SQUIRREL BREEDING STUDIES AND THEIR RELATION TO HUNTING SEASON AND GUNNING PRESSURE, WITH NOTES ON HABITAT CONDITIONS

HOWARD R. REDMOND, Project Leader, State Game and Fish Commission, Jackson, Mississippi

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There is evidence to support a belief that the squirrel population in Mississippi has gradually declined in recent years because of improper management practices. With this in view, a squirrel survey and investigation was initiated on July 1, 1949, under Mississippi Project 30-R.

Briefly, the object of this survey is to secure information which will furnish a sound basis for the formulation of a state policy and technique for squirrel management, inclusive of hunting regulations. The information presented in this paper was obtained during the first two years of Project 30-R.

The species of squirrel found in Mississippi are: 1) Gray squirrel, *Sciurus carolinensis carolinensis,* the southern gray squirrel and *Sciurus carolinensis fuliginosus,* the Louisiana gray squirrel. The latter is found in the southern portion of the state. 2) Fox squirrel, *Sciurus niger texianus,* the "hill fox squirrel" and *Sciurus niger rufiventer,* the "Delta fox squirrel." These are the two races of fox squirrel recognized to date in Mississippi. All information in this paper is based on the gray squirrel except where the writer states otherwise.

BREEDING STUDIES

Breeding information has been obtained by: 1) Collecting specimens, 2) Live trapping, 3) Examining leaf nests and den trees, and 4) Hunters' bag checks.

The squirrel hunters' bag checks were made with the assistance of twenty State Game Wardens selected to make bag checks. These wardens were given forms to record the desired information, and were instructed in the manner of recording information to insure uniformity in making the bag checks. A copy of the form used, (Appendix 1, 2), is attached. Successful checks were made during the 1949 squirrel hunting season in seventeen counties, and in sixteen counties during the 1950 squirrel hunting season. The counties are listed under Tables 1 and 2.

Information was obtained on young gray squirrels from nest and den tree examinations (Table 3 and 4).

The above information, obtained from July, 1949, through June, 1950, on 24 litters gives an average of 2.38 young per litter, 52.6% males and 47.4% females. The information collected from July, 1950, through June, 1951, on 31 litters gives a total of 85 young or an average of 2.74 young per litter, 52% males and 48% females.

Only five litters of fox squirrels were examined from July, 1949, through June, 1950, and these were all found in old, hollow pine stumps. There was a total of 13 young, 8 males and 5 females, or 62.7% males and 38.8% females. The average number per litter was 2.6.

Table 1. Squirrel hunting data for 1949 hunting season.

County	No. of hunters	Avg. Time per hunt	% still hunters	% dog hunters	Avg. killed per hunt effort	% killed by species		% killed of squirrel seen
						Gray	Fox	
Rankin	61	2.4	61	39	1.0	91	9	91
Jones	88	2.6	83	17	1.6	99	1	41
Winston	13	2.8	100	0	4.0	98	2	73
Sunflower	66	2.8	100	0	2.0	25	75	69
Monroe	54	2.7	67	33	2.3	89	11	
Jackson	39	4.6	85	15	2.6	95	5	81
Jeff Davis	14	2.9	50	50	3.6	98	2	70
Lafayette	82	3.7	68	32	2.5	75	25	65
Lincoln	33	1.5	45	55	1.5	94	6	30
Marion	92	2.4	96	4	4.2	99	1	40
Wilkinson	57	2.2	89	11	3.4	84	16	28
Perry	28		86	14	3.9	88	12	
Coahoma	29	4.1	100	0	2.5	0	100	50
Kemper	58	2.7	48	52	2.6	92	8	62
Sharkey	110	2.7	100	0	2.5	18	82	49
Tishomingo	43	2.9	35	65	2.6	61	39	42
Montgomery	55	3.2	77	23	2.1	78	22	50
State	894	2.83	78.3	21.7	2.52 [a]	72.5	27.5	50

[a] Mean fox = 0.69 and mean gray = 1.83.

Four litters of fox squirrels were examined during the period of July, 1950 through June, 1951. There was a total of 11 young, 4 females and 7 males, 36% females and 64% males. The average number of young per litter was 2.75.

Breeding information on adult female gray squirrels was obtained by trapping, collecting of specimens, and squirrel hunters' bag checks (Table 5).

Table 5 and Fig. 1 and 2 are based on examinations of 2,238 gray squirrels which were obtained as follows:

1. Sixty-two trapped and 20 collected from August 1, 1949, through October 14, 1949.
2. Sixteen hundred twenty-two checked by state game wardens selected to make squirrel hunters' bag checks, and 264 collected by the project leader from October 15, 1949 through December 19, 1949.
3. One hundred forty-three trapped and 82 collected from December 20, 1949 through May 31, 1950.

Table 6 and Fig. 3 and 4 are based on information gathered from the examination of 1852 gray squirrels which were obtained as follows:

1. Forty-six trapped and 38 collected from July 1, 1950 through October 13, 1950.
2. One thousand one hundred thirty-five checked by state game wardens selected to make squirrel hunters' bag checks and 446 collected by the project leader from October 14, 1950 through December 31, 1950.
3. One hundred nine trapped and 78 collected from January 1, 1951 through June 15, 1951.

Table 2. Squirrel hunting data for 1950 squirrel hunting season.

County	No. of hunters	Average time per hunt	% Still hunters	% Dog hunters	Average killed per hunt	% Killed by species		% Killed of squirrel seen by species	
						Gray	Fox	Gray	Fox
Rankin	54	3.2	74	26	1.7	95	5	46	100
Winston	20	3.0	100		2.5	100		34	
Monroe	37	2.9	84	16	2.2	97	3	54	50
Jeff Davis	26	2.1	54	46	2.9	89	11	65	75
Lafayette	91	2.0	60	40	2.2	78	22	55	60
Lincoln	30	2.1	63	37	1.3	85	15	44	86
Marion	38	3.6	74	26	2.9	100		44	
Perry	18	3.8			2.4	97	3	70	52
Kemper	82	2.4	70	30	2.5	95	5	48	
Tishomingo	36	3.2	61	39	2.7	69	31	49	45
Montgomery	40	3.5	62	38	1.9	63	37		
Tunica	57	2.9	95	5	1.7	67	33	27	60
DeSoto	19	3.2	100	2.1		83	17	44	64
Warren	70	3.8	88	12	2.3	10	90	55	62
Jasper	58	3.0	57	43	1.5	87	13	44	52
State	676	3.04	72.3	27.7	2.18 [a]	77	23	48	64

[a] Mean fox = 0.50 and mean gray = 1.68.

Table 3. Gray squirrel nest data.

Date examined	No. examined	No. containing young	Total young	Female	Male
1949					
July - September	84	12	25	13	12
October - December	37	0	0		
1950					
January - March	59	0	0		
April - June	135	8	21	9	12
July - September	119	16	41	19	22
October - December	22	0	0	0	0
1951					
January - March	36	2	7	4	3
April - June	92	7	19	10	9
Total	584	45	113	55	58

Table 4. Gray squirrel den tree data.

Date Examined	No. Located	No. Examined	No. Containing Young	Total Young	Female	Male
1949						
July - September	58	16	0	0		
October - December	150	29	0	0		
1950						
January - March	134	18	2	5	1	4
April - June	142	26	2	6	4	2
1950						
July - September	107	12	0	0		
October - December	82	15	3	8	4	4
1951						
January - March	162	12	5	5	1	4
April - June	112	63	1	5	3	2
Total	947	191	13	29	13	16

Tables 7 and 8 respectively present the percentage of age classes and sex determined from personal examination and State Game Warden hunters' bag check records for the 1949 and 1950 hunting seasons.

HUNTING METHODS, GUN PRESSURE AND KILL

The two major methods of squirrel hunting employed in Mississippi are: 1) Still hunting and 2) dog hunting. Percentages of each hunting method used for the entire state at different intervals were determined from squirrel hunters' bag checks (Table 9).

The 1949 squirrel hunting season hunters' bag checks reveal that 3.9% of the gray squirrels shot were known to have escaped crippled, and 3.7% of the fox

Table 5. Chronological record of adult female gray squirrel breeding data.

Date	% Lactating	% Pregnancy	% Non-breeding	% Total breeding
1949				
August 1	28.3	56.7	15.0	85.0
August 11	40.8	44.1	15.1	84.9
September 1	63.5	24.3	12.2	87.8
September 15	69.2	6.2	24.6	75.4
October 1	66.8	5.4	27.8	72.2
October 15	52.6	4.7	42.7	57.3
October 22	43.4	4.0	52.6	47.4
November 1	34.5	3.2	62.3	37.7
November 7	20.1	5.0	74.9	25.1
November 15	18.3	6.8	76.9	23.1
November 22	15.4	7.7	76.9	23.1
December 1	10.5	9.6	79.9	20.1
December 7	4.1	10.0	85.9	14.1
December 15	2.0	11.4	87.6	12.4
December 22	1.5	16.0	82.5	17.5
1950				
January 1	2.0	16.4	81.6	18.4
January 15	4.0	51.3	44.7	55.3
February 1	3.0	61.2	35.8	64.2
February 15	13.5	54.5	42.0	68.0
March 1	47.2	41.8	11.0	89.0
March 15	60.9	34.7	4.4	95.6
April 1	56.2	19.9	23.9	76.1
April 15	43.7	11.0	45.3	54.7
May 1	35.5	6.0	58.5	41.5

squirrels shot escaped crippled. Hunters' bag checks for the 1950 season show that 3.1% of the gray squirrels shot were known to have escaped crippled, and 6.1% of the fox squirrels shot escaped crippled. This can be considered a minimum cripple loss since only squirrels that were positively known to be crippled were reported.

AVERAGE WEIGHTS OF SQUIRRELS DURING HUNTING SEASON

		Adult Male	Adult Female	Juvenile Male	Juvenile Female
			(1949)		
Gray	(No. Squirrels)	51	63	57	81
	(Avg. Weight oz.)	16.1	16.2	11.3	10.9
Fox	(No. Squirrels)	24	9	6	6
	(Avg. Weight oz.)	25.8	29	18.5	11.8
			(1950)		
Gray	(No. Squirrels)	89	102	126	94
	(Avg. Weight oz.)	16.3	16.7	11.1	9.3
Fox	(No. Squirrels)	37	21	17	23
	(Avg. Weight oz.)	20.5	28.8	19.1	13.4

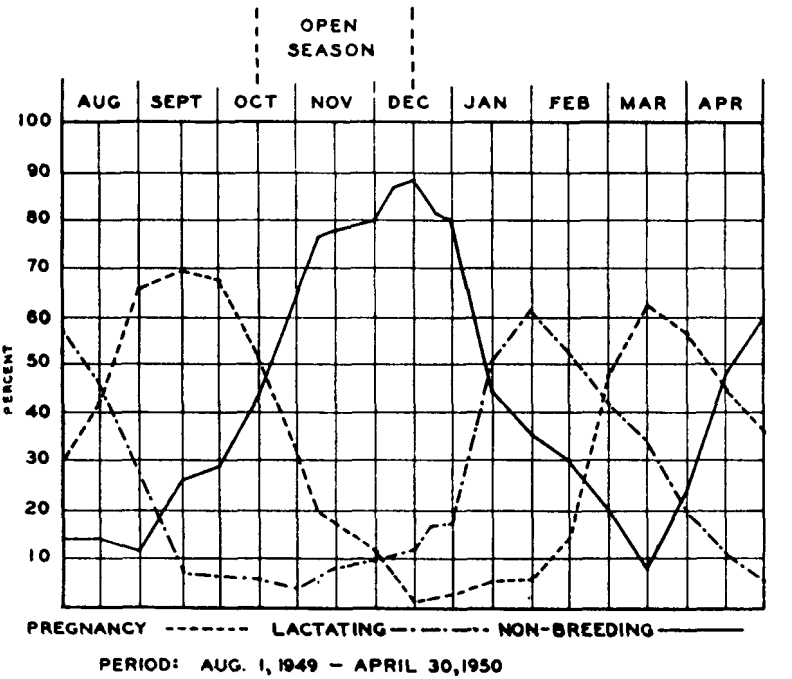

Fig. 1. Breeding conditions of adult female gray squirrels, August 1949 through April 1950.

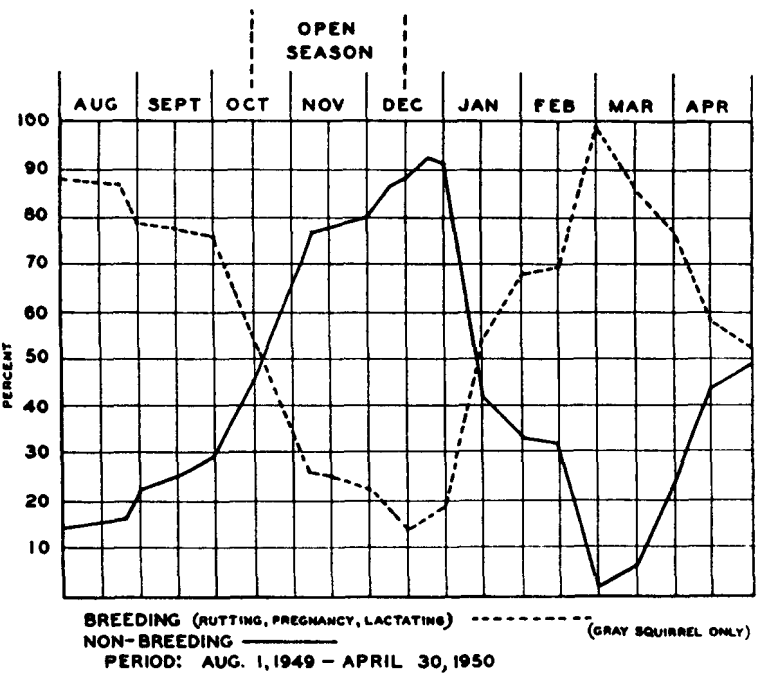

Fig. 2. Ratio of breeding and non-breeding adult female gray squirrels, August 1949 through April 1950.

Table 6. Chronological record of adult female gray squirrel breeding data.

Date	% Lactating	Pregnancy	Non-breeding	Total Breeding
1950				
May 15	25.3	4.2	70.5	29.5
June 1	17.5	1.0	81.5	18.5
June 22	6.8	40.3	52.9	47.1
July 1	7.2	41.7	41.1	58.9
July 22	21.4	41.1	37.5	62.5
August 1	55.4	18.6	26.0	74.0
August 15	62.1	17.2	20.7	79.3
September 1	66.2	16.5	17.3	82.7
September 15	54.8	14.6	30.6	69.4
October 1	31.3	9.0	59.7	40.3
October 15	19.7	4.1	76.2	23.8
October 22	19.2	2.0	78.8	21.2
November 1	16.0	2.0	82.0	18.0
November 7	14.1	3.0	82.9	17.1
November 15	8.5	4.6	86.9	13.1
November 22	10.8	1.0	88.2	11.8
December 1	6.9	5.6	87.5	12.5
December 7	5.7	4.0	90.3	9.7
December 15	2.0	13.9	84.1	15.9
December 22	2.0	20.3	77.7	22.3
1951				
January 1	2.0	22.8	75.2	24.8
January 7	4.6	43.2	52.2	47.8
January 15	3.0	52.1	44.9	55.1
February 1	4.8	57.6	37.6	62.4
February 15	18.7	57.8	23.5	76.5
March 1	28.5	51.2	20.3	79.7
March 15	56.2	28.9	14.9	85.1
April 1	61.8	24.5	13.7	86.3
April 15	48.1	4.0	47.9	52.1
May 1	31.7	0.0	68.3	31.7
May 15	10.0	0.0	90.0	10.0
June 1	5.0	5.0	90.0	10.0

A statewide questionnaire census of game kill in Mississippi was made by personnel of the State Game and Fish Commission for the hunting year of July 1, 1950 through June 30, 1951. A copy of the questionnaire form used is attached to this paper (Appendix 1). The following information was obtained by the questionnaire census on squirrels:

The percentage of total license holders hunting squirrels was 79.83. The total number of squirrel hunters was 150,878. They averaged 7.23 hunts per squirrel season, had an average kill per hunt of 2.21, and an average kill per season of 16.03 squirrels. The estimated total kill statewide is 2,418,574 squirrels.

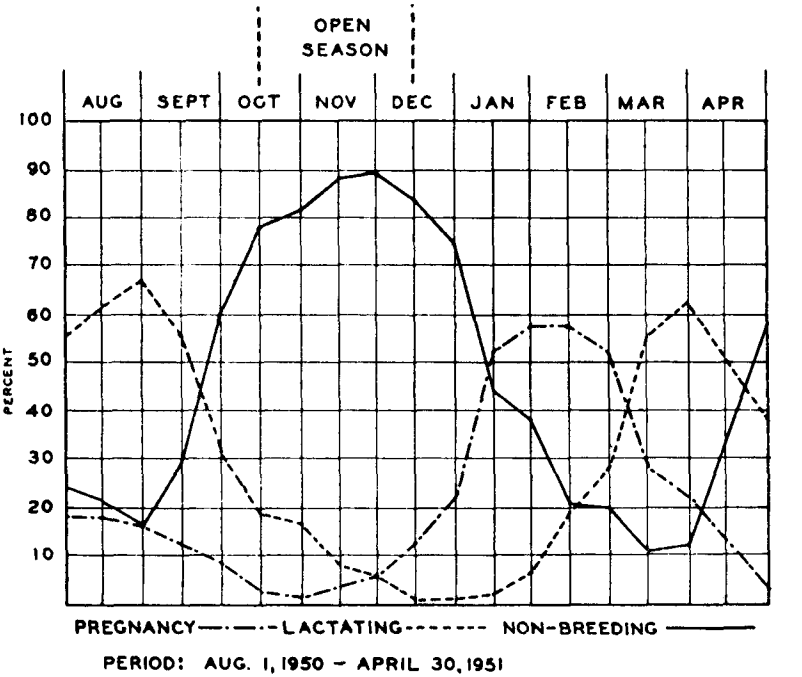

Fig. 3. Breeding conditions of adult gray squirrels, August 1950 through April 1951.

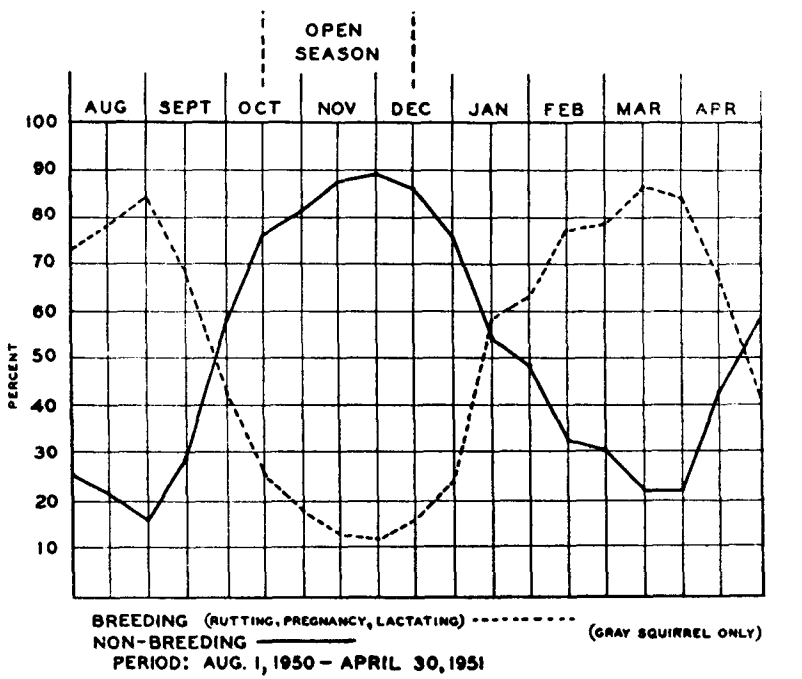

Fig. 4. Ratio of breeding to non-breeding adult female gray squirrels, August 1950 through April 1951.

Table 7. Age and sex classes of gray squirrels determined from examination and bag check records during 1949.

Species	N	Age	(%)	Sex	(%)
	Personal Examination Records				
Gray squirrel	264	adults	50	males	52.3
		juveniles	50	females	47.7
Fox squirrel	45	adults	73.3	males	53.3
		juveniles	26.7	females	46.7
	State Game Wardens' Squirrel Hunters' Bag Checks				
Gray squirrel	1622	adults	50.4	males	55.5
		juveniles	49.6	females	44.5
Fox squirrel	634	adults	64.4	males	52.1
		juveniles	35.6	females	47.9

Table 8. Age and sex classes of gray squirrels determined from examination and bag check records during 1950.

Species	N	Age	(%)	Sex	(%)
	Personal Examination Records				
Gray squirrel	428	adults	47.2	males	58.4
		juveniles	52.8	females	41.6
Fox squirrel	18	adults	55.6	males	66.6
		juveniles	44.4	females	33.4
	State Game Wardens' Squirrel Hunters' Bag Checks				
Gray squirrel	1135	adults	50.1	males	55.7
		juveniles	49.9	females	44.3
Fox squirrel	337	adults	73.3	males	48.1
		juveniles	26.7	females	51.4

Table 9. Percentage of squirrels taken by still and dog hunting.

Date	Still Hunt (%)	Dog Hunt (%)
1949		
October 15 - 30	97	3
November 1 - 15	63	37
November 15 - 31	44	56
December 1 - 15	21	79
Total	78.3	21.7
1950		
October 14 - 30	91	9
November 1 - 15	74	26
November 16 - 31	62	38
December 1 - 15	14	86
Total	72.3	27.7

The average kill per hunter of 2.21 squirrels as found by this questionnaire census compares favorably with the average kill of 2.18 squirrels per hunt effort (1950 season) obtained by the project leader as shown in Table 2. Therefore, this total estimated kill is considered reliable. The total estimated kill (1950 season) by species as determined by the project leader is as follows:

Gray squirrel	1,830,934
Fox squirrel	546,903
Total kill	2,377,837

From 676 squirrel hunters checked during the 1950 hunting season the following information was obtained:

Hunters using license	89.20%
Hunters over age limit	3.11%
Hunters under age limit	3.85%
Hunters hunting on own land (no license)	0.59%
Hunters using permit	0.14%
Hunters unknown (may or may not have license)	3.11%
	100.00%

HABITAT CONDITIONS

Seven study areas located within the Pascagoula River Drainage Area have been set up and kept under periodic observation. These areas are representative of south Mississippi types of squirrel habitat. The topography is of the rolling hill type. Longleaf pine is the dominant tree species on the ridges and hardwoods are dominant in the lowlands. This entire area was stripped of virgin longleaf pine over twenty years ago. Many of the typical longleaf pine sites have been invaded by hardwoods. Young longleaf pine stands still occupy the larger portion of the area. The soil is sandy loam with a clay subsoil. Numerous small farms scattered throughout the area have an average of about 30 acres of land in cultivation. The main agricultural crops are corn and soybeans with some livestock farming. Although in recent years improved pastures have become more common, cattle and hogs, the chief livestock raised, graze throughout most of the forest land. With improved pastures appearing and with the discouragement of open range livestock grazing on public lands, it is believed that within a relatively short period uncontrolled livestock grazing will not be permitted in the forest. This probably will be an advantage to wildlife and the forest. At present, excessive kill and not food shortage is probably limiting the wildlife population.

Study Area No. 7, 640 acres on Cypress Creek in eastern Stone County, has been under observation for more than 2 years — long enough to start giving information of value. The following information, obtained from Study Area No. 7, is presented as an example of the work being done on the study of squirrel habitat conditions.

This area reveals three major types of squirrel habitat. They are: 1) bottomland hardwoods, 2) mixed upland hardwoods and pine, and 3) longleaf pine. The bottomland hardwoods are composed chiefly of the following tree species: swampbay *(Persea pubescens),* magnolia *(Magnolia grandiflora),* beech *(Fagus*

grandifolia), blackgum *(Nyssa sylvatica),* sweetgum *(Liquidamber styracuflua),* water oak *(Quercus nigra),* and other wet-site species. Along the borders are hickories, pines, and other wet-site species. Nearly all of the gray squirrel den trees are found within the swamp in this type of habitat.

Mixed upland hardwoods and pine are composed chiefly of scrub oaks, southern red oak, hickories, and pine. There are dogwoods, *(Cornus florida),* chinquapin *(Castanea sp.),* and winter huckleberries *(Vaccinium arboreum),* scattered throughout this habitat. Very few den trees were found in this type.

A game census of the study area are was made during the fall and winter months for the past three years. In September, 1948, five deer frequently ranged over the southeast corner of the area. Three turkey hens and one gobbler ranged over this area and also three large coveys of quail were present. During the fall of 1949, nine deer, five turkey hens and four gobblers, and four coveys of quail were censused. During the fall of 1950, 15 deer were estimated to be feeding in a field adjacent to the area, and a flock of 21 turkeys was present. There were still only four coveys of quail that could be located.

The deer herd was estimated by tracks where the deer crossed a road to feed in a corn and soybean field. The deer always left the field by the same route they entered, making this count possible. Turkeys were counted by actual observations. Other species present were doves, raccoons, mink, otter, fox, opossum, skunks, and song birds native to this section. The increase in wildlife on this study area and the surrounding area is credited to the protection from poachers made possible by the close cooperation of the local residents.

The area was type-mapped and consists of approximately the following: 1) longleaf pine, 200 acres, 2) bottomland hardwoods, 280 acres, 3) cultivated land, 80 acres, and 4) Mixed upland hardwoods and pine, 80 acres.

Census studies of gray squirrel made over a 3 year period are recorded in Table 10. Data in Table 11 were computed from Table 10.

These tables do not include census figures for fox squirrels although fox squirrels were present. This area is not closed to hunting, although squirrel hunting has been moderate on the area and those hunting have reported their kill during the past three hunting seasons. The known kill on this area is as follows: 1) the 1948 season, 78 gray and 5 fox squirrels, 2) 1949 season, 63 gray and 2 fox squirrels, and 3) 1950 season, 26 gray and no fox squirrels. During the study of this area there were approximately 6 fox squirrels present during the first period, 10 during the second period, and 20 to 25 during the last period. Fox squirrels have been protected from hunting during the last two periods, and the population appears to be responding favorably to the protection given during this two year period.

Information in the tables indicate that the pure pine cover type has no value in maintaining a gray squirrel population in South Mississippi. The mixed hardwoods and pine are of greater importance during the months of September, October, November, and probably the first part of December. According to the information shown in the tables and observations made in the field, bottomland hardwoods are essential for maintaining a suitable population.

From Table 11 the average number of squirrels for the entire census time on the 640 acres was 0.26 per acre, (166 squirrels), 0.33 squirrels per acre (211 squirrels), and 0.26 squirrels per acre (166 squirrels) during 1948 - 49, 1949 - 50, and 1950 - 51, respectively.

Table 10. Census results for study area number 7.

Month/Year	Type of Census	No. Squirrels Found in Each Type			Acres Censused by Type			Total Acres by Type			Estimated no. Squirrels by Type			Total no. Squirrels
		1[a]	2[b]	3[c]	1	2	3	1	2	3	1	2	3	
Sept. 1948	Time-Area-Count	0	4	9	20	20	20	200	80	280	0	16	126	142
Oct. 1948	Time-Area-Count	0	27	9	20	20	20	200	80	280	0	108	126	234
Nov. 1948	Time-Area-Count	0	52	4	20	30	30	200	80	280	0	138	37	175
Dec. 1948	Squirrel Dog	0	0	25	10	10	40	200	80	280	0	0	175	175
Jan. 1949	Squirrel Dog	0	0	23	10	10	40	200	80	280	0	0	161	161
Feb. 1949	Squirrel Dog	0	0	18	10	10	40	200	80	280	0	0	126	126
Sept. 1949	Time-Area-Count	0	7	5	20	20	20	200	80	280	0	28	70	98
Nov. 1949	Time-Area-Count	0	33	8	20	20	20	200	80	280	0	132	242	374
Dec. 1949	Squirrel Dog	0	5	11	20	20	20	200	80	280	0	20	154	174
Jan. 1950	Squirrel Dog	0	0	16	20	20	20	200	80	280	0	0	224	224
Feb. 1950	Squirrel Dog	0	1	12	20	20	20	200	80	280	0	4	168	172
Sept. 1950	Time-Area-Count	0	2	8	20	20	20	200	80	280	0	8	112	120
Nov. 1950	Time-Area-Count	0	16	9	20	20	20	200	80	280	0	64	122	186
Dec. 1950	Squirrel Dog	0	6	14	20	20	20	200	80	280	0	24	196	220
Jan. 1951	Squirrel Dog	0	0	12	20	20	20	200	80	280	0	0	168	168
Feb. 1951	Squirrel Dog	0	4	9	20	20	20	200	80	280	0	16	122	138

[a] 1 — Column 3, 4, 5, 6 – Pine
[b] 2 — Column 3, 4, 5, 6 – Mixed hardwoods and pine
[c] 3 — Column 3, 4, 5, 6 – Bottomland hardwoods

Table 11. Squirrels per acre on study area no. 7.

Month	Avg. number squirrels per acre by type			Avg. no. of squirrels per acre for total area
	Pine	Mixed upland Hardwoods and pine	Bottomland hardwoods	
1948				
Sept.	0	0.20	0.45	0.23
Oct.	0	1.35	0.45	0.36
Nov.	0	1.72	0.13	0.27
Dec.	0	0.00	0.62	0.27
1949				
Jan.	0	0.00	0.58	0.25
Feb.	0	0.00	0.45	0.19
Sept.	0	0.35	0.25	0.15
Nov.	0	1.65	0.86	0.58
Dec.	0	0.25	0.55	0.27
1950				
Jan.	0	0.00	0.80	0.35
Feb.	0	0.05	0.60	0.28
Sept.	0	0.10	0.40	0.18
Nov.	0	0.18	0.43	0.29
Dec.	0	0.30	0.70	0.34
1951				
Jan.	0	0.00	0.58	0.26
Feb.	0	0.20	0.43	0.21

During the first two periods the mast crop was about average on this area, but during the last period the mast crop was a failure in the mixed hardwoods and pine type and was below average in the bottomland hardwoods. This fact can be seen when comparing the average number of squirrels per acre in Table 10. It is believed that there was a shift in the population during the last period, with only the number of squirrels remaining that the bottomland hardwoods were capable of maintaining during the winter months. Census records show that high population peaks were reached in October and November. This is credited to the young of the season. The month of February shows a decrease in population. From observations, this decline in February was probably a result of pregnant females becoming sluggish, making then harder to observe.

DISCUSSION

In view of the information presented, the following has been ascertained. The average number of young per litter for the two year period is 2.56. Fetus counts for the same period gave an average of 2.66 young per litter. This average was obtained from 77 pregnant females. This indicates that approximately an average of 3.75% of the young are lost at time of birth or shortly afterward.

There has been more controversy in Mississippi over the setting of the squirrel hunting season than over any other species. The majority of hunters in the northern part of the state want an early fall season, while those in the southern part want a late season. Those counties in the northern extremity of the state most commonly want a hunting season to open on September 1, and those in the southern extremity want a much later opening season.

Various combinations of zoning, split seasons, and continuous open seasons have been tried within the State. There has always been some discontent among the hunters. The season that has most nearly satisfied all hunters has been October 15 through December 15.

This study revealed that November 7, 1949 and October 15, 1950 would have been the most nearly biologically sound opening hunting season dates in relation to breeding families and young of the season. It is realized that phenological dates can cause this variation, and in trying to set a biologically sound opening date an average over a period of years is needed. Figures 1, 2, 3, and 4 show the breeding peaks in Mississippi. It was found from the information collected that there was no difference in the time the breeding peaks were reached in North Mississippi when compared to South Mississippi.

Appendix 1. Sample of hunter's tag check for squirrel hunting data.

Mail Completed Form to:

Howard R. Redmond, Project Leader
Box 272, Wiggens, Mississippi

HUNTER' BAG CHECK
SQUIRREL HUNTING DATA

Warden: _____

County: _____

Date	Name of Hunter	Lic. No.	No. Hours Hunted	Gun Used: Ga. or Cal.	Hunt Methods: Still Hunting	Hunt Methods: Squirrel Dog	HUNTERS' SUCCESS: Seen Gray	Seen Fox	Bagged Gray	Bagged Fox	Crippled Gray	Crippled Fox	Gray Squirrel: Male Juvenile	Male Adult	Female Juvenile	Female Adult Suckling Young	Female Adult Pregnant	Female Adult Others	Fox Squirrel: Male Juvenile	Male Adult	Female Juvenile	Female Adult Suckling Young	Female Adult Pregnant	Female Adult Others

Occupation of first hunter checked on this page

Appendix 2. Example of hunter's scorecard.

STATE OF MISSISSIPPI
GAME AND FISH COMMISSION

HUNTER'S SCORECARD

WE NEED YOUR HELP!

We picked your name from the list of license holders to help us learn more about the hunting in your county. It will take only a few minutes to answer the questions below.

Please report what YOU killed during the past hunting season. Even if you did not kill anything, or did not hunt at all, we want to know that also. SO PLEASE FILL OUT ALL THE BLANKS.

A self addressed envelope is enclosed. Use it to return the scorecard. You do not need a postage stamp, just put the paper (after you have filled it out) in the envelope, seal it and drop in the nearest post office or mail box. Just estimate the amount of money you spent.

Kind	Number of times you hunted each kind	Total season kill	Kind	Number of times you hunted each kind	Total season kill
Quail	_____	_____	Dove	_____	_____
Squirrel	_____	_____	Ducks	_____	_____
Rabbit	_____	_____	Geese	_____	_____
Deer	_____	_____	Woodcock	_____	_____
Fox	_____	_____	Coot	_____	_____
Raccoon	_____	_____	Rails	_____	_____
Opossum	_____	_____	Turkey (1950)	Month Killed _____	

Did you buy a duck stamp? Yes ____ No ____

How much money do you spend hunting each year? _____

Your Occupation _____ County _____

_____
Your Name

March 1951