University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Nebraska Game and Parks Commission -- White Papers, Conference Presentations, & Manuscripts

Nebraska Game and Parks Commission

1-1-1960

Annual Report- Game Division

Lloyd P. Vance
Nebraska Game and Parks Commission

Shirley Lindholm
Nebraska Game and Parks Commission

Follow this and additional works at: http://digitalcommons.unl.edu/nebgamewhitepap

Part of the Environmental Sciences Commons

Vance, Lloyd P. and Lindholm, Shirley, "Annual Report- Game Division" (1960). *Nebraska Game and Parks Commission -- White Papers, Conference Presentations, & Manuscripts.* Paper 44.
http://digitalcommons.unl.edu/nebgamewhitepap/44

This Article is brought to you for free and open access by the Nebraska Game and Parks Commission at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Game and Parks Commission -- White Papers, Conference Presentations, & Manuscripts by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

ANNUAL REPORT

1960

GAME DIVISION

Administration

Lloyd P. Vance - Chief
Shirley Lindholm - Secretary

Game Farm

Orden E. Allen - Superintendent - Norfolk
Orvid L. Lynch - Sacramento

State Trapper

Harold Miner - Wakefield

Federal Aid
Pittman-Robertson

William Bailey - Project Leader
Karen Snyder - Senior Stenographer

Raymond Linder/Ken Johnson - Assistant Project Leader - Upland Game - Lincoln
George Schildman - Assistant Project Leader - Waterfowl - Lincoln
John Mathisen - District Game Supervisor - Alliance
Jack Walstrom - District Game Supervisor - Bassett
H. O. Compton - District Game Supervisor - Norfolk
Ken Johnson/Jim Norman - District Game Supervisor - North Platte
Karl Menzel - District Game Supervisor - Lincoln

Intensive Pheasant Study

David Lyon - Biologist - Fairmont
Jim Norman/Carl Wolfe - Assistant Biologist - Fairmont

Big Game

Harvey Suetsugu - Associate Biologist - Alliance

Grouse

Marvin Schwilling - Biologist - Burwell

Waterfowl

John Sweet - Associate Biologist - Bassett

Wetlands Survey

Marvin McMurtrey - Assistant Biologist - Lincoln

PERSONAL APPEARANCES

	Number of Appearances	Attendance
Bill Bailey	3	108
H. O. Compton	5	217
Ken Johnson	8	356
John Mathisen	8	173
Marvin McMurtrey	1	57
Karl Menzel	7	223
Jim Norman	2	90
George Schildman	2	79
Marvin Schwilling	3	175
Harvey Suetsugu	5	234
Lloyd Vance	14	1,402
Jack Walstrom	1	60
Total	59	3,174

OUTGOING MAIL

Game Administration	21,149 pieces
Federal Aid	32,532 pieces
Total	53,681 pieces

GAME FARM PERMITS

Two classes of game farm permits were made available by the 1957 legislature to persons keeping protected species of wildlife in captivity. A pet or fancier permit authorizes the possession of fifty or less game birds or game animals where no commerical use is made of such wildlife. A commercial permit authorizes the possession of game birds and game and fur-bearing animals, regardless of number, where trade, sale, barter, or any commerical use is involved. During 1960, 195 pet permits and 92 commercial permits were issued for a total of 287 permits. In 1959 a total of 432 permits were issued. In 1960 the fee for a pet permit was $1.00 and the fee for a commercial permit was $10.00. The revenue for 287 permits was $1,115.00 as compared to $1,467.00 received for 432 permits in 1959.

SCIENTIFIC PERMITS

The laws provide that permits may be issued accredited persons to take for scientific or educational purposes only, protected species of wildlife. In 1960 59 such permits were issued. Seventy-six permits were issued in both 1959 and 1958.

HUNTING SEASON DATES

	1958	1959	1960
Grouse	Oct. 1-Oct. 12	Oct. 3-Oct. 18	Oct. 1-Oct. 16
Ducks	Oct. 1-Dec. 29	Oct. 10-Dec. 8	Oct. 8-Nov. 26
Geese	Oct. 1-Nov. 29 (Canada)	Oct. 10-Dec. 23	Oct. 8-Dec. 21
	Oct. 1-Dec. 14 (Blue & Snow)		
Snipe	Oct. 1-Oct. 30	Oct. 10-Nov. 8	Oct. 8-Nov. 6
Rails & Gallinules	Oct. 4-Dec. 12	Oct. 3-Nov. 21	Oct. 8-Nov. 26
Woodcock	Oct. 4-Nov. 12	No open season	No open season
Pheasant	Oct. 25-Dec. 7	Oct. 24-Dec. 27	Oct. 22-Jan. 8, 1961
Quail	Oct. 25-Dec. 7	Oct. 24-Dec. 23	Oct. 22-Nov. 20
			Oct. 22-Dec. 11
Rabbit	Jan. 1-Dec. 31	Jan. 1-Dec. 31	Jan. 1-Dec. 31
Squirrel	Sept. 13-Dec. 31	Sept. 12-Dec. 31	Sept. 10-Dec. 31
Opossum	Jan. 1-Dec. 31		
Raccoon	Jan. 1-Dec. 31		
Antelope	No open season	Sept. 12-Sept. 14	Sept. 10-Sept. 12
Deer	Nov. 1-Nov. 5	Nov. 7-Nov. 11	Nov. 5-Nov. 9
Deer (Bow and Arrow)	Sept. 13-Dec. 31	Sept. 12-Dec. 31	Sept. 10-Nov. 4
			Nov. 10-Dec. 31

WILDCAT HILLS BIG GAME RESERVE
(Sales)

	1958	1959	1960
Buffalo	None	3 - $352.50	None
Elk	None	None	None
Buffalo Hides	None	None	None
Elk Hides	None	2 - $ 10.00	None
	None	$362.50	None

1960 PHEASANT RELEASE DATA

County	Spring Release	Breeders	Surplus Cocks	Total
Antelope	720	---	---	720
Boyd	---	580	---	580
Burt	600	---	400	1,000
Colfax	---	---	400	400
Dodge	---	---	400	400
Gage	40	---	---	40
Holt	---	620	---	620
Nance	80	---	---	80
Platte	80	---	240	320
Thurston	580	---	---	580
Washington	600	---	400	1,000
Total	2,700	1,200	1,840	5,740

At Sacramento in Phelps County we are holding for 1961 spring release 1,294 pheasants -- 970 hens and 324 cocks.

PHEASANTS

Spring pheasant counts revealed that the 1960 breeding population was about 25 percent below what it was in 1959. It was still above the average for the past eight years (Figure 1). Production was improved in 1960 and as a result the fall population was only slightly lower than during the past year. Of importance was the fact that the population in the major pheasant range remained at the same level or improved from that reported in 1959.

The state was divided into two zones to disperse hunters into the better pheasant production areas. The zone boundaries remained the same as those employed in 1959.

The ratio of young to old birds during the hunting season was higher in 1960 than in 1959 (6.6 young cocks per adult cock in 1960 as compared to 4.6 to 1 in 1959). The increased age ratio in part is a reflection of lower sex ratios in 1960, but it also indicates better production, corroborating pre-season surveys.

GROUSE

The 1960 breeding population survey indicated that grouse numbers were below the 1959 record high but still equal to the average for the past five years (Figure 2). Prairie chickens showed a decline of 35 percent and sharptails dropped 38 percent from 1959. Better production occurred in 1960 and resulted in a fall population approximately 25 percent below the 1959 figure.

The area open to hunting in 1960 was extended to include all of the primary grouse range in the state. There were two main reasons for extending the open area: (1) Surveys conducted both in hunted and non-hunted areas indicated that population levels fluctuated together regardless of hunting, and (2) hunters could be more uniformly distributed throughout the grouse range. Since hunting was not adversely affecting the grouse population, it was desirable to include a greater portion of the grouse range and thus provide more hunting opportunities. Of necessity some areas along the periphery, not considered as suitable grouse habitat, were included to prevent concentrations of hunters along boundary lines and to simplify regulations.

Information from check stations operated during two weekends of the grouse season indicated 1.5 birds per hunter, 14 percent less than in 1959. Gun-hours per bird bagged remained about the same. Hunter success, based on a total of 2,231 hunter-days, was 1.23 birds per hunter-day. A direct comparison in birds per hunter day cannot be made with 1959 because hunter days were not recorded in 1959.

Of the total birds checked, 79 percent were sharptails and the remainder prairie chicken. This is the same proportion as found in past years.

Figure 1. Summer pheasant population trends from rural mail carriers' counts.

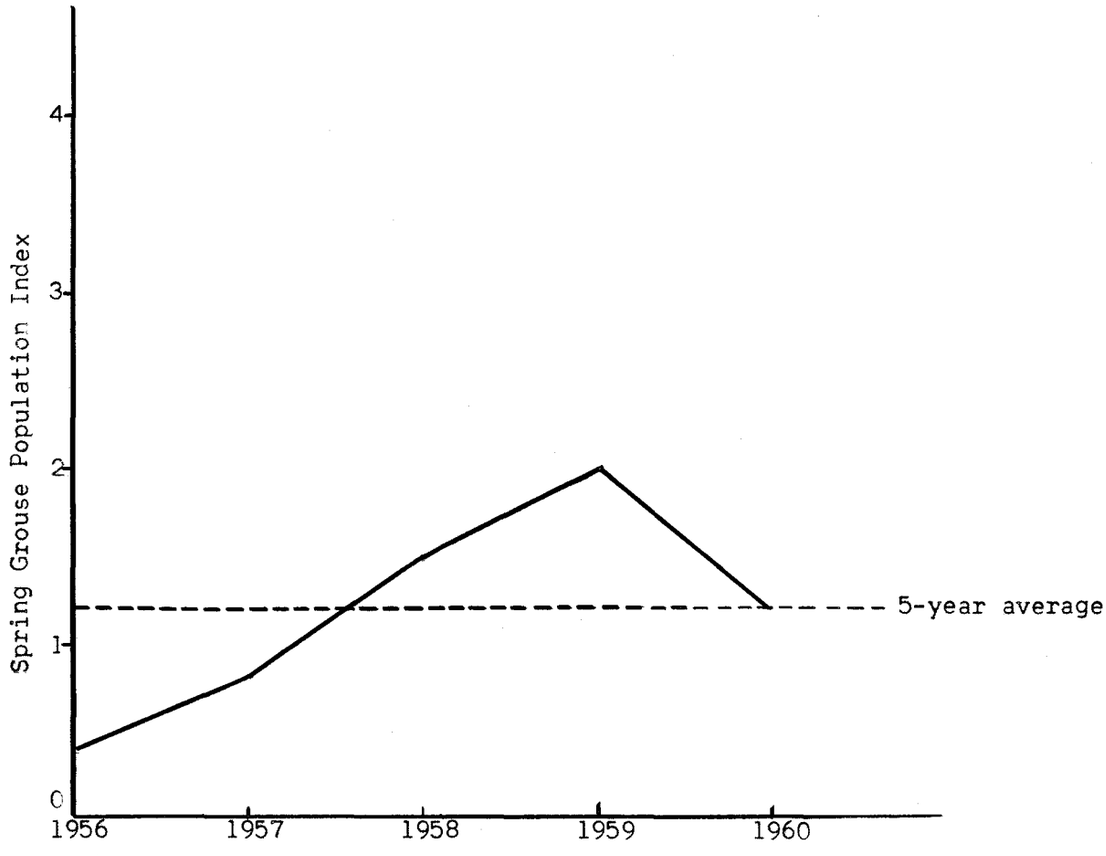


Figure 2. Prairie grouse population trends.

BOBWHITE QUAIL

Primarily because of the severe winter of 1959-60, state-wide bobwhite populations were down about 50 percent from 1959 (Figure 3). Greatest reductions were in marginal areas, while areas of better cover maintained fair populations.

Hunters who annually report their quail success to the Game Commission averaged 0.87 birds for each hour of hunting time, and coveys were flushed at the rate of 0.59 per hour. This was the lowest success recorded since 1953. Success was down 45 percent from 1959, and down 22 percent from the average (1947-1959).

Of 1,426 birds aged, 83.5 percent were young. This was similar to the average of 83.0 percent recorded during 12 of the last 15 years when sample size exceeded 500. The principal hatching peak occurred in the second week of July, with a secondary peak in the last week of August.

SCALED QUAIL

During 1960, 677 scaled quail were obtained from the New Mexico Fish and Game Department. Of these, 617 were released at 10 sites in the western Sandhills and in southwest Nebraska. Sixty birds were retained for pen-rearing.

The birds generally remained in the area of release and were sighted fairly regularly by the landowners on whose places they were turned out. In a few instances, where the birds left the release area, movements were usually not more than a few miles distant.

Summer reports indicate that during the nesting season, pairs of quail dispersed from the point of release. Reports on pairs of birds being sighted 4-10 miles from the area were quite common. Sufficient reports have been received to indicate that some reproduction did occur. Since the birds are dispersed onto surrounding ranches, it is difficult to determine total production.

There were approximately 12 scaled quail taken in Dundy County during the 1960 quail season. Of these birds, three had bands. The remaining birds were assumed to be young birds, which would indicate fair reproduction.

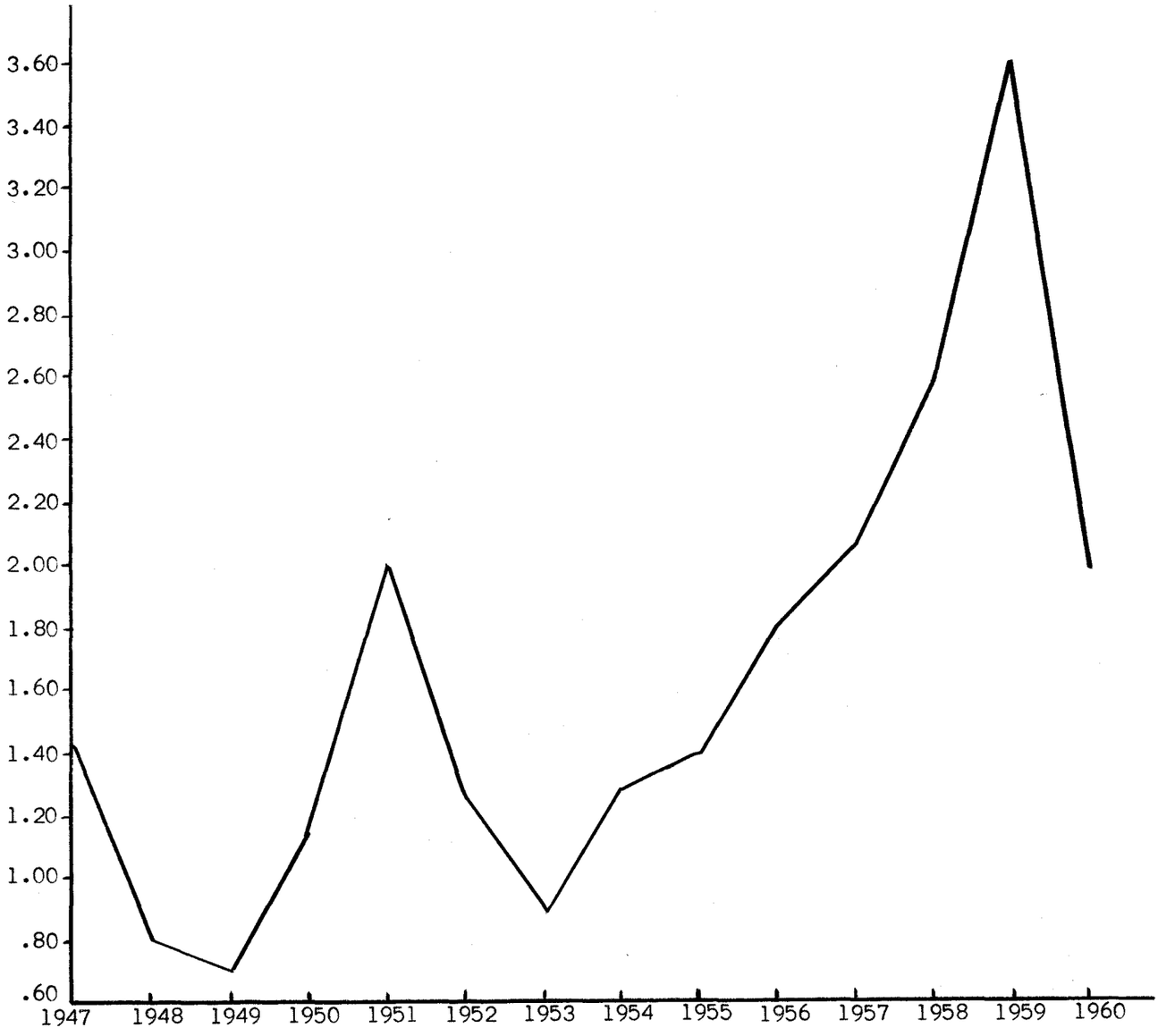
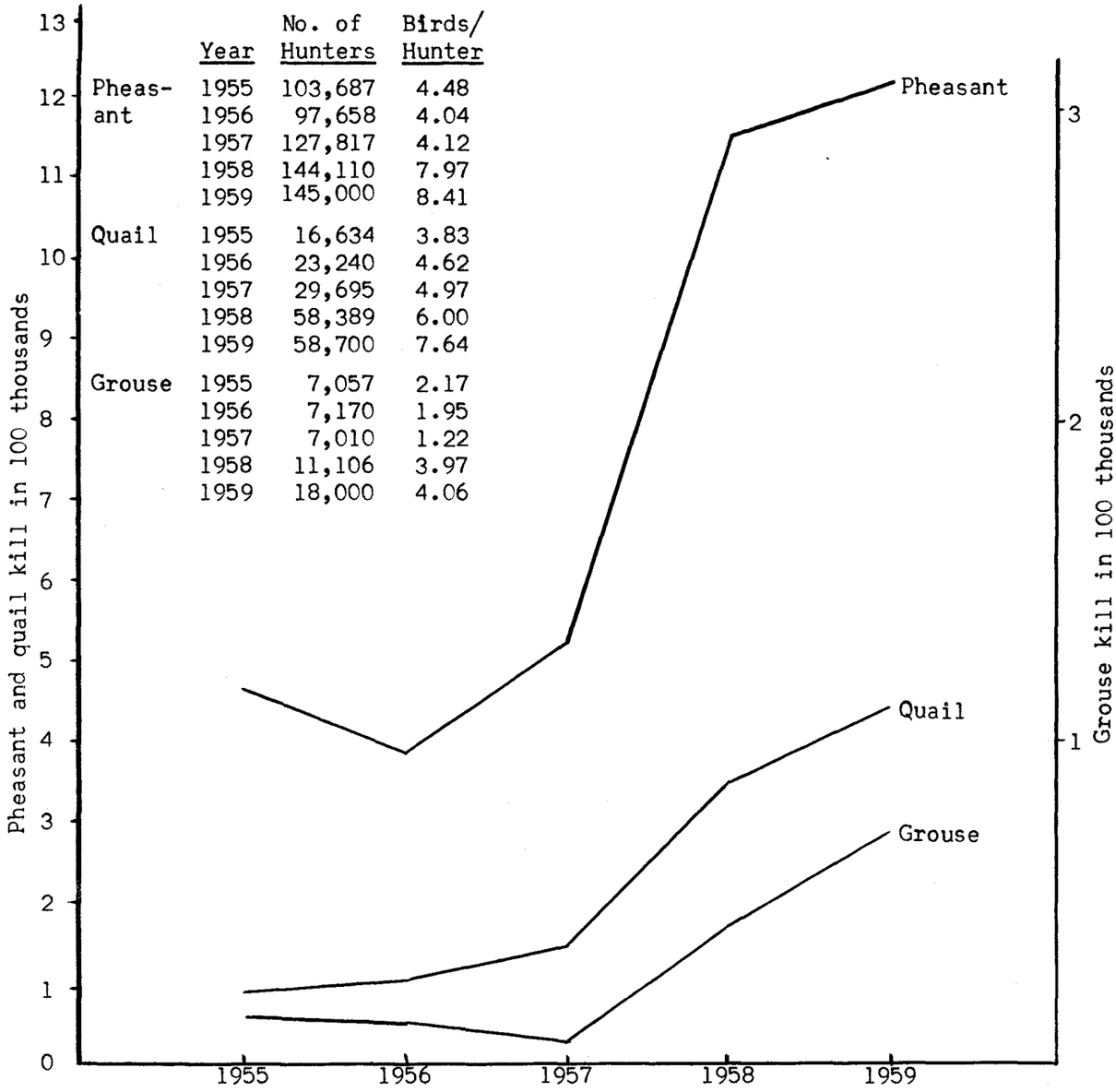


Figure 3. Bobwhite quail population trends from whistle counts.



	Year	No. of Hunters	Birds/ Hunter
Pheas-ant	1955	103,687	4.48
	1956	97,658	4.04
	1957	127,817	4.12
	1958	144,110	7.97
	1959	145,000	8.41
Quail	1955	16,634	3.83
	1956	23,240	4.62
	1957	29,695	4.97
	1958	58,389	6.00
	1959	58,700	7.64
Grouse	1955	7,057	2.17
	1956	7,170	1.95
	1957	7,010	1.22
	1958	11,106	3.97
	1959	18,000	4.06

Figure 4. Upland game bird harvest.

WILD TURKEY

Merriam's wild turkeys, obtained from Wyoming and South Dakota, were released in January and February, 1959, in the Pine Ridge. Twenty birds, 17 hens and three toms, were released in the Cottonwood Creek drainage northwest of Crawford and eight, five hens and three toms, were released in Deadhorse Canyon southwest of Chadron.

Production was highly successful in 1959, resulting in a flock of 89 turkeys in the Cottonwood Creek drainage prior to spring dispersal in 1960 and an estimated 25 in Deadhorse Canyon.

Dispersal was much greater in 1960 than in 1959. Broods from the Cottonwood release were observed 18 miles from the original release site as compared to 10 miles in 1959. Birds were observed as far west as the Wyoming-Nebraska state line and as far east and south as Bryant Canyon. Birds from the Deadhorse Canyon release were observed about 10 miles from the release site as compared to six in 1959.

Interviews with landowners and observations during December, 1960, indicated estimated population of 250 turkeys in six winter flocks for the Cottonwood Creek release. The estimated population for the release in Deadhorse Canyon was 50 to 75 turkeys.

RESEARCH PROJECTS

Two research projects are currently in progress. These studies are designed to provide basic information on the life history, ecology and management of pheasant and prairie-grouse resources. Such information can provide a broader base on which to modify or formulate sound management programs.

Pheasants: Intensive investigations of pheasants were begun on three study areas in Clay and Fillmore counties in 1954. Investigations have been carried on each year since 1954.

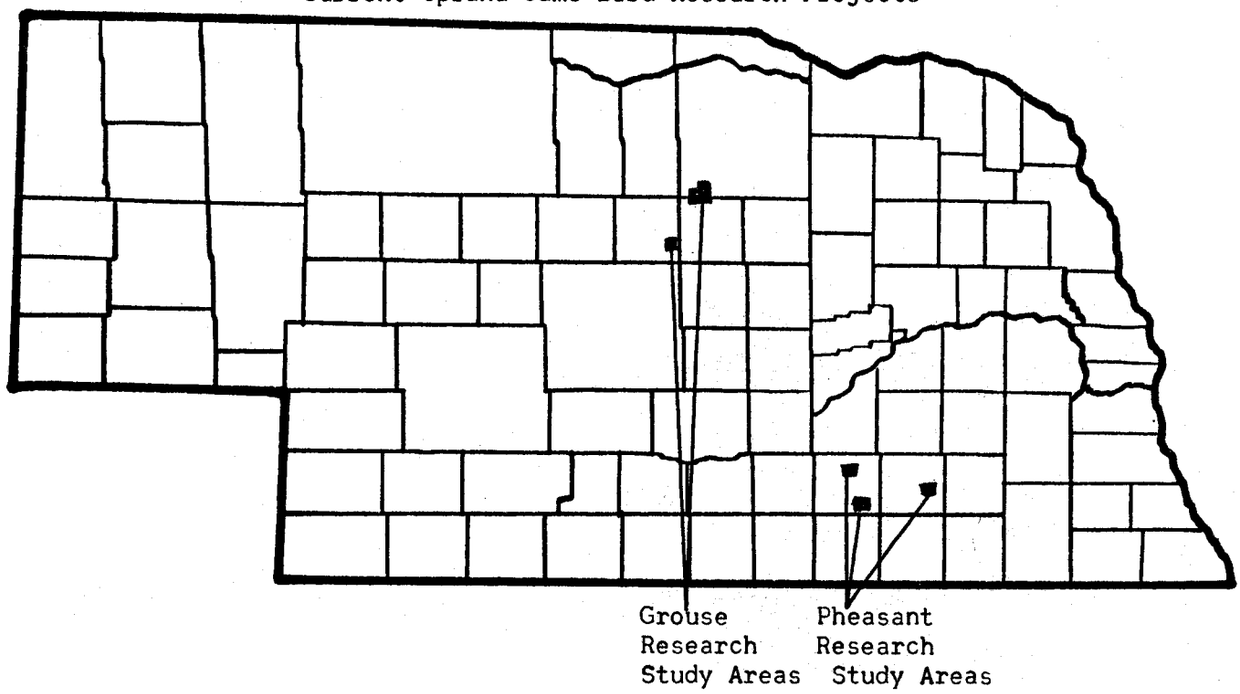
Objectives of the study are: (1) to gather information on minimum habitat requirements; (2) to obtain information for use in interpreting extensive survey data; and (3) to analyze production as a factor in population changes and to evaluate some of the environmental factors which influence production. The latter objective has received particular emphasis.

An analysis of nesting data was made for the first five years of the study. This paper, entitled An Analysis of Pheasant Nesting in South-central Nebraska, was presented at the 25th North American Wildlife Conference in March.

During the five years included in the analysis, nearly 90 percent of the nests on the study area were located in wheat, roadsides and alfalfa; about 90 percent of the total production of chicks came from nests in wheat and roadsides.

In a hypothetical "average year", hens established an average of 2.9 nests each. Forty-four percent of the hens produced young, and 7.8 chicks

Current Upland Game Bird Research Projects



hatched from each successful nest. An average of 3.4 chicks per hen was produced each year.

The percent of hens successful in producing young was the factor most closely related to fluctuations in the rate of production of chicks from year to year.

Each year's breeding population correlated closely with the preceding year's production and the average number of chicks produced for each hen seemed to offer a key to predicting increases or decreases in the following spring's population. A production index of 3.0 young per hen seemed to represent a threshold; when this figure was not attained, the following spring's population declined and when exceeded, the breeding population increased.

The quality of the nesting environment appeared to determine the number of nests which would be successful in a given year; this regulated production which in turn determined the level of the following year's breeding population.

Studies are being continued to gather data necessary to fulfill the objectives of the project.

Prairie Grouse: A prairie-grouse study, now in its third year, is being conducted on two 36-section study areas in Loup, Garfield and Holt counties. Objectives of the study are: (1) to devise inventory techniques that may be used in an extensive management program; (2) to test various proposed management measures; and (3) to obtain basic information pertaining to life history and ecology.

During 1960, particular emphasis was placed on development of techniques which may be used to determine production and fall populations. Other studies included movements based on marking of trapped birds, cover mapping and analysis of vegetation, harvest of grouse and hunting pressure on the study areas, and seasonal populations.

WATERFOWL

The severe drought conditions that existed over much of the duck-producing areas of the Dakotas and Canada resulted in a much reduced crop of young in 1959 and consequently a smaller fall flight. The over-water nesters (the divers) especially found little or no nesting habitat available. The result of fewer ducks and more stringent regulations was a reduction of 140,000 ducks bagged in Nebraska in 1959 than were bagged during the previous year. The goose season was a very successful one, though somewhat less than the excellent 1958 season.

Summary of the 1959 waterfowl harvest.

Year	Duck Stamps	Ave. Season Duck Bag	No. Ducks Killed	No. Geese Killed	No. Coot Killed	No. Snipe Killed
1955	58,330	9.8	662,520	12,560	3,330	---
1956	56,500	9.3	510,240	13,230	6,290	2,180
1957	67,400	10.9	697,050	12,500	12,750	2,500
1958	63,910	7.9	445,250	22,340	4,660	3,650
1959	49,880	7.5	305,860	15,900	2,070	5,080

Species harvest of waterfowl.

Mallard	206,455	Canvasback	3,060
Green-winged teal	28,140	Redhead	2,140
Blue-winged teal	22,940	Merganser	920
Pintail	15,600	Unknown	3,060
Gadwall	6,645	Canada goose	9,492
Baldpate	6,425	Blue & snow geese	5,184
Scaup	6,120	White-fronted geese	938
Shoveller	3,360	Unknown	286

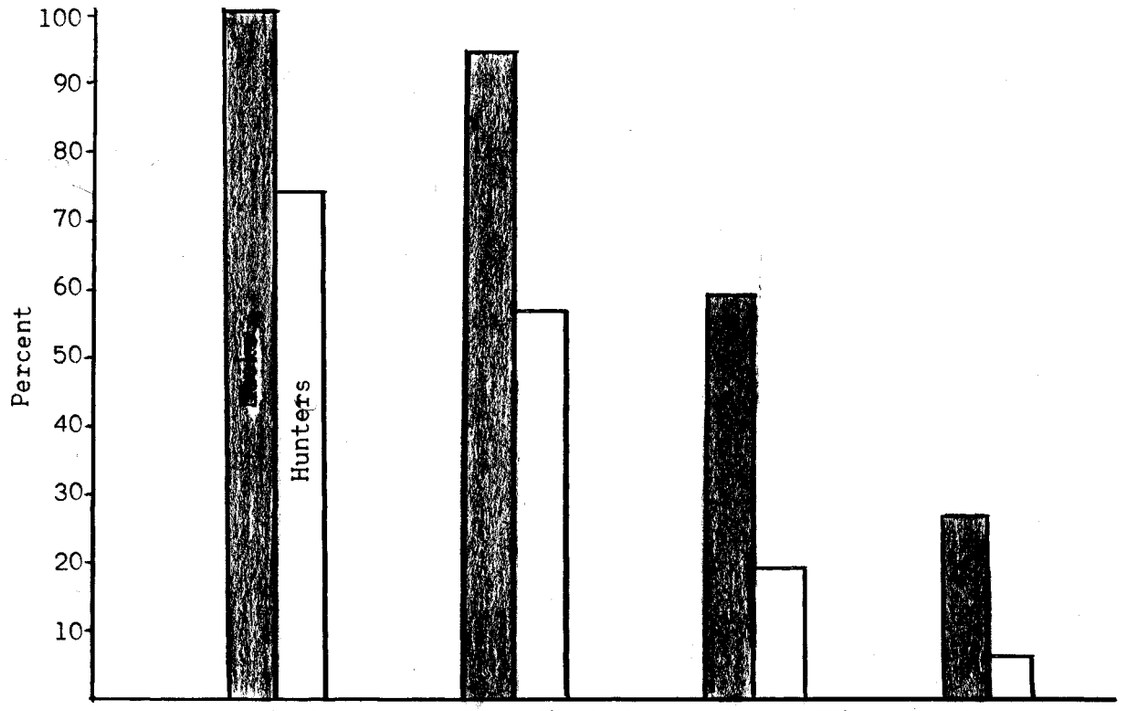
The 1960 spring duck breeding population was 44 percent above that of 1959. The Sandhills population was calculated at 143,000 ducks and another 39,000 in the rainwater basin area of southcentral Nebraska.

Water conditions were excellent in the eastern Sandhills and the southcentral part of the state. The central Sandhills had good to excellent water supplies, while the western part had good supply only in the spring. These western waters diminished rapidly. By late July, most pot holes and roadside ditches were dry, and the lakes were very low.

Production was good, and Nebraska's contribution to the flyway was improved over 1959.

Final calculations of the 1960 waterfowl harvest have not been completed at the time of this report. However, preliminary calculations indicate hunters experienced a poor duck season and one of their best goose seasons.

Hunter and seasonal duck bag.*



*Note: 100% of duck bag by 73% of the hunters; 27% of the harvest was taken by 5.5% of the hunters, etc.

WETLANDS

The major objectives of the wetland survey are to locate, describe and catalogue the characteristics of wetland areas, for determining priorities for acquisition, preservation or development of waterfowl habitat.

This survey started in 1959 and was continued during 1960. Most of three southcentral counties with the most wetlands have been completed.

The area surveyed to date originally contained some 1,306 water areas. Various means of draining have been employed by the land owners to increase their acreage of tillable or pasture land. Although nearly all the easily drained wetlands and many of the more difficult and expensive to drain areas have already been drained, the practice of drainage is continuing. In addition to the 812 drained areas, 383 others have been leveled and thus eliminated from future consideration for reclaiming.

The Naval Ammunition Depot at Hastings received considerable effort because of the duck production potential offered by the numerous dugouts and several natural marshes; and because of eminent disposal of the area and hence possible destruction of this habitat.

Status of original basins.

Total number of wetlands checked	1,541	
Number drained	812	53%
Number filled and leveled	383	25%
Number in existence	346	22%

FURBEARERS

The fur harvest for the 1959-1960 trapping season continued to decline. The total harvest of all species excluding coyote and fox was 26 percent below the previous year's take. However, only the muskrat take showed a big decline; other species were only slightly below the 1958-1959 season.

Prices were somewhat improved for all species. The total value of the fur harvest was $239,050, seven percent more than last year. The average monetary return to each trapper was $108.45 compared to $89.40 the year before.

The number of trappers continued to decline also; 2,204 active trappers compared to 2,483.

	Percent Taking	Calculated Harvest		Ave. Price per Pelt	Value of Harvest
		1958-1959	1959-1960		
Muskrat	82.2	107,900	69,470	$ .58	$ 40,293
Raccoon	61.3	9,770	12,910	1.59	20,520
Mink	67.6	8,850	8,450	13.54	114,467
Beaver	43.1	8,340	7,970	7.39	58,913
Skunk	14.7	2,570	2,540	.94	2,389
Opossum	19.5	2,345	2,335	.33	770
Badger	8.2	265	513	1.47	754
Civet	8.5	612	457	1.00	457
Weasel	4.1	142	139	.80	111
Bobcat	.7	111	59	6.30	373

DEER

Surveys and Inventories

Mule and White-Tailed Deer: Conditions for taking aerial counts of deer were ideal over most of the state during February and March. Heavy snow blanketed the state throughout the period.

Counts were taken on parts of the Niobrara, Missouri, Platte, Elkhorn, Loup and Republican rivers. Counts were the highest ever recorded. The increased incidence at which deer were observed was partially the result of heavy snowfall concentrating deer along stream courses and increased observability. However, the increased number observed also reflected higher populations in 1960 for the areas surveyed.

A postcard survey of land operators in northcentral Nebraska (primarily counties in the Sandhills) was made to determine the status of deer populations in 1959 as compared to 1956. Cooperators were requested to answer questions pertaining to the status of deer on their ranch or farm and to estimate the number of deer using their ranch.

Reports of cooperators indicated about 10 percent of the reported 1959 population was harvested.

The reported pre-season deer population for 1959 was slightly lower than in 1956 but, considering the limits of accuracy for the survey, the status of the population was interpreted as being about the same as in 1956.

In general, the survey indicated that southeastern counties of the Sandhills and fringe area had the greatest densities, with the exception of Boyd and Loup counties, which had the highest densities. The lowest was in McPherson County. Reported density of deer per square mile ranged from 5.58 in Boyd County to 0.31 in McPherson County. Figure 6 shows reported densities for each county included in the survey as compared to reported fall densities in 1956.

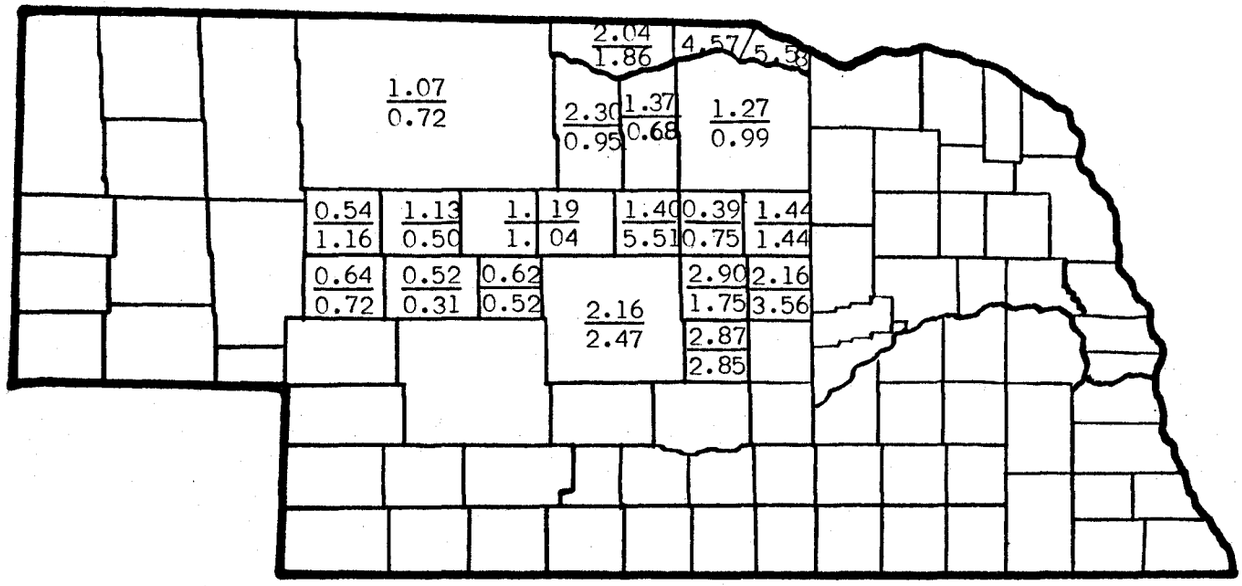
Based on landowner reports, the 1959 fall population was estimated at 24,000-29,000 deer for counties included in the survey.

Intensive range utilization surveys in the Pine Ridge showed approximately the same utilization of key browse species by deer as in 1959 and 1958. Utilization of chokecherry was only five percent of the total current growth. More extensive surveys corroborated intensive studies and indicated that the population in this area was well within biological and economic limits.

Similar surveys in the Wildcat Hills showed decreased use of key browse species by deer. Here, too, the studies indicated that deer numbers were well within biological and economic limits.

Fallow Deer: An aerial survey of fallow deer in Beaver Creek Valley was made on December 16. A total of 139 deer in 16 groups was counted as compared to 157 in December of 1959. All animals except four were in the vicinity of either the Hall or Mignery ranches.

Figure 6. Reported deer density in 1959.



$$\frac{1.07}{0.72} = \frac{\text{deer reported per square mile in 1956}}{\text{deer reported per square mile in 1959}}$$

The doe:fawn ratio of 100:15 was the lowest ever recorded since annual counts were begun, again indicating the low potential of these animals in Nebraska. A survey was made from the ground on December 21 to check the ratio obtained from aerial counts. A sample of 54 fallow deer provided a ratio of 100:14 corroborating the low rate of production indicated by aerial counts.

Harvest of Deer in 1960

Rifle Seasons: The management unit system was revised in 1960 using natural and physical boundaries such as highways and rivers rather than county lines. Specific types and river systems were delineated by the unit system, insofar as possible, facilitating herd management.

Hunters were limited to antlered deer in all units with the exception of the Omaha and Pine Ridge management units. In the Omaha unit, either sex could be harvested throughout the season. Hunters were limited to antlered males for the first four days in the Pine Ridge but were allowed to harvest deer of either sex on the last day.

State-wide hunting success was 42.8 percent with 5,399 of 12,596 permittees bagging their deer. Success was highest in the general region of the Sandhills and lowest in the extreme eastern and southeastern part of the state, varying from 24.3 percent in the Eastern Platte Management Unit to 62.3 percent in the Western Sandhills. Average success of units in which hunters were restricted to antlered deer was 41.1 percent.

Harvest and hunting success in 1960 are summarized in the following table:

1960 Deer Harvest

Management Unit	Permits Issued	Number of Deer Harvested				Percent of Hunters Successful	Species Composition whitetails: mule deer
		Whitetails	Mule Deer	Unidentified Species	Total		
Pine Ridge	2,988	88	1,389	1	1,478	49.4	6.3:100
Plains	454	6	240		246	54.1	2.5:100
Upper Platte	717	14	263		277	38.6	5.3:100
Western Sandhills	851	58	473		531	62.3	12:100
South Platte	731	41	239		280	38.3	17:100
Southwest	622	21	228	1	250	40.1	9:100
Keya Paha	732	82	314	3	399	54.5	26:100
Central Sandhills	537	46	231		277	51.5	20:100
Central	1,244	177	247	1	425	34.2	72:100
Central Platte	998	127	208	1	336	33.6	61:100
South Central	228	29	40		69	30.3	72:100
Upper Missouri	750	228	96		324	43.2	237:100
East Central	747	185	52		237	31.7	356:100
Eastern Platte	497	108	13		121	24.3	832:100
Omaha	250	72			72	28.8	100% whitetails
Lower Missouri	250	68			68	27.2	100% whitetails
Unknown Unit		5		4	9		
Totals	12,596	1,355	4,033	11	5,399	42.8	33:100

Archery: A total of 221 deer was harvested by 1,239 archers for a success of 17.8 percent. During six years of archery hunting, the 1960 success was second only to 19.4 percent in 1958. (See Figure 7.)

Trapping and Transplanting

Sixteen white-tailed deer were trapped in northeastern Nebraska from January through March and transplanted on the Big Blue River near DeWitt. Including deer transplanted in 1959, the number released in this area totaled 22. An aerial survey during March indicated that many of the transplanted deer had remained in the vicinity of the release site. Two tagged deer were taken by archers during the 1960 season. Both animals were within four miles of the release site.

ANTELOPE

Inventories

An aerial census was taken in July to determine population levels in major antelope ranges and productivity of the herds. Areas censused are summarized in Figure 8 and results are summarized and compared to 1959 in the following table.

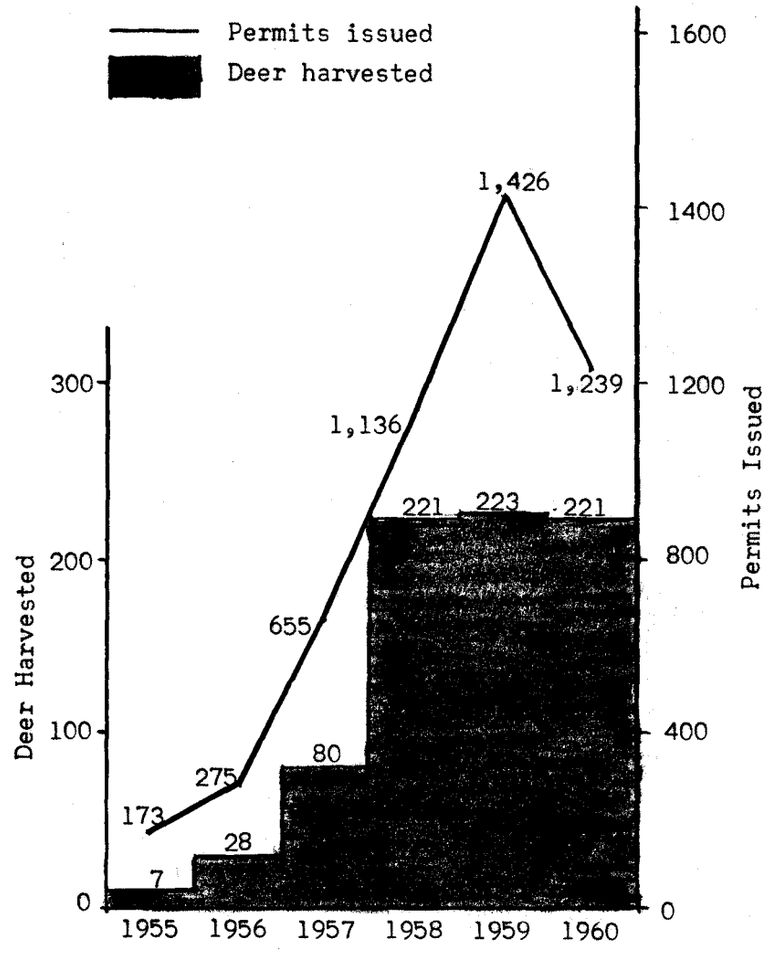
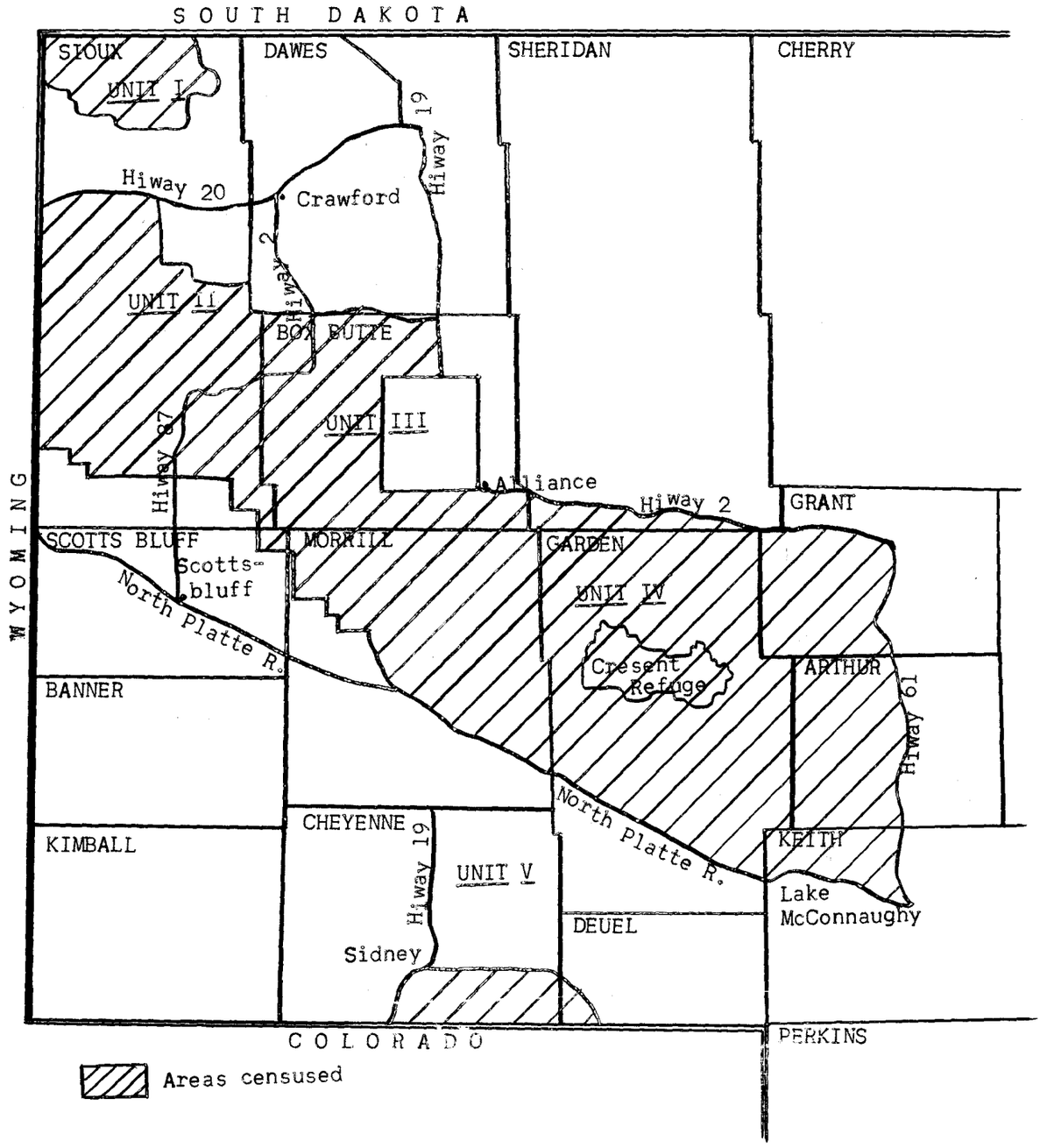


Figure 7. Summary of archery seasons since 1955.



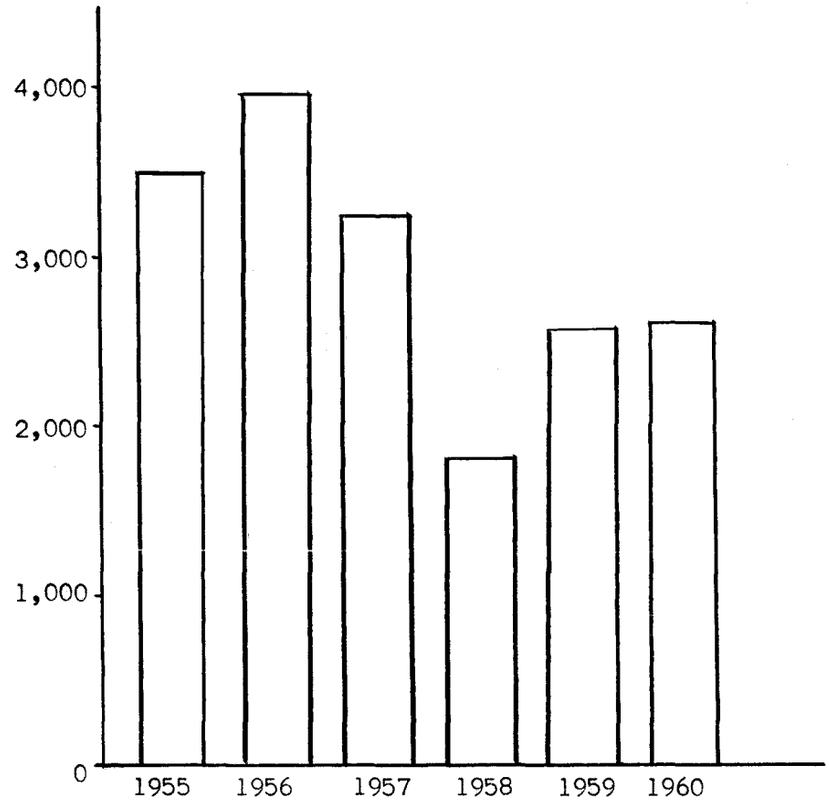
Areas censused for antelope from 1955 through 1960.

Results of the 1960 antelope inventory compared to 1959.

Management Unit	Estimated Population		% Change	Buck:doe:kid	
	1959	1960		1959	1960
I (North Sioux)	750	942	+ 26	95:100:83	83:100:83
II (Box Butte-West)	680	520	- 23	52:100:42	51:100:57
III (Box Butte-East)	410	628	+ 53	31:100:43	35:100:67
IV (Sandhills)	550	362	- 34	31:100:43	68:100:35
V (Cheyenne)	165	129	- 22	13:100:44	55:100:53
Totals	2,555	2,581	+ 1%	50:100:52	60:100:65

The over-all population level was about the same as in 1959. Increases occurred in Units I and III, while population levels declined in Units II, IV and V. The decrease in Unit II reflects the removal of antelope by trapping during the previous winter.

Population levels since 1955 are summarized in the following figure.



Harvest of Antelope in 1960

Two management units were open to hunting in 1960; North Sioux and Garden. A total of 550 permits was allotted; 300 in the North Sioux Unit and 250 in the Garden Unit.

Harvest data are summarized in the following table:

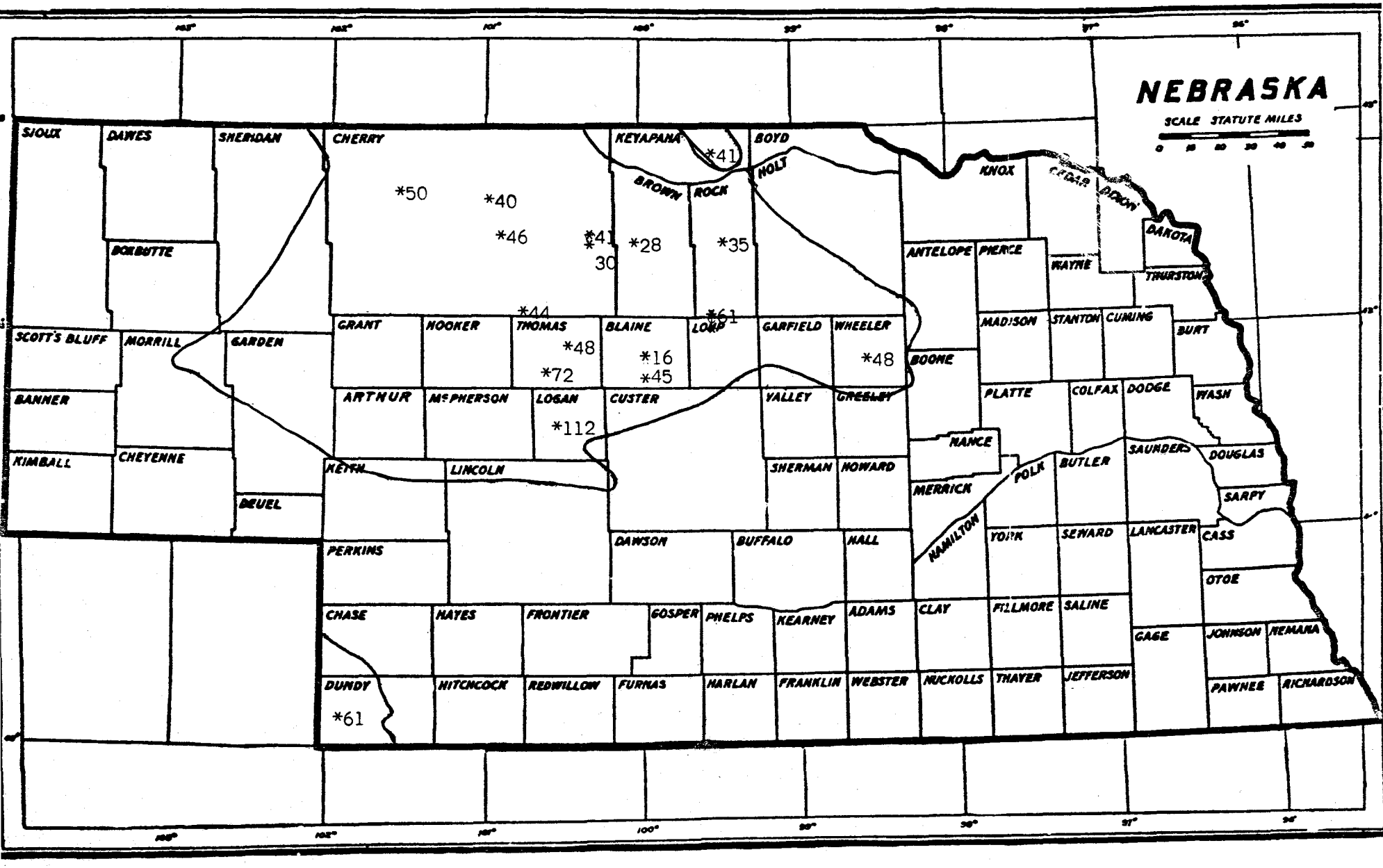
Summary of 1960 antelope harvest.

Management Unit	Harvest					Percent Successful Hunters
	Adults		Kids		Total	
	Males	Females	Males	Females		
North Sioux	156	73	23	17	269	89.7
Garden	100	42	8	3	153	61.2
Combined Data	256	115	31	20	422	76.7

Trapping and Transplanting

Trapping and transplanting of antelope was continued in 1960 to establish populations in range presently unoccupied but considered suitable for maintenance of an antelope population.

In all, 572 antelope were trapped and transplanted during 1960; 420 were transplanted during January and February and 152 during December. The total number of antelope transplanted since inception of the project in January, 1958, is 817 antelope. Numbers released and location of release sites are shown in the accompanying map.



Distribution of antelope releases.