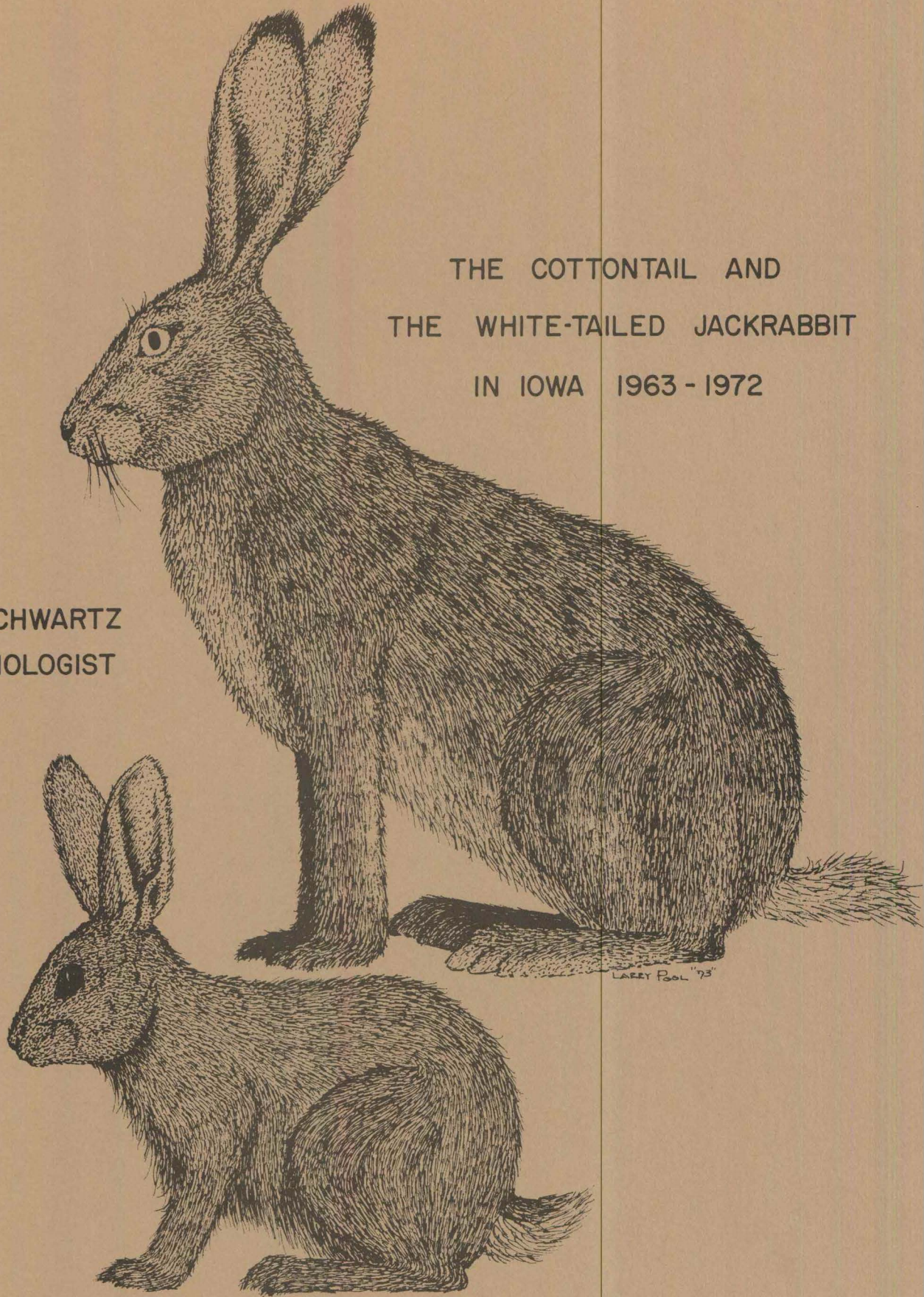


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THE COTTONTAIL AND  
THE WHITE-TAILED JACKRABBIT  
IN IOWA 1963 - 1972

BY

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THE COTTONTAIL AND WHITE-TAILED JACKRABBIT  
IN IOWA - 1963 TO 1972

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*Abstract:* Data from surveys conducted in Iowa from 1963 to 1972 to determine population trends of the eastern cottontail (*Sylvilagus floridanus mearnsi*) and the white-tailed jackrabbit (*Lepus townsendii campanius*) are presented. In addition there is a brief discussion of historical and current distribution for each species in Iowa. Survey data for the cottontail rabbit indicates the greatest densities occurred in the southern pasture region with lowest densities in the north central cash grain region. Abundance indices determined from four surveys indicate a peak in cottontail numbers from 1965-1968 with a marked decline in 1969. Cottontail numbers have remained low through 1972. Harvest statistics show that an average yearly kill of 1,736,000 cottontails have been shot by 155,600 cottontail hunters for the years 1963-1973. This represents a mean of 49.6 percent of all licensed hunters. Survey data for the white-tailed jackrabbit indicates greatest rabbit densities occurred in north central and northwestern Iowa. Abundance indices show a peak in jackrabbit numbers in 1967 and a marked decline through 1969. Rabbit numbers increased slightly in 1970 and 1971 but declined in 1972. Harvest statistics show that an average of 76,600 jackrabbits have been shot annually by 24,100 hunters for the years 1963-1973. This represents a mean of 7.7 percent of all licensed hunters.

## ACKNOWLEDGEMENTS

I wish to thank those Conservation Officers and Wildlife Biologists who conducted population surveys. Without their assistance, this report would not be possible. I also wish to acknowledge the late P. D. Kline and E. J. Hlavka for compiling much of the survey information. Thanks also to Drs. A. L. Farris, V. L. Wright and E. D. Klonglan for review of the manuscript. I also wish to thank Dr. V. L. Wright for computing the 1972-73 harvest statistics. Thanks are also due Larry Pool for the cover illustration.



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## INTRODUCTION

The following bulletin is the first in a series, and contains survey data collected on the cottontail and jackrabbit in Iowa from 1963 to 1972. Bulletins hereafter will contain that year's annual survey data and population trends for these two species. It is my attempt here to bring under one cover and discuss pertinent survey information collected on the cottontail and jackrabbit in Iowa. Sources of information includes (1) spring crowing cock pheasant and roadside survey, (2) annual cottontail rabbit survey, (3) August roadside game survey, (4) hunting season dates and (5) hunter harvest and success. In addition, certain background information regarding the history and distribution of the cottontail and jackrabbit in Iowa is presented.

## COTTONTAIL RABBIT

### Historical Distribution

From what is known about the eastern cottontail (*Sylvilagus floridanus mearnsii* (J. A. Allen)) and its habitat requirements it was probably not a widely distributed game animal when Iowa was first settled. According to Allen (1870:194) and Scott (1937:81) it was abundant only in forest-edge situations or open woods in southern Iowa, and in riparian communities in the tall grass prairie. With the advent of agriculture, extensive land clearing and cultivation of the prairie, cottontail food supplies and habitat increased. Bowles (171:87) presents an excellent discussion on historical distribution records and specimens collected throughout Iowa.



### Current Distribution

Today the cottontail rabbit is a common resident of all counties in Iowa. Population densities vary greatly throughout the state. Best rabbit numbers are found in the southern third of Iowa where soil type and land use practices provide the best habitat (Fig. 1). The population distribution presented in Figure 1 represents general population densities; it does not reflect the variation within an individual zone.

### Population Surveys and Trends

Survey regions For ease in analysis, the state of Iowa was divided into five game regions (Fig. 2). Regions are based primarily on distribution and abundance of upland game. These regions grossly represent different habitat types and reflect differences in agricultural practices related to topography and soil type. For ease in analysis and discussion, region boundaries follow the political boundaries separating counties. In cases where a county contained more than one region, the county was placed into the region that made up the majority of the area for that county. Oschwald et al. (1965) gives an excellent description of the soil associations found in each region. Their information is summarized below.

The western livestock region includes both the undulating loess hills of western Iowa and the Missouri River flood plain. Topography of the region varies from nearly level to gently sloping areas of the northwest to gently to strongly sloping areas in the southwest. Loess soils cover most of the uplands, although there are till outcroppings on lower parts of strongly sloping flanks. The Missouri River flood plain is nearly level except for oxbow depressions and is predominately alluvial sediments.



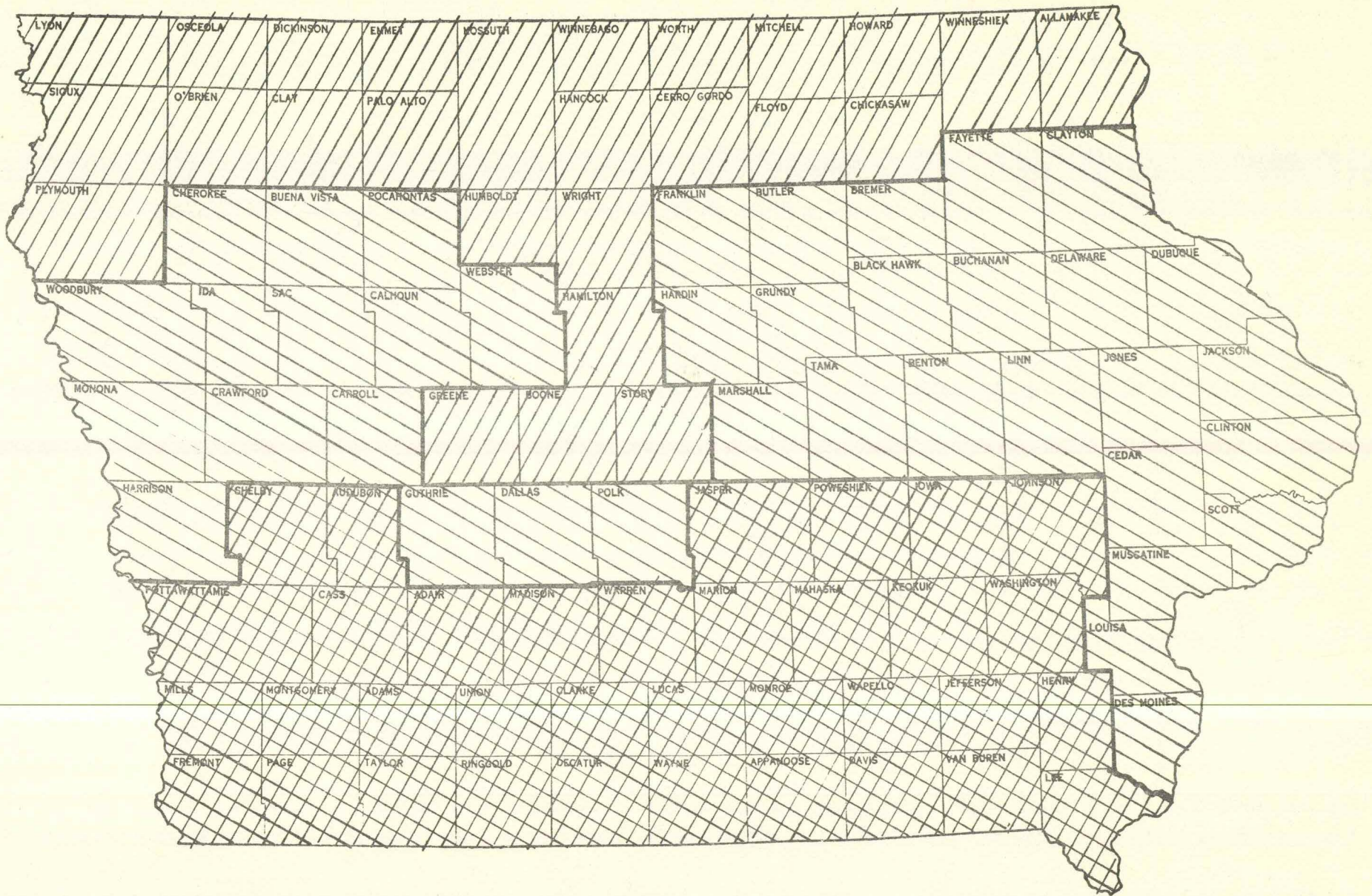


Figure 1. Cottontail rabbit population densities in Iowa based on July and August roadside surveys, 1963 to 1972.



≥ 0.5 Rabbits/mile



0.2-0.49 Rabbits/mile



≤ 0.2 Rabbits/mile



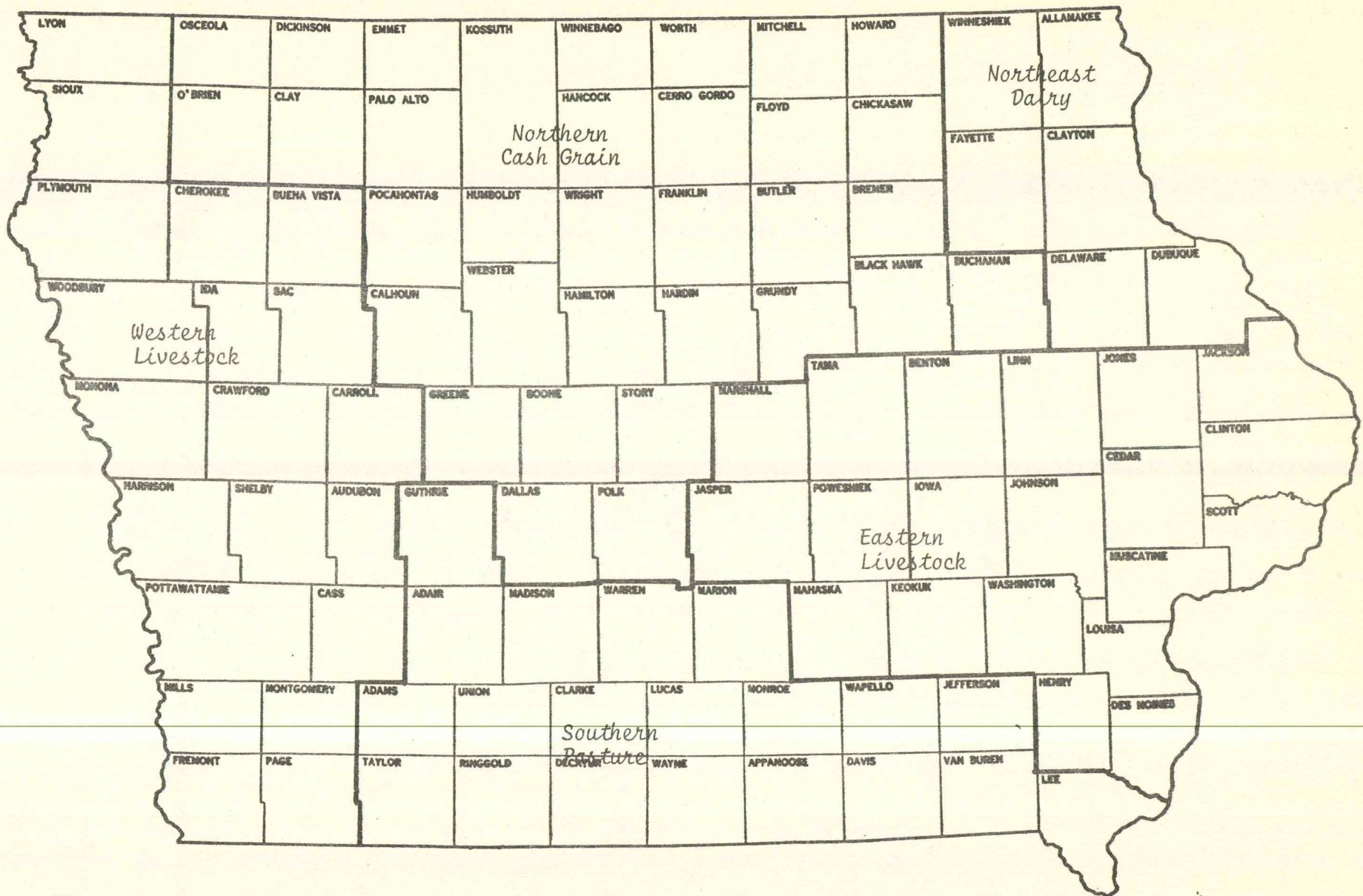


Figure 2. Iowa game regions based on soil type and agricultural practices.

Native vegetation of this region was primarily prairie grass with brush and timber along water courses. Current cropping patterns follow a general corn, corn, soybean, meadow crop rotation pattern.

The southern livestock region includes the eastern portion of the western loess hills and the intricate pattern of narrow ridge tops flanked by gently to strongly sloping and steep side slopes of the southeast. The western portion of this region is composed primarily of loess soils; the eastern portion is a mixture of forest and prairie derived soils with some loess deposits. The dominant vegetation was native prairie grass in the west with extensive stands of oak-hickory forest in the eastern region. Current cropping patterns include a corn, 4-year meadow rotation program.

The northcentral cash grain region includes some 12,000 square miles of northcentral Iowa. The area extends from the Minnesota stateline south to Des Moines. Topography is nearly level to gently sloping although some strongly sloping areas are also present. Stream dissection has not progressed very far in this geologically young area. One-third to one-half of the area has been drained by artificial drainage systems of tile and open ditches. Native vegetation was predominately tall grass prairie. Current cropping patterns are a corn, corn, soybean rotation.

The eastern livestock region includes that area north of the southern pasture region and east of the cash grain region. Topography of the area is gently to moderately sloping although some steep slopes exist along the Mississippi River breaks. Native vegetation was predominately native grass although deciduous timber did occur along well developed drainage systems. Current cropping patterns are a corn, corn, soybean, oats, meadow rotation.

The northeast dairy region includes six northeast Iowa counties. The geological history of this region is complex and varied. Thick loess



deposits blanket most uplands. Glacial till underlies loess in some areas and is exposed on steep side slopes. In the northeast, loess generally blankets limestone bedrock, although glacial till, shale or sandstone underlies loess in some places. Topography consists of narrow ridges and moderately to steep sloping sides. Native vegetation was primarily deciduous forest although areas of prairie or mixed prairie-forest vegetation did occur. Current cropping patterns consist of a corn, corn, oats, meadow rotation.

Survey methods Counts on cottontail abundance were derived from four major surveys: (1) spring pheasant crowing cock survey, (2) spring pheasant roadside survey, (3) July rabbit roadside survey and (4) August roadside pheasant survey.

Beginning in 1950, spring ring-necked pheasant (*Phasianus colchicus*) population surveys have been conducted in Iowa on a statewide basis. Originally census routes were ten-stops and only calling males were counted. Starting in 1962, an additional 10-mile roadside census was conducted. Cottontail rabbits have been counted on both surveys since 1965.

Counts are conducted during the last half of April and the first half of May on clear, calm mornings (wind speed less than 7 mph). Crowing cock counts begin exactly 45 minutes before sunrise; roadside routes start immediately after completion of the crowing cock count. Roadside routes, in most cases, are the reverse of the crowing route. The observer counts all the two syllable cock pheasant calls at each of the ten stops on the crowing route plus all game sighted between stops. On the roadside census the observer drives 15-20 mph and records all game sighted.

The July rabbit roadside surveys have been conducted annually throughout Iowa. The July rabbit roadside survey was the major survey used to

estimate changes in cottontail abundance. Since 1963, survey methods have been the same. Conservation Officers and Biologists conduct surveys between 10 to 20 July on sunny mornings with heavy dew fall and wind velocity not exceeding 7 mph. Counts start at sunrise and the observer drives 15 to 20 mph recording all rabbits sighted on standardized 30-mile routes. The number of juvenile and adult cottontails (estimated from body size) has been recorded separately. Kline (1965) studied the effects of several environmental factors on the abundance of cottontails sighted on summer roadside surveys. His data indicate maximum rabbit numbers were sighted during mid-July on clear, calm sunny mornings. Increasing numbers of rabbits were seen during summer from 0.5 hours before to 1.5 hours after sunrise.

The August pheasant survey has been conducted annually in Iowa since 1954. Cottontail rabbits have been counted on this survey since 1963. Biologists and Conservation Officers conduct the survey between the period of 1 to 15 August on sunny mornings with heavy dew fall and wind velocity not exceeding 7 mph. Counts start at sunrise and the observer drives 15-20 mph recording all game sighted on the standardized 30-mile route.

Results and discussion Cottontails sighted on both the spring crowing cock and roadside pheasant surveys for 1965-1972 (Table 1) indicate a wide variation in rabbit densities between game regions. The southern pasture region contained the highest mean number of cottontails per mile (0.425) while the north central cash grain contained the lowest density (0.125). The eastern and western livestock region had similar rabbit densities of 0.255 rabbits per mile. The northeast dairy region was slightly higher than the north central cash grain region with a mean



Table 1. Iowa spring cottontail roadside population data, 1965-1972.

Year	Game Region											
	Western Livestock		Southern Pasture		Northern Cash Grain		Eastern Livestock		Northeast Dairy		Statewide	
	Crowing route	Roadside route	CR	RR	CR	RR	CR	RR	CR	RR	CR	RR
	Rabbits/mile											
1965	.24	.33	.28	.33	.16	.15	.24	.25	.22	.22	.22	.24
1966	.26	.33	.56	.69	.14	.16	.31	.31	.18	.11	.29	.33
1967	.44	.42	.55	.56	.17	.23	.47	.37	.08	.10	.34	.35
1968	.64	.39	.57	.62	.18	.24	.33	.32	.21	.22	.36	.36
1969	.23	.11	.41	.34	.07	.06	.27	.18	.15	.19	.22	.16
1970	.35	.18	.49	.41	.09	.09	.17	.17	.18	.13	.23	.19
1971	.27	.26	.23	.23	.07	.06	.18	.13	.20	.15	.16	.14
1972	.25	.22	.22	.29	.07	.07	.21	.18	.30	.11	.16	.17
Mean	.33	.28	.41	.44	.12	.13	.27	.24	.19	.15	.25	.24
Standard Deviation	.14	.11	.15	.17	.05	.07	.10	.09	.06	.05	.07	.09

rabbit density of 0.17 rabbits per mile. There appears to be little difference between the number of cottontails sighted on the spring crowing route and the spring roadside route. These data appear to be in agreement with information presented by Lord (1961:207). His findings indicate that greatest cottontail activity occurred before daylight in April and May and that most rabbit activity had ceased by 7:00 A.M. CST.

Cottontails sighted on the July rabbit roadside count from 1963-1972 indicate similar rabbit densities between game region as the spring survey (Table 2). Reproductive rates determined from a young per adult rates indicate the highest rate of reproduction occurred in the southern pasture region ( $3.05 \pm 0.80$  young/adult). The lowest rate occurred in the western livestock region ( $1.60 \pm 0.22$  young/adult) and the north central cash grain region ( $1.66 \pm 0.35$  young/adult). The reproductive rate for the eastern livestock and northeast dairy regions were  $2.07 \pm 0.29$  and  $1.98 \pm 0.71$  young per adult, respectively.

Cottontails sighted on the August roadside pheasant survey from 1963-1972 also indicate that the highest rabbit density ( $0.55 \pm 0.21$  rabbits/mile) occurred in the southern pasture region (Table 3). The lowest density occurred in the north central cash grain region ( $0.10 \pm 0.03$  rabbits/mile) with moderate densities in the eastern livestock region ( $0.21 \pm 0.05$  rabbits/mile), western livestock region ( $0.28 \pm 0.07$  rabbits/mile) and northeast dairy region ( $0.14 \pm 0.04$  rabbits/mile).

The mean number of cottontails sighted for each survey on a statewide basis for the spring crowing cock, spring roadside, July rabbit roadside and August pheasant survey were  $0.25 \pm 0.07$ ,  $0.24 \pm 0.09$ ,  $0.24 \pm 0.07$  rabbits per mile respectively. This trend in rabbits per mile by season (April, July, and August) agrees with data collected by Kline (1965:666).



Table 2. Iowa July cottontail rabbit roadside population data, 1963-1972.

Year	Game Region											
	Western Livestock		Southern Pasture		Northern Cash Grain		Eastern Livestock		Northeast Dairy		Statewide	
	Rabbits/ Mile	Young/ Adult	R/M	Y/A	R/M	Y/A	R/M	Y/A	R/M	Y/A	R/M	Y/A
1963	.67	1.79	.92	4.41	.34	2.18	.53	1.79	.27	3.50	.55	2.44
1964	.79	1.72	1.06	3.82	.37	2.36	.71	2.38	.31	1.58	.67	2.53
1965	.53	1.52	1.06	4.30	.29	1.64	.77	1.96	.20	1.22	.60	2.33
1966	.75	1.34	1.01	2.74	.32	1.67	.66	1.82	.30	1.73	.59	1.81
1967	.99	1.54	1.07	2.45	.29	1.42	.68	2.40	.23	2.83	.62	1.95
1968	.87	1.35	.89	2.56	.32	1.46	.78	2.12	.26	1.89	.63	1.86
1969	.52	2.06	.73	2.32	.18	1.25	.52	1.88	.23	2.29	.41	1.93
1970	.45	1.50	.95	2.65	.26	1.60	.49	2.50	.32	1.91	.47	2.13
1971	.47	1.76	.98	2.63	.20	1.50	.53	1.65	.22	1.44	.47	1.94
1972	.62	1.48	1.11	2.64	.25	1.50	.60	2.16	.27	1.45	.56	1.95
Mean	.66	1.60	.97	3.05	.28	1.66	.63	2.07	.26	1.98	.56	2.09
Standard Devia- tion	.19	.22	.11	.80	.06	.35	.10	.29	.04	.71	.08	.26

Table 3. Iowa August cottontail rabbit roadside population data, 1963-1972.

Year	Game Region					Statewide
	Western Livestock	Southern Pasture	Northern Cash Grain	Eastern Livestock	Northeast Dairy	
	Rabbits/mile					
1963	.40	.35	.13	.28	.17	.27
1964	.32	.52	.11	.28	.08	.27
1965	.30	.67	.11	.22	.11	.28
1966	.36	1.08	.14	.24	.20	.38
1967	.29	.56	.11	.25	.15	.26
1968	.32	.58	.10	.21	.14	.26
1969	.19	.54	.08	.21	.20	.22
1970	.18	.36	.06	.11	.13	.15
1971	.27	.43	.05	.17	.14	.18
1972	.20	.40	.07	.17	.10	.18
Mean $\pm$ SD	.28 $\pm$ .07	.55 $\pm$ .21	.10 $\pm$ .03	.21 $\pm$ .05	.14 $\pm$ .04	.24 $\pm$ .07



His data indicates a peak in rabbit roadside activity occurring in mid-July with roadside activity about equal in April and August but less than half that of July.

An abundance estimate (determined from the mean number of rabbits for the 4 surveys) indicates that there was a peak in cottontail density statewide from 1966-1968 (Fig. 3). There was a sharp decline in rabbit abundance in 1969. Rabbit numbers remained low from 1970-1972.

#### Harvest Statistics

Hunting season data There has been relatively little change in the cottontail rabbit hunting season since 1963 (Table 4). The closing date was extended by two weeks starting in the 1970-71 season. Shooting hours, possession limit and bag limit have been the same.

Table 4. Iowa cottontail and white-tailed jackrabbit hunting season data, 1963-1972.

Year	Season dates <sup>a</sup>	# Days	Bag limit	Possession limit
1963-64	September 14-February 23	163	10	None
1964-65	" 12- " 21	163	10	None
1965-66	" 12- " 21	163	10	None
1966-67	" 10- " 19	163	10	None
1967-68	" 15- " 17	156	10	None
1968-69	" 14- " 16	156	10	None
1969-70	" 13- " 15	156	10	None
1970-71	" 12- " 28	170	10	None
1971-72	" 11- " 29	172	10	None
1972-73	" 9- " 28	173	10	None

<sup>a</sup>Shooting hours were from 6 AM to 6 PM for all years.

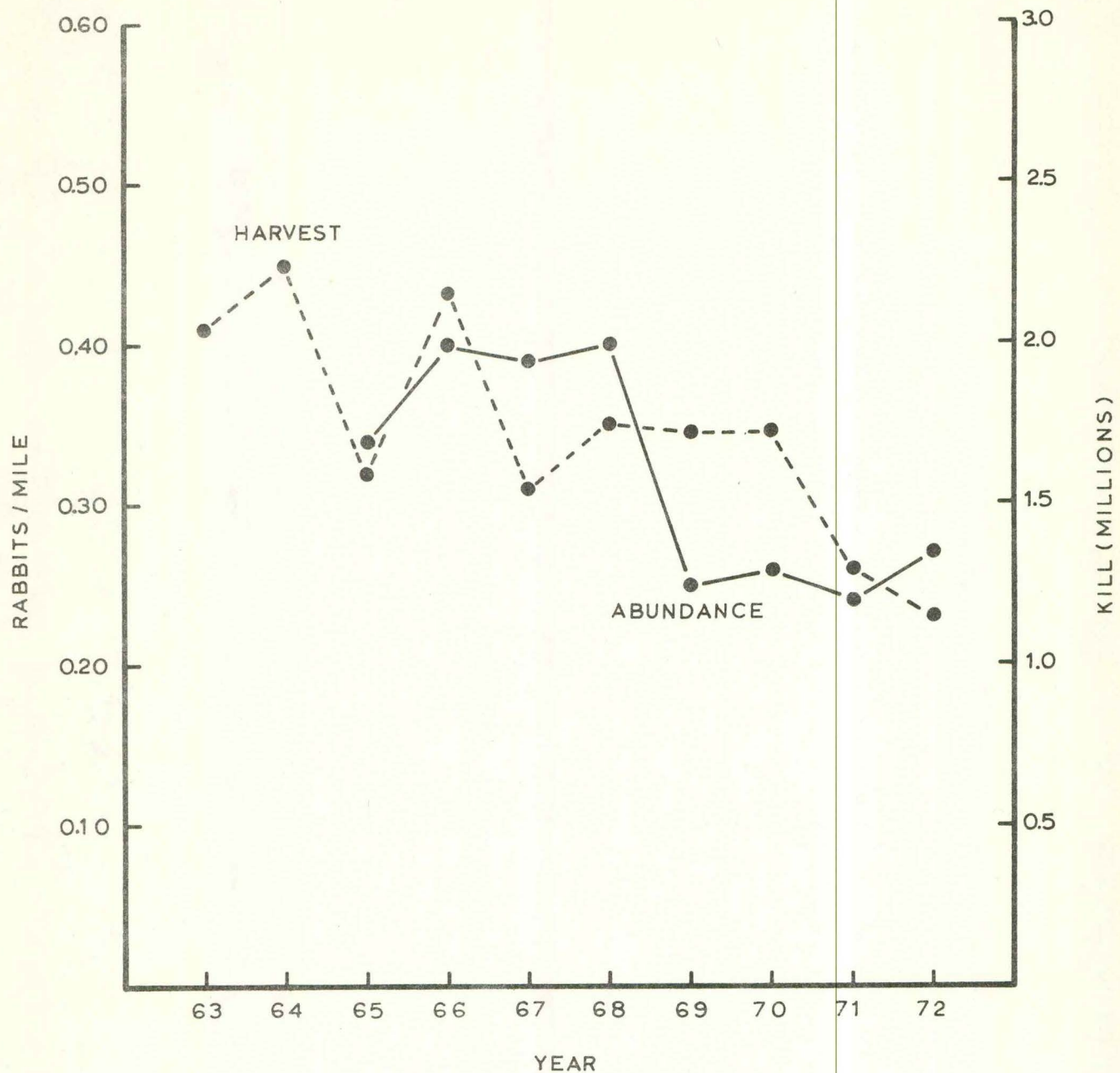


Figure 3. Trends in the abundance (Tables 1-3) and the fall harvest of cottontails (Table 4) in Iowa for the 10 years, 1963-1972. The estimate of abundance was based on the mean of the four annual indices derived from two spring, a breeding and a late summer count.



Harvest statistics Small game harvest statistics are computed annually in Iowa. Routinely 2.5 percent of the resident and 5 percent of the non-resident license holders are surveyed by postcard.

The cottontail rabbit is the second most popular game species hunted in Iowa. The ring-necked pheasant is first. The proportion of Iowa small game licensees who hunted rabbits annually averaged 49.6 percent for the 9 years, 1963-1971, ranging from 58 percent to 38 percent (Table 5). The number of cottontail hunters averaged 155,600 annually, exceeding 170,000 in 1964-65 and dropping below 130,000 in 1971-72.

The number of cottontails harvested by Iowa hunters annually averaged 1,736,000 for the 10 years, 1963-1972. The annual harvest exceeded 2,000,000 for the years 1963-64, 64-65, and 1966-67 (Table 5, Fig. 3). The lowest kill reported occurred in 1972-73.

The mean number of cottontails bagged by each rabbit hunter seasonally for the 9 seasons, 1963-1971, was 11.6; it ranged from a high of 14.1 in 1966-67 to a low of 9.7 in 1971-72. The average bag per rabbit hunter was no doubt lower for 1972-73, however, due to modifications in the harvest survey, this statistic could not be computed.

The total number of hunter-trips per cottontail hunting season averaged 924,600 from 1963-1971. Total hunting trips per rabbit season exceeded 1,000,000 for the three years 1963-64, 1964-65, and 1966-67 when the annual harvest exceeded 2,000,000.

The number of hunting trips for cottontails per rabbit hunter averaged 5.94 per season from 1963-1971. There was very little fluctuation in the annual number of rabbit hunts per hunter, and only twice during the 9 years (1969-70, 1970-71) did the number of trips for cottontails fall below 6 per individual rabbit hunter per season.

Table 5. Hunting statistics for Iowa cottontails, 1963-1972.

Year	Total kill	Total hunters	Percent of all hunters	Total hours hunted	Total trips made
1963-64	2,066,500	169,990	55	2,618,400	1,052,100
1964-65	2,260,100	179,600	58	2,976,100	1,105,200
1965-66	1,602,100	138,400	49	2,795,300	899,500
1966-67	2,180,500	154,600	53	2,969,200	1,020,700
1967-68	1,548,000	150,100	49	2,484,100	894,400
1968-69	1,761,400	147,400	49	2,427,800	943,600
1969-70	1,722,200	159,000	48	2,743,000	742,400
1970-71	1,725,500	167,200	47	2,832,600	809,700
1971-72	1,305,100	134,500	38	2,525,700	854,400
1972-73	1,188,400	----- <sup>a</sup>	-- <sup>a</sup>	----- <sup>a</sup>	----- <sup>a</sup>

<sup>a</sup>1972-73 hunter survey was modified; this variable could not be estimated.



## WHITE-TAILED JACKRABBIT

## Historical Distribution

The white-tailed jackrabbit was probably common to the northwestern part of Iowa prior to cultivation of the tall-grass prairie (Allen 1870:194, Scott 1937:81). Bowles (1971:90), in his review of historical records, indicates that the white-tailed jackrabbit rapidly expanded its range as far east as Muscatine County by the late 1890's (Nutting 1893:40) and south to Shelby County by 1885 (White 1915:77). Ross (1946:22) reported a rapid spread of white-tailed jackrabbits that corresponded to the time of drainage and cultivation of the tall-grass prairie.

## Current Distribution

At present the white-tailed jackrabbit is probably found throughout the northwest two-thirds of Iowa, although it is most abundant in the north-central and northwest portion of the state (Fig. 4). Scattered sightings of jackrabbits in southeastern Iowa are uncommon. Bowles (1971:90) reviewed historical and current records for this species in Iowa. He reported, "Relatively few recent records of this species from southern counties (Polder 1958:564; Schlitter and Bowles 1968:528), and there is considerable local variation in abundance throughout the state (Kline 1963)". Kline (1963:197) reported that the greatest abundance of jackrabbits was on the recently glaciated soils of northern and central Iowa, and on the Missouri loess soils of the west central counties.

Kline (1963:197) states that, "The Iowa jackrabbit is a plains mammal. It generally shuns forested areas, although woody cover is used as shelter during severe winter weather. It seems to prefer wide expanses of interspersed pasture and cropland. Sloughs are used for daytime resting during



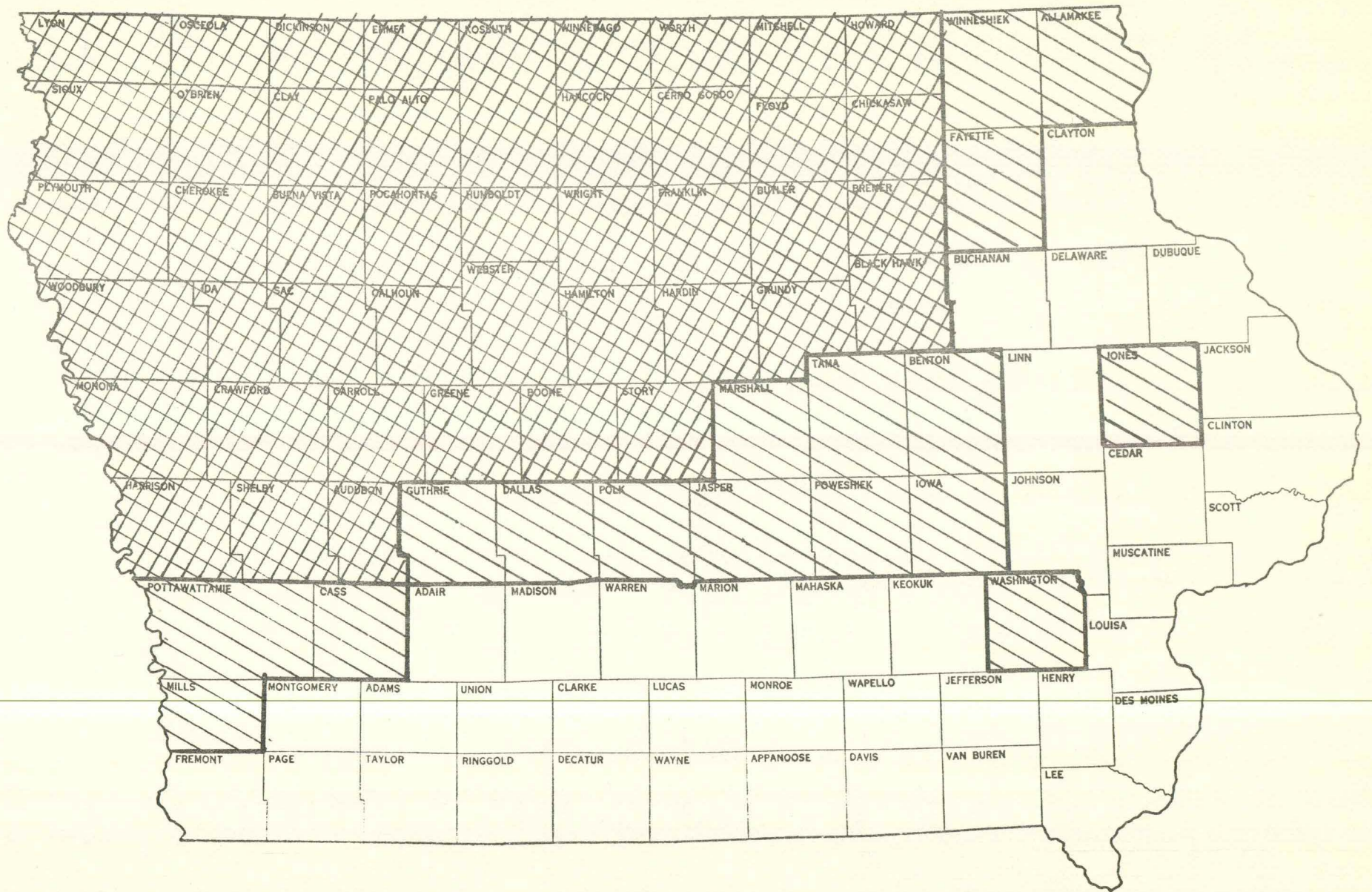
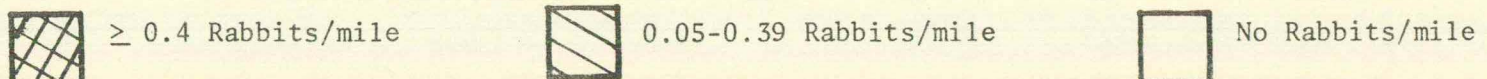


Figure 4. White-tailed jackrabbit distribution in Iowa based on rabbit sightings from 1963-1972. Data from July and August roadside surveys.





winter. Evidently, cultivation favors the species as high populations often occur on intensely cultivated areas. Occasionally high populations occur on both flat and steeply rolling terrain".

#### Population Surveys and Population Trends

Survey methods White-tailed jackrabbit populations have been surveyed in Iowa since 1963 on both the July and August roadside surveys. They have been counted since 1965 on both the spring crowing cock and roadside pheasant surveys. Methods for each survey have been discussed in the cottontail rabbit section under Population Surveys and Trends-  
Survey methods section.

Results and discussion White-tailed jackrabbits sighted per 10 miles on the spring pheasant routes from 1965 to 1972 indicate a gradual decline in jackrabbit numbers. A similar trend also appears in the July and August surveys (Table 6). An abundance estimate calculated from the annual mean of the four surveys indicates an increase in jackrabbit numbers in 1965 and 1967. Rabbit numbers peaked in 1967 and declined sharply in 1968 and 1969 where they increased slightly until 1971 but dropped again in 1972 (Fig. 5).

The mean number of jackrabbits sighted per 10 miles appears to be greater for the spring survey ( $0.17 \pm 0.08$ ) than for the July ( $0.10 \pm 0.04$ ) and August ( $0.12 \pm 0.03$ ) surveys. These data suggest that white-tailed jackrabbits do not frequent roadsides in July like cottontails. The higher sightings that occurred in spring are probably related to visibility of rabbits due to lack of field cover during this season. By July and August plant growth in crop fields is too tall to permit easy observations of jackrabbits.

Table 6. Iowa white-tailed jackrabbit population data, 1963-1972.  
Numbers are rabbits per 10 miles surveyed.

Year	Spring pheasant route		July roadside	August roadside	Estimate of abundance <sup>a</sup>
	Crowing route	Roadside route			
1963	---	---	.18	.14	---
1964	---	---	.16	.17	---
1965	.33	.37	.11	.12	.23
1966	.16	.18	.09	.12	.14
1967	.24	.43	.11	.19	.24
1968	.20	.31	.10	.09	.18
1969	.09	.09	.05	.10	.08
1970	.15	.21	.08	.05	.12
1971	.12	.22	.06	.10	.13
1972	.10	.13	.05	.07	.09
Mean	.17	.24	.10	.12	
± SD	.08	.12	.04	.03	

<sup>a</sup>The estimate of abundance was based on the mean of the four annual indices derived from the two spring, a July and an August count.

#### Harvest Statistics

Hunting season data The white-tailed jackrabbit hunting season runs concurrently with the cottontail rabbit season (Table 4). The shooting hours, bag and possession limits are the same.

Harvest statistics Harvest survey statistics for white-tailed jackrabbits were collected from the annual hunter questionnaire described in the Cottontail Rabbit Harvest Statistics section.

The white-tailed jackrabbit is of minor importance as a game species in Iowa. Most rabbits are harvested incidental to other upland game hunting, although high-powered rifle hunting is increasing in popularity. The proportion of Iowa small game licensees who hunted rabbits annually



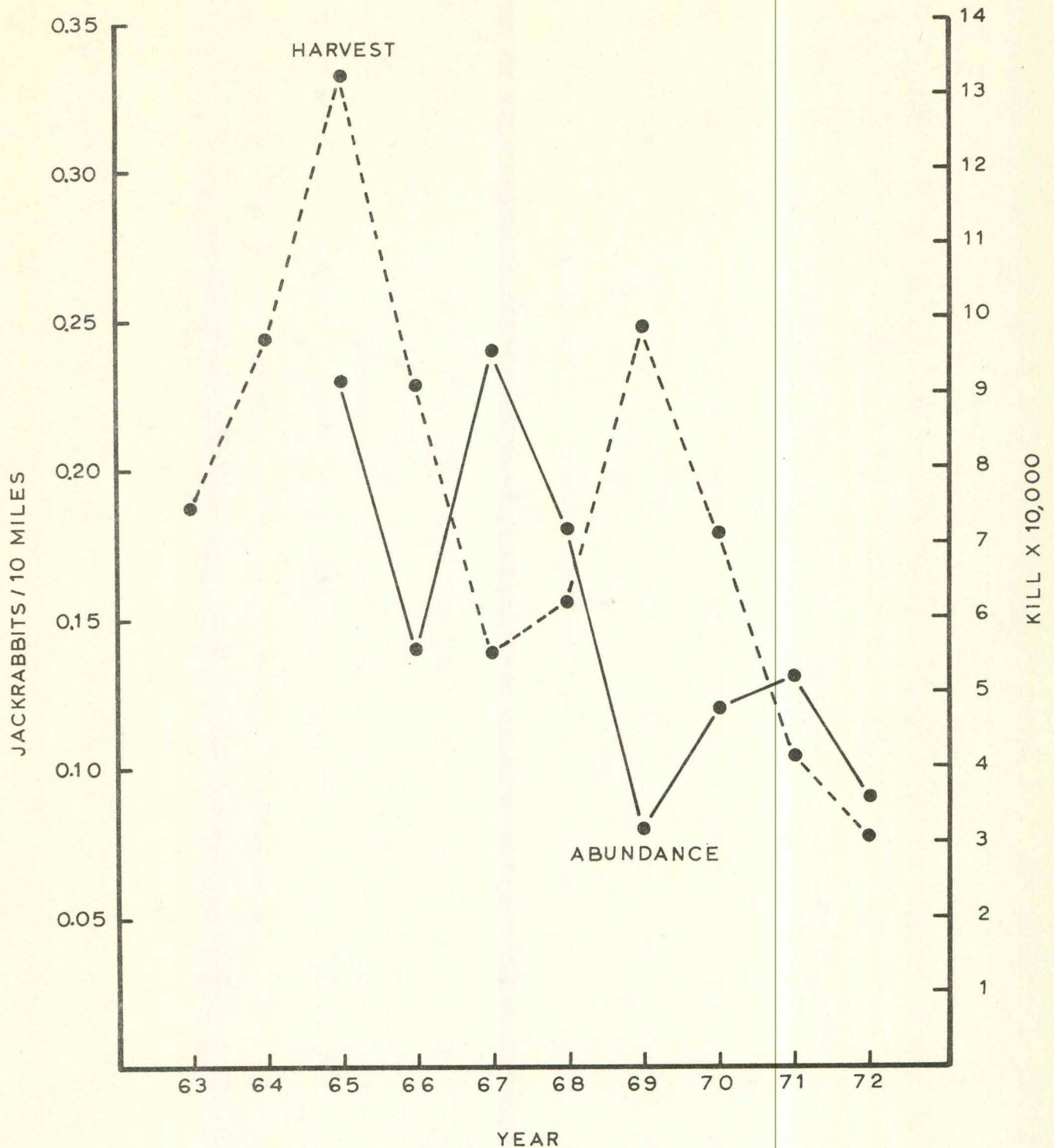


Figure 5. Trends in the abundance (Table 6) and the fall harvest of white-tailed jackrabbits (Table 7) in Iowa for the years 1963-1972. The estimate of abundance was based on the mean of the four annual indices derived from two spring, a breeding and a late summer count.

averaged 7.7 percent for 9 years, 1963-1971, ranging from 10 percent to 4.5 percent (Table 7). The number of jackrabbit hunters averaged 24,100 annually for the years 1963-1971.

The number of white-tailed jackrabbits harvested by Iowa hunters annually averaged 76,600 for the 10 years, 1963-1972. The annual harvest exceeded 100,000 for the years 1965-1966. The lowest kill reported occurred during the 1972-73 season.

The mean number of jackrabbits bagged by each rabbit hunter seasonally for the 9 years, 1963-1971, was 3.9; it ranged from a high of 5.3 in 1967-68 to a low of 2.7 in 1970-71.

The total number of hunter-trips per jackrabbit hunting season averaged 90,500 from 1963-1971. The number of hunting trips for jackrabbit per rabbit hunter averaged 3.3 per season from 1963-1971.



Table 7. Hunting statistics for Iowa white-tailed jackrabbits, 1963-1972.

Year	Total kill	Total hunters	Percent of all hunters	Total hours hunted	Total trips made
1963-64	75,000	30,500	10	213,500	92,400
1964-65	97,800	31,800	10	287,000	108,300
1965-66	133,000	26,100	9	326,000	114,700
1966-67	91,700	20,400	7	242,300	91,700
1967-68	55,700	20,600	7	296,900	109,300
1968-69	62,400	20,100	7	227,500	88,600
1969-70	98,900	24,800	8	233,500	73,500
1970-71	71,700	26,500	7	252,900	62,300
1971-72	41,500	16,300	4.5	178,800	74,000
1972-73	38,400	---- <sup>a</sup>	--- <sup>a</sup>	----- <sup>a</sup>	---- <sup>a</sup>

<sup>a</sup>1972-73 hunter survey was modified; this variable could not be estimated.

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