--		
1981	270	--	270	--	903	--	400	--	580	--	2,423	--		
1982	240	--	240	--	722	--	298	--	602	--	2,102	--		
1983	90	--	90	--	822	--	340	--	590	--	1,932	--		
1984	--	--	--	--	177	--	356	--	340	--	196	--		
1985	--	--	--	--	175	--	631	--	400	--	450	--		
1986	240	--	148	--	534	--	358	--	330	--	1,610	--		
1987	150	--	120	--	669	--	373	--	240	--	1,552	--		
1988	--	--	--	--	129	--	604	--	379	--	360	--		
1989	90	--	66	--	90	--	266	--	360	--	872	--		
1990	150	--	62	--	97	--	210	--	360	--	879	--		
1991	90	--	33	--	--	--	105	--	330	--	558	--		
1992	60	--	143	--	90	--	204	--	360	--	857	--		
1993	--	--	183	--	--	--	207	--	360	--	750	--		
1994	--	--	--	--	--	--	148	--	--	--	148	--		
1995	--	--	242	--	--	--	203	--	--	--	445	--		
1996	--	--	278	--	--	--	220	--	--	--	498	--		
1997	--	--	270	--	--	--	251	--	--	--	521	--		
1998	554	--	270	--	360	--	127	--	90	--	1,401	--		
1999	563	--	180	--	570	--	236	--	90	--	1,639	--		

Appendix D

Season dates, bag limits and areas open by upland game species, 1999.

Species	Season Dates	Areas Open	Bag Limit	Possession Limit*	Footnotes
(*Possession limit means the number of bag limits one individual may legally possess.)					
Mourning Dove	Sept. 1-Sept. 30, 1999	Statewide, except closed areas.	10	2 bag limits	
Band-tailed Pigeon	Sept. 1-Sept. 30, 1999	Beaver, Garfield, Grand, Iron, Kane, Millard, Piute, San Juan, Sanpete, Sevier, Utah, Washington, and Wayne counties.	5	2 bag limits	g Band-tailed pigeon permit required. g Permits are available at all Division offices at no charge.
White-tailed Ptarmigan	Sept. 4-Oct. 17, 1999	Daggett, Duchesne, Summit, and Uintah counties.	4	2 bag limits	g Ptarmigan permit required. g Permits are available at all Division offices at no charge.
Forest Grouse (blue and ruffed)	Sept. 11-Nov. 30, 1999	Statewide, except closed areas.	4	2 bag limits	g Limits singly or in aggregate.
Sharp-tailed Grouse	Nov. 6-Nov. 14, 1999	Hunt #004 East Box Elder: That part of Box Elder County beginning at the junction of I-15 and SR-83; then west on SR-83 to Lampo Junction; west along the Union Pacific/Central Pacific Railroad Grade to Locomotive Springs; north on the Locomotive Springs-Snowville-Stone, Idaho Road to the Utah-Idaho border; east along this border to I-15; south on I-15 to SR-83.	Only 2 birds of either sex may be taken during the entire season.		g Sharp-tailed grouse permit required. g 663 two-bird permits available.

Chukar Partridge	Sept. 18- Nov. 30, 1999	<ul style="list-style-type: none"> g Cache, Daggett, Davis, Iron, Millard, Morgan, Rich, Sanpete, Summit, Wasatch and Weber counties. g Those parts of Beaver, Iron, Juab, Millard, Salt Lake and Utah counties east of I-15. g That part of Box Elder County east of I-15. g That part of Sevier County north of I-70. 	5	2 bag limits	g Antelope Island is closed to upland game hunting.
	Sept. 18- Dec. 31, 1999	That part of Box Elder County beginning at the junction of I-15 and SR-83; then west on SR-83 to Lampo Junction; west along the Union Pacific/Central Pacific Railroad Grade to Locomotive Springs; north on the Locomotive Springs-Snowville-Stone, Idaho Road to the Utah-Idaho border; east along this border to I-15; south on I-15 to SR-83.	5	2 bag limits	
	Sept. 18, 1999-Jan. 31, 2000	<ul style="list-style-type: none"> g Carbon, Duchesne, Emery, Garfield, Grand, Kane, Piute, San Juan, Tooele, Uintah, Washington and Wayne counties. g Those parts of Beaver, Iron, Juab, Millard, Salt Lake and Utah counties west of I-15. g That part of Box Elder County west of I-15 and south of SR-83, south of the Union Pacific/Central Pacific Railroad Grade, and west of the Locomotive Springs-Snowville-Stone, Idaho Road. g That part of Sevier County south of I-70. g The Box Elder County Cooperative Wildlife Management Unit as posted and marked. 	5	2 bag limits	g Please call Reggie Petersen at 435-854-3978 for more information about the Box Elder County Cooperative Wildlife Management Unit.

Sage Grouse	Sept. 18-Sept. 26, 1999	<p>g All of Grand County north of I-70.</p> <p>g That part of Box Elder County west of the Locomotive Springs-Snowville-Stone, Idaho Road.</p> <p>g All of Daggett County except the area beginning on the east shore of Flaming Gorge Reservoir and the Utah/Wyoming state line; then east on this state line to the Utah/Colorado state line; south on this state line to the Green River; northwest on the Green River and the east shore of Flaming Gorge Reservoir to the Utah/Wyoming state line.</p> <p>g All of Duchesne County north and east of the Duchesne River.</p> <p>g All of Uintah County except the area beginning at US-40 and the Green River in Jensen; then east on this highway to the Utah/Colorado state line; south on this state line to the White River; west on this river to the Green River; northeast on this river to US-40.</p>	1	2 bag limits	
	Sept. 18-Sept. 24, 1999	<p>g Rich County.</p> <p>g Parker Mountain -- beginning at the junction of US-89 and I-70 near Sigurd; south on US-89 to SR-24; south on this highway to SR-62; south on this highway to SR-22; south on this highway to Antimony; south on the Johns Valley Road through Widstoe to Bryce Junction and SR-12; east and north on this highway to SR-24; west on this highway to SR-72 at Loa; north on this highway to I-70; west on this highway to US-89.</p>	1	2 bag limits	

Hungarian Partridge	Sept. 18-Nov. 30, 1999	<p>g Cahce, Davis, Morgan, Rich, Summit and Weber counties.</p> <p>g That part of Box Elder County east of I-15.</p> <p>g That part of Juab County east of I-15.</p>	5	2 bag limits	
	Sept. 18-Dec. 31, 1999	<p>g That part of Box Elder County beginning at the junction of I-15 and SR-83; then west on SR-83 to Lampo Junction; west along the Union Pacific/Central Pacific Railroad Grade to Locomotive Springs; north on the Locomotive Springs-Snowville-Stone, Idaho Road to the Utah-Idaho border; east along this border to I-15; south on I-15 to SR-83.</p>	5	2 bag limits	
	Sept. 18, 1999-Jan. 31, 2000	<p>g Tooele County.</p> <p>g That part of Box Elder County west of I-15 and south of SR-83, south of the Union Pacific/Central Pacific Railroad Grade, and west of the Locomotive Springs-Snowville-Stone, Idaho Road.</p> <p>g That part of Juab County west of I-15.</p> <p>g The Box Elder County Cooperative Wildlife Management Unit as posted and marked.</p>	5	2 bag limits	<p>g Please call Reggie Petersen at 435-854-3978 for more information about the Box Elder County Cooperative Wildlife Management Unit.</p>
Cottontail Rabbit	Sept. 18, 1999-Feb. 29, 2000	Statewide, except closed areas.	10	2 bag limits	
Snowshoe Hare	Sept. 18, 1999-Feb. 29, 2000	Statewide, except closed areas.	5	2 bag limits	
<p>Jackrabbit (white-tailed and black-tailed)</p> <p>*Jackrabbits are not protected in Utah. They are not under Wildlife Board authority and by be hunted without a license, year-round.</p>					

Pheasant	Nov. 6-Nov. 21, 1999	<p>g Statewide except closed areas.</p> <p>g In Weber County, the Willard Bay, and in Duchesne County, the Mallard Springs WMA will be closed on Saturday, Nov. 13 to general public hunting. A special youth upland game hunt will be conducted on these WMAs on Nov. 13. These areas will reopen to general public hunting on Nov. 14.</p>	2	2 bag limits	<p>g Males only may be harvested.</p> <p>g Hunting begins at 8 a.m. on opening day.</p> <p>g Only in certain counties are state and federal lands open to 30 days of pheasant hunting. Check the proclamation carefully!</p>
	Nov. 6-Nov. 12, 1999	In all of Utah County, except the Powell Slough and Goshen Warm Springs wildlife management areas, the pheasant hunt closes on Nov. 12, 1999.	2	2 bag limits	
	Nov. 6-Dec. 5, 1999	<p>***CAUTION*** Not all counties are open for 30 day pheasant hunting. Only the following areas are open: All state and federal land in Carbon, Duchesne, Emery, Grand, Juab, Millard, San Juan, Sanpete, Sevier, Tooele, and Uintah counties (including private land leased by the Division subject to restrictions and closures imposed by administering agencies).</p> <p>g The Box Elder County Cooperative Wildlife Management Unit as posted and marked.</p> <p>g The Powell Slough and Goshen Warm Springs wildlife management areas as posted and marked in Utah County.</p> <p>g In Millard County, the Pahvant WMA, and in Tooele County, the James Walter Fitzgerald WMA, will be closed on Saturday, Nov. 13 to general public hunting. A special youth upland game hunt will be conducted on these WMAs on Nov. 13. These areas will reopen to general public hunting on Nov. 14.</p>	2	2 bag limits	g Please call Reggie Petersen at 435-854-3978 for more information about the Box Elder County Cooperative Wildlife Management Unit.
Quail (California and Gambels)	Nov. 6-Nov. 21, 1999	<p>g Box Elder, Carbon, Davis, Grand, Juab, Kane, Millard, Piute, Salt Lake, San Juan, Sevier, Tooele, Utah, and Weber Counties.</p> <p>g Daggett County is closed.</p> <p>g All of Emery County, except the Desert Lake Waterfowl Management Area, which is closed.</p>	5	2 bag limits	g Hunting begins at 8 a.m. on opening day.
	Nov. 6-Dec. 31, 1999	Duchesne, Uintah, and Washington counties.	5	2 bag limits	

1999 WILD TURKEY SEASON DATES, AREAS OPEN & SEASON LIMITS

RIO GRANDE

HUNT NAME	HUNT NUMBER	SEASON DATES	SEASON LIMIT	AREAS OPEN
BEAVER (early)	101a	Apr 10-Apr 23, 1999	One Male	AREAS OPEN: Beginning at I-15 and SR-20; north on I-15 to I-70; east on I-70 to US-89; south on US-89 to SR-20; west on SR-20 to I-15.
BEAVER (late)	101b	Apr 24-May 16, 1999	One Male	
DUCHESNE COUNTY (early)*	102a	Apr 10-Apr 23, 1999	One Male	AREAS OPEN: All of Duchesne County, except the Strawberry River drainage above Starvation Reservoir, which is closed.
DUCHESNE COUNTY (late)*	102b	Apr 24-May 16, 1999	One Male	
WEST EMERY COUNTY*	103	Apr 10-May 16, 1999	One Male	AREAS OPEN: All of Emery County west of US-6 and north of I-70.
FILLMORE (early)	104a	Apr 10-Apr 23, 1999	One Male	AREAS OPEN: Millard, Sevier, Sanpete and Juab counties. Beginning at I-70 and I-15; then north on I-15 to the Black Rock road; then west on the Black Rock road to SR-257; then north on SR257 to US-50 and 6; then east on US-50 and 6 to US-6; then north on US-6 to SR-132; then east on SR-132 to SR-28; then south on SR-28 to US-89; then south on US-89 to I-70; then south and west on I-70 to I-15.
FILLMORE (late)	104b	Apr 24-May 16, 1999	One Male	
COLORADO RIVER (A)*	105a	Apr 10-Apr 18, 1999	One male	AREAS OPEN: Grand County - one mile either side of the Colorado and Dolores rivers from the Colorado state line to Dewey bridge.
COLORADO RIVER (B)*	105b	Apr 19-May 2, 1999	One male	
COLORADO RIVER (C)*	105c	May 3-May 16, 1999	One male	
GREEN RIVER (A)*	106a	Apr 10-Apr 18, 1999	One Male	AREAS OPEN: Emery and Grand counties - two miles either side of the Green River from the confluence of the Price River to Ten Mile Canyon.
GREEN RIVER (B)*	106b	Apr 19-May 2, 1999	One Male	
GREEN RIVER (C)*	106c	May 3-May 16, 1999	One Male	
MILFORD THIS HUNTING UNIT IS CLOSED DUE TO SIGNIFICANT WILDFIRES IN SUMMER 1996	107		One Male	Boundary begins at Milford; then north on SR-257 to Negro Mag Wash; east on Negro Mag Wash to Cunningham Wash; south on Cunningham Wash to Wildcat Creek; south on Wildcat Creek to Indian Creek; south on Indian creek to SR-21; west and north on SR-21 to Milford.
MONROE MOUNTAIN	108	Apr 10-May 16 1999	One Male	AREAS OPEN: Piute and Sevier counties - Beginning at I-70 and US-89 at Sevier; then south on US-89 to SR-62; east and north on SR-62 to SR-24; north on SR-24 to US-89; then north on US-89 to I-70.
MORGAN-SOUTH RICH*	109	Apr 17-May 16, 1999	One Male	AREAS OPEN: Morgan, Rich, Summit and Weber counties. Beginning at the junction of I-84 and I-80 near Echo; then northeast on I-80 to the Utah-Wyoming state line; north along this state line to SR-16; north on SR-16 to SR-39 near Woodruff; west on SR-39 to SR-167 (Trappers Loop Road); south on SR-167 to SR-30 at Mountain Green; west on SR-30 to I-84; east on I-84 to I-80.
OGDEN	110	Apr 17-May 16, 1999	One Male	AREAS OPEN: Weber, Box Elder, Cache, and Morgan counties - Beginning at Hyrum; then east on SR-101 to the Ant Flat Road (at Hardware Ranch); south on this road to SR-39; west and south on SR-39 to SR-167 (the new Trappers Loop Road); south on this highway to I-84; west on I-84 to I-15; north on I-15 to exit 364 and US-91; east and north on US-91 to SR-101; east on this highway to Hyrum.
PINE VALLEY* (early)	111a	Apr 10-Apr 23, 1999	One Male	AREAS OPEN: Iron and Washington counties. Beginning at I-15 and SR-18; north on I-15 to Sr56; west on SR-56 to the Lund Highway; northwest on the Lund Highway to the Union Pacific railroad tracks at Lund; southwest on the Union Pacific railroad tracks to US-56 at Modena; east on SR-56 to SR-18; south on SR-18 to I-15.
PINE VALLEY* (late)	111b	Apr 24-May 16, 1999	One Male	

SAN JUAN (early)	112a	Apr 24-May 4, 1999	One Male	AREAS OPEN: Beginning at Moab at the junction of the Colorado River and US-191; then south on US-191 to the Big Indian Road; east on this road to the Lisbon Valley Road; east on this road to the Island Meas Road; east on this road to the Colorado state line; south on this state line to the Navajo Indian Reservation boundary; west on this boundary to Lake Powell; north on this lake to the Colorado River; north on this river to Moab.
SAN JUAN (late)	112b	May 8-May 30, 1999	One Male	
UINTAH COUNTY (early)*	113a	Apr 10-Apr 23, 1999	One Male	AREAS OPEN: All of Uintah County except that portion south of the White River and east of the Green River below the White River confluence.
UINTAH COUNTY (late)*	113b	Apr 24-May 16, 1999	One Male	
UTAH COUNTY (NORTH) (A)	114a	Apr 3-Apr 11, 1999	One Male	AREAS OPEN: That part of Utah County east of I-15 and north of US-6
UTAH COUNTY (NORTH) (B)	114b	Apr 14-Apr 25, 1999	One Male	
UTAH COUNTY (NORTH) (C)	114c	Apr 28-May 9, 1999	One Male	
UTAH COUNTY (SOUTH)(A)	115a	Apr 3-Apr 11, 1999	One Male	AREAS OPEN: That part of Utah County east of I-15 and south of US-6.
UTAH COUNTY (SOUTH)(B)	115b	Apr 14-Apr 25, 1999	One Male	
UTAH COUNTY (SOUTH)(C)	115c	Apr 28-May 9, 1999	One Male	
WASATCH COUNTY	116	Apr 24-May 9, 1999	One Male	AREAS OPEN: All of Wasatch County.
WEST PINE VALLEY	117	Apr 10-May 16, 1999	One Male	AREAS OPEN: Iron and Washington counties - Beginning at I-15 and SR-18; north on SR-18 to SR-56; west on SR-56 to the Nevada-Utah state line; south on this state line to the Arizona-Utah state line; east on this state line to I-15; north on I-15 to SR-18.
PAUNSAUGUNT	118	Apr 10-May 16, 1999	One Male	AREAS OPEN: Beginning at US-89A and the Utah-Arizona state line; north on US-89A to US89; north on US-89 to SR-12 to the Paria River; south along the Paria River to the Utah-Arizona state line; west along the state line to US-89A.
JUAB	119	Apr 24-May 9, 1999	One Male	AREAS OPEN: All of Juab County east of I-15.
CAINEVILLE	120	Apr 10-May 16, 1999	One Male	AREAS OPEN: One mile either side of the Fremont river from Capital Reef National Park to Hanksville.
*HUNTS COMPRISED OF ALL OR LARGELY PRIVATE PROPERTY. BEFORE APPLYING FOR THE HUNT, HUNTERS SHOULD OBTAIN WRITTEN PERMISSION FROM THE LANDOWNER TO ACCESS PRIVATE PROPERTY.				

MERRIAM'S

HUNT NAME	HUNT NUMBER	SEASON DATES	SEASON LIMIT	AREAS OPEN
BOULDER MOUNTAIN (early) BOULDER MOUNTAIN (late)	201a 201b	Apr 24-May 4, 1999 May 8-May 30,1999	One Male One Male	AREAS OPEN: Sevier, Wayne, Piute and Garfield counties. Beginning at SR-24 and US-89 at Sigurd; then south on SR-24 to SR-62; then south on SR-62 to SR-22; then south on SR-22 to the Antimony-Widstoe road; then south on this road to SR-12; then east on SR-12 to the Burr Trail at Boulder; then east on this road to the Notom road; then north on the Notom road to SR-24; then east on SR-24 to the Caineville road; then north on this road to I-70; then west on I-70 to US-89; then south on US-89 to SR-24.
LASAL (early) LASAL (late)	203a 203b	Apr 24-May 4, 1999 May 8-May 30, 1999	One Male One Male	AREAS OPEN: Boundary begins at the junction of SR-128 and US-191; then south on US-191 to SR-46; east on SR-46 to the Lisbon Valley Road; southeast on this road to the Island Mesa Road; east on this road to the Utah-Colorado state line; north on this state line to a point one mile south of the Dolores River; west on a line one mile south of the Dolores River to SR-128; southwest on SR-128 to US-191.
ZION (early) ZION (late)	204a 204b	Apr 24-May 4, 1999 May 8-May 30, 1999	One Male One Male	AREAS OPEN: Zion (early) - Iron, Kane and Washington counties. Beginning at I-15 and the Utah-Arizona state line; then north on I-15 to SR-14; then east on SR-14 to US-89; then south on US-89 to US-89A; then south on US-89A to the Utah-Arizona state line; then west on this state line to I-15. Zion (late) - Iron, Kane and Garfield counties. Beginning at SR-14 and US-89; then north on US-89 to SR-20; then west on SR-20 to I-15; then south on I-15 to SR-14; then east on SR-14 to US-89.
*HUNTS COMPRISED OF ALL OR LARGELY PRIVATE PROPERTY. BEFORE APPLYING FOR THE HUNT, HUNTERS SHOULD OBTAIN WRITTEN PERMISSION FROM THE LANDOWNER TO ACCESS PRIVATE PROPERTY.				

APPENDIX E. Summary of upland game harvest questionnaire returns, 1962-98.

Year	Questionnaires	Total		Useable		Licensees Who
	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	--
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%
1990	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%
1992	16,472	6,207	37.7	5,977	36.3	45.0%
1993	16,534	6,293	38.1	5,442	32.9	42.6%
1994	15,526	5,433	35.0	5,131	33.0	45.1%
1995	14,777	4,951	33.5	4,866	32.9	41.7%
1996	14,088	4,090	29.0	4,028	28.6	36.2%
1997	13,689	4,488	32.8	4,338	31.7	40.0%
1998	14,497	5,536	38.2	3,862	26.6	43.5%
1999	14,630	6,082	41.6	5,426	37.1	39.6%