A SURVEY OF THE DIFFERENT SPECIES OF SMALL RODENTS, REPTILES AND AMPHIBIANS AT THE MONTGOMERY COUNTY STATE LAKE AREA

A Survey of the Different Species of Small Rodents, Reptiles and Amphibians At the Montgomery County State Lake Area

A Research Problem

Presented to

The Department of Biology

Independence Community College

By

Jimmy Daren Riedle

List of Photographs

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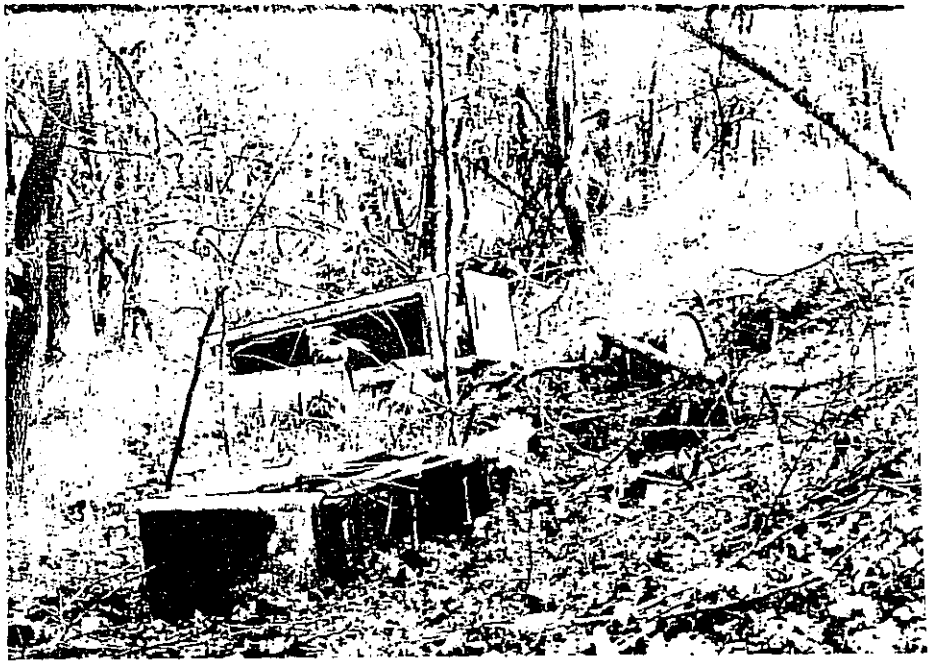

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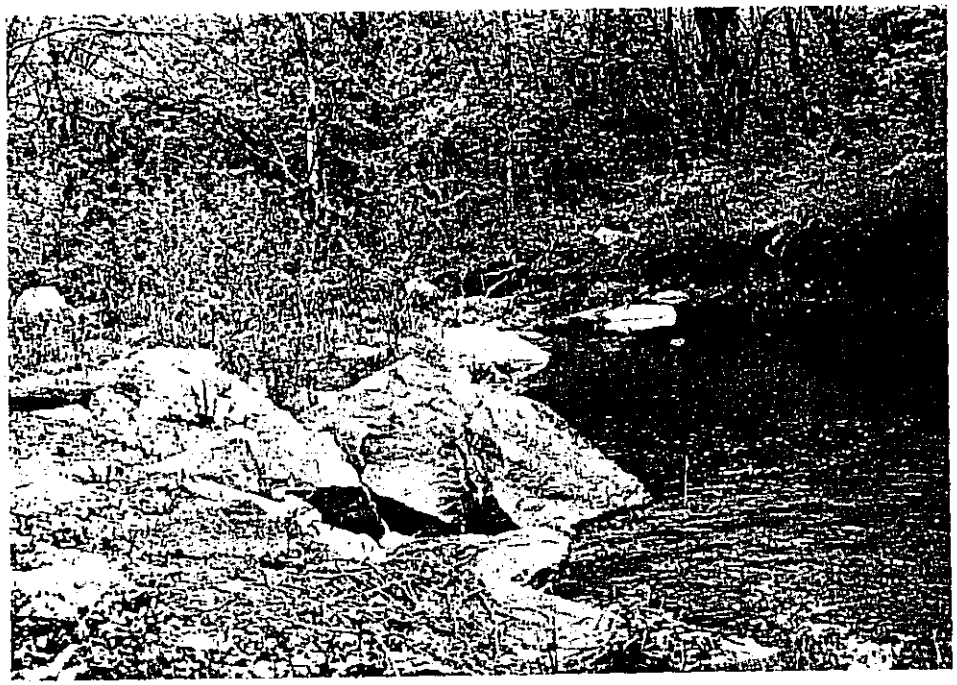

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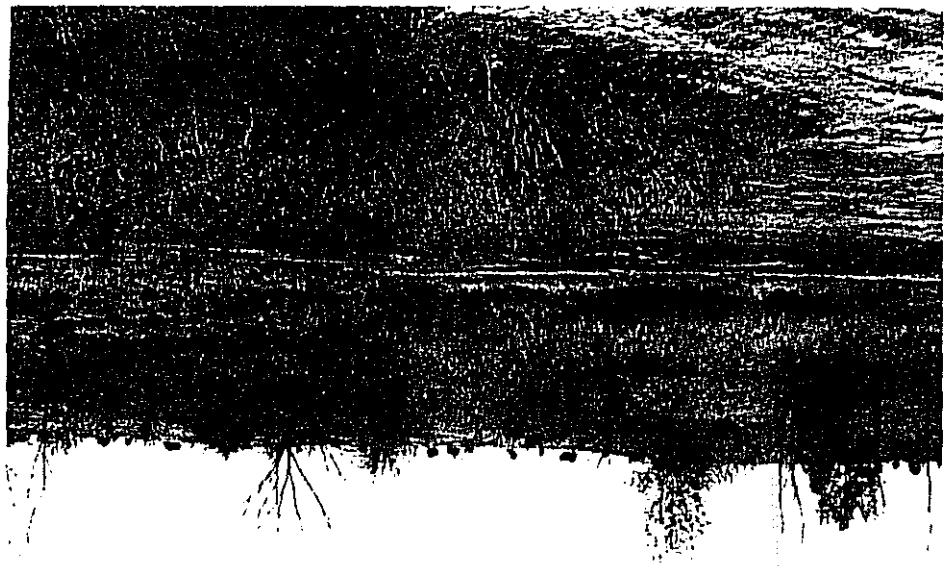

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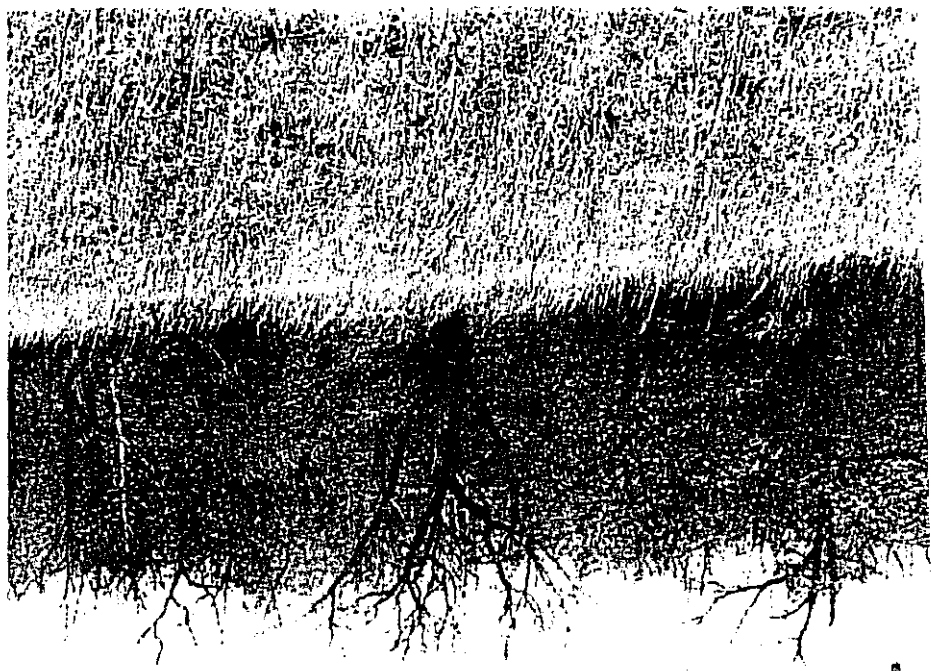

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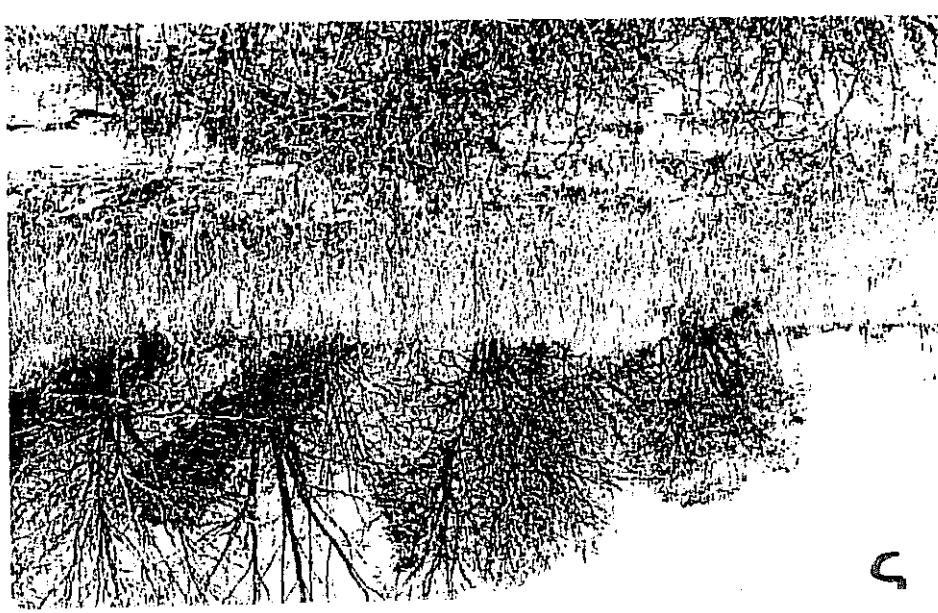

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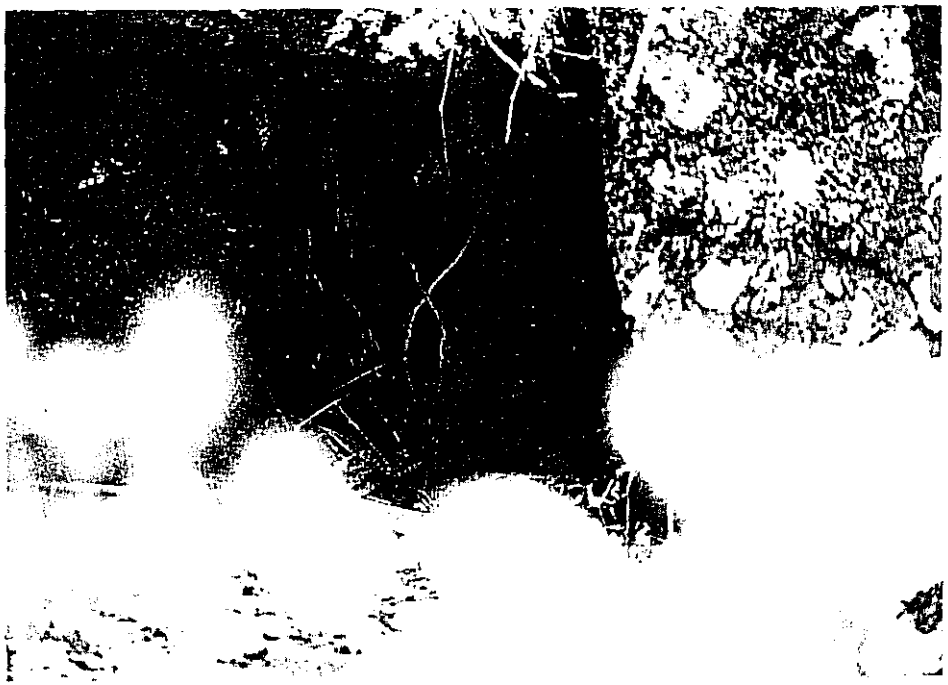

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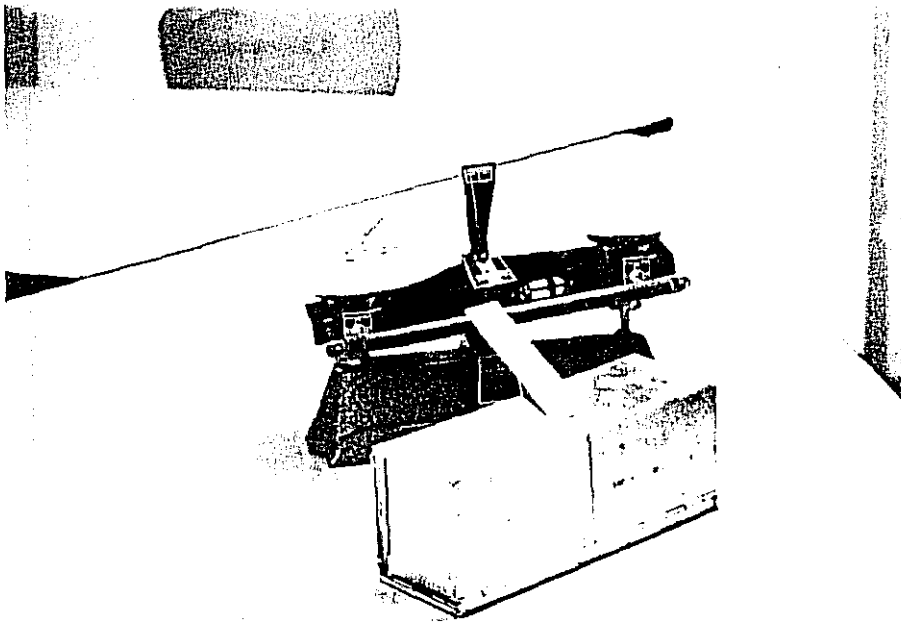

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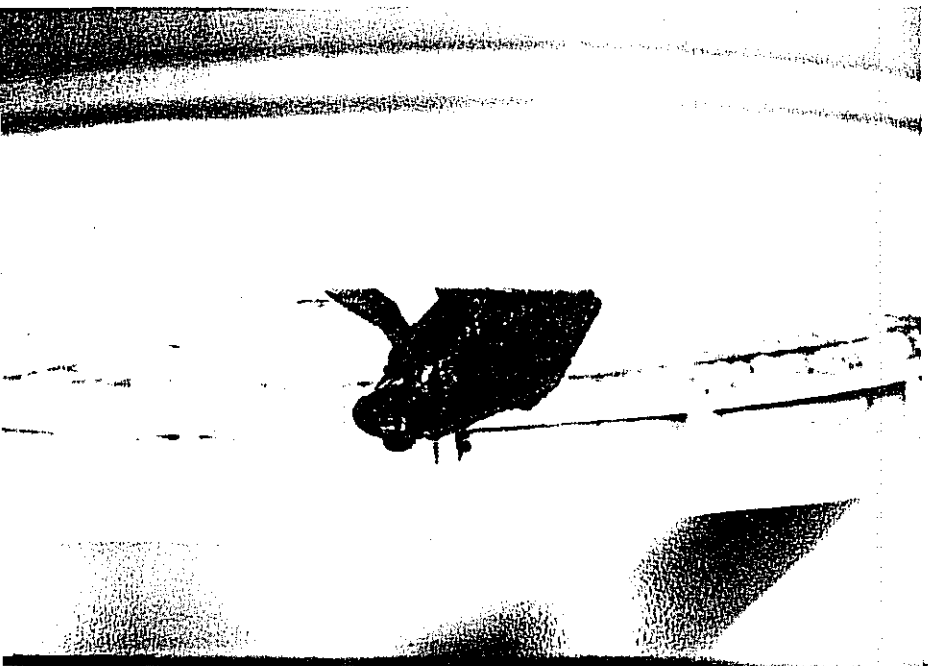

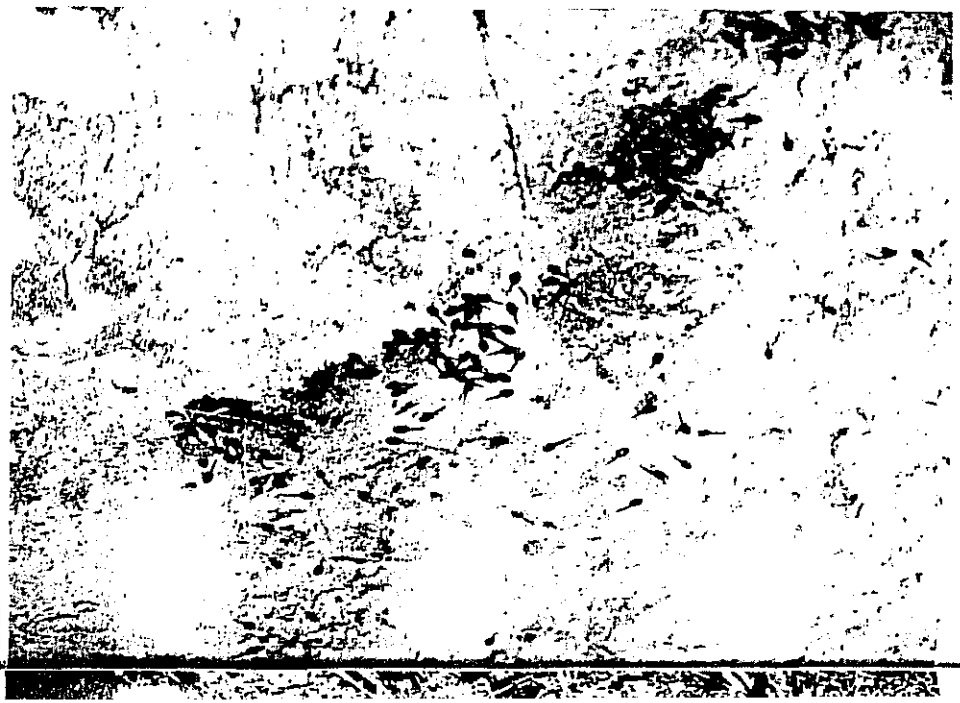

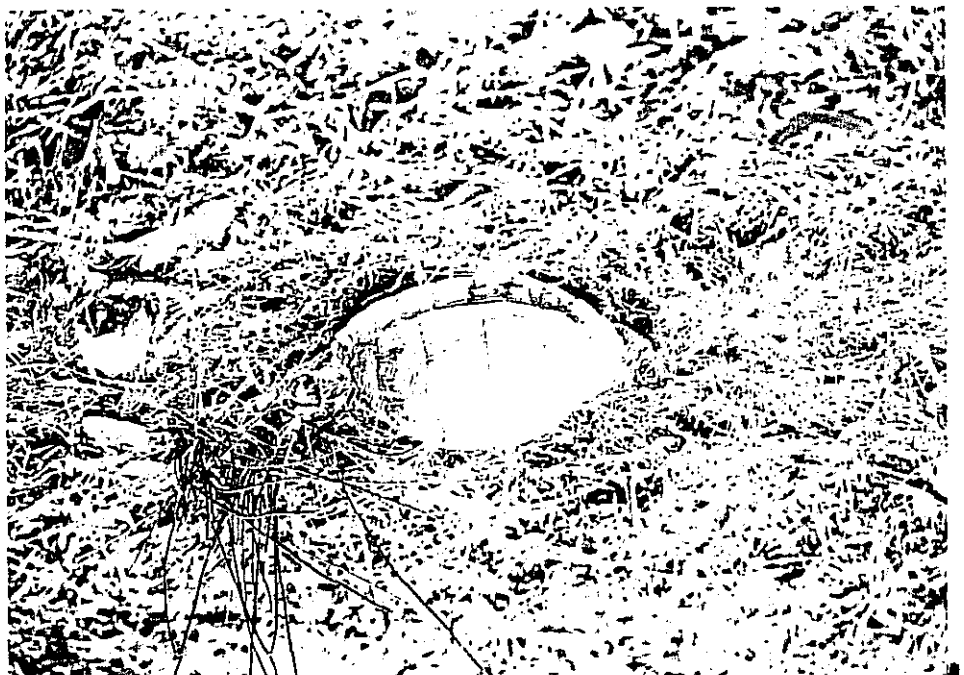

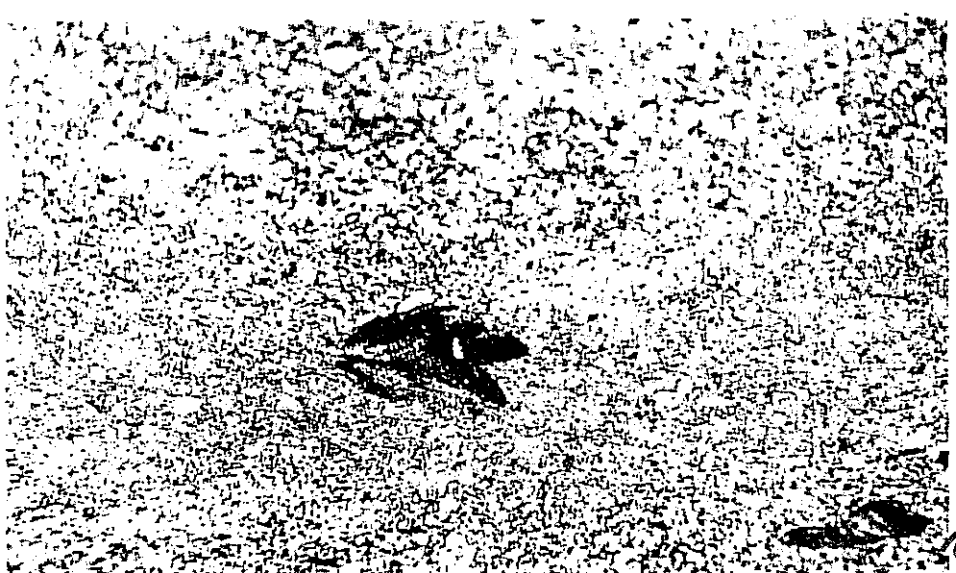

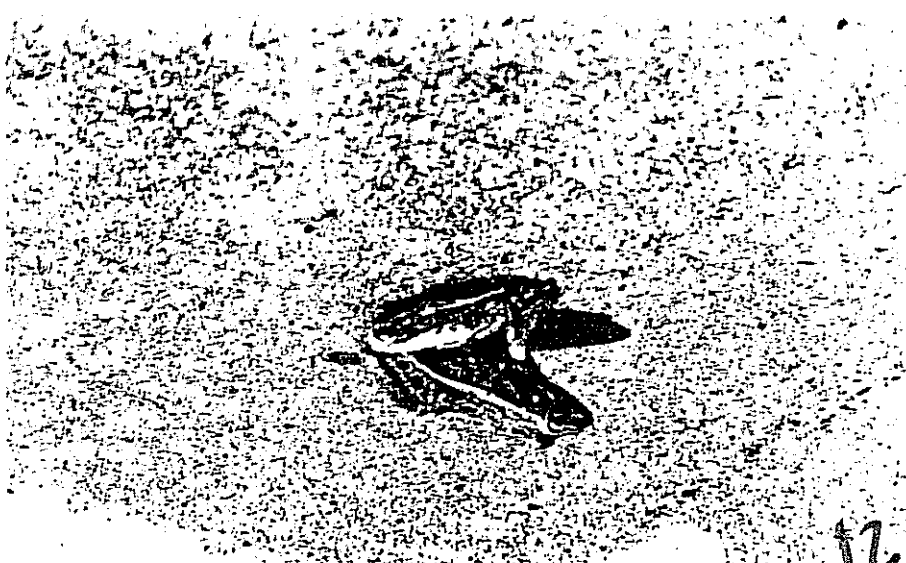

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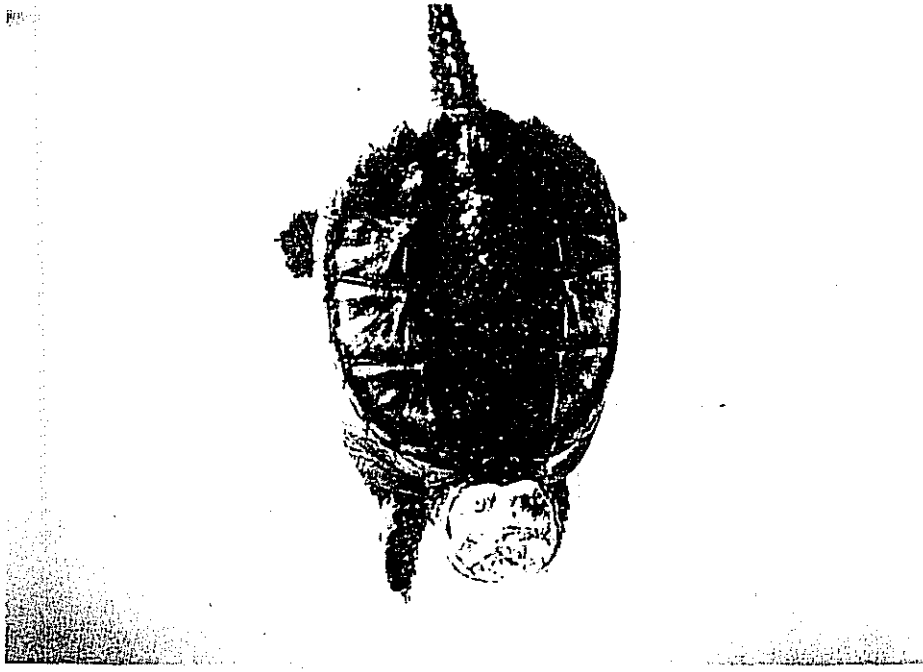

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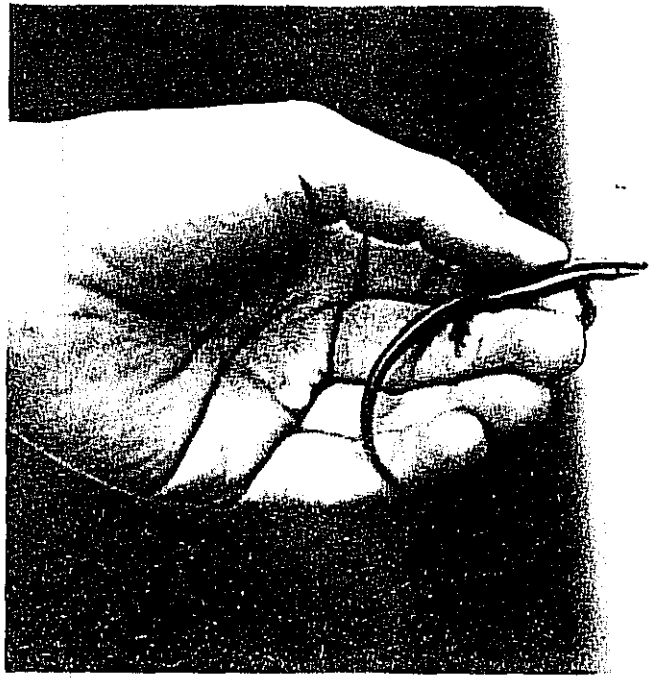

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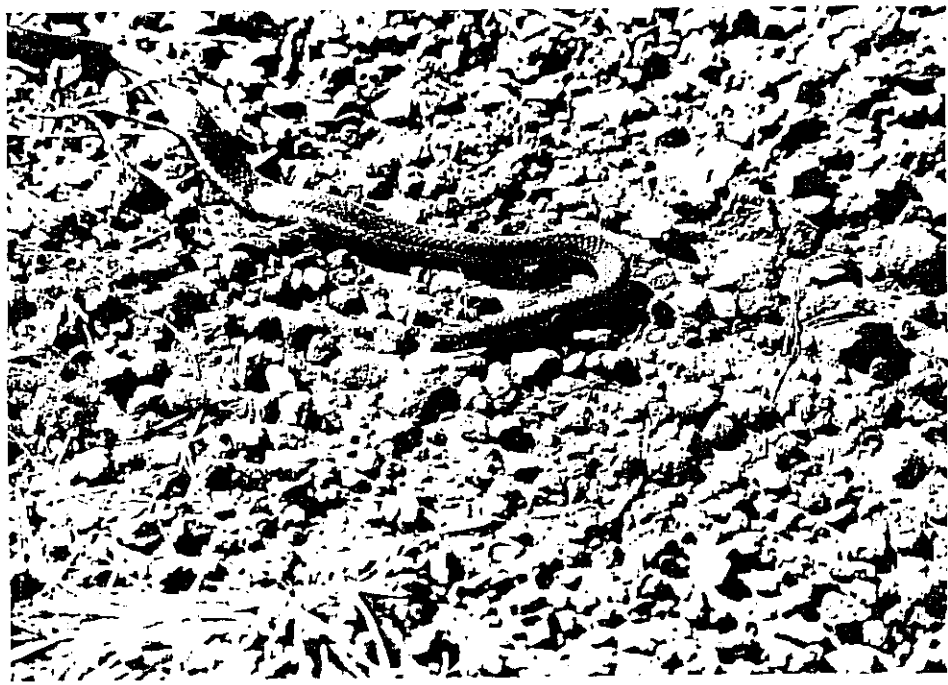

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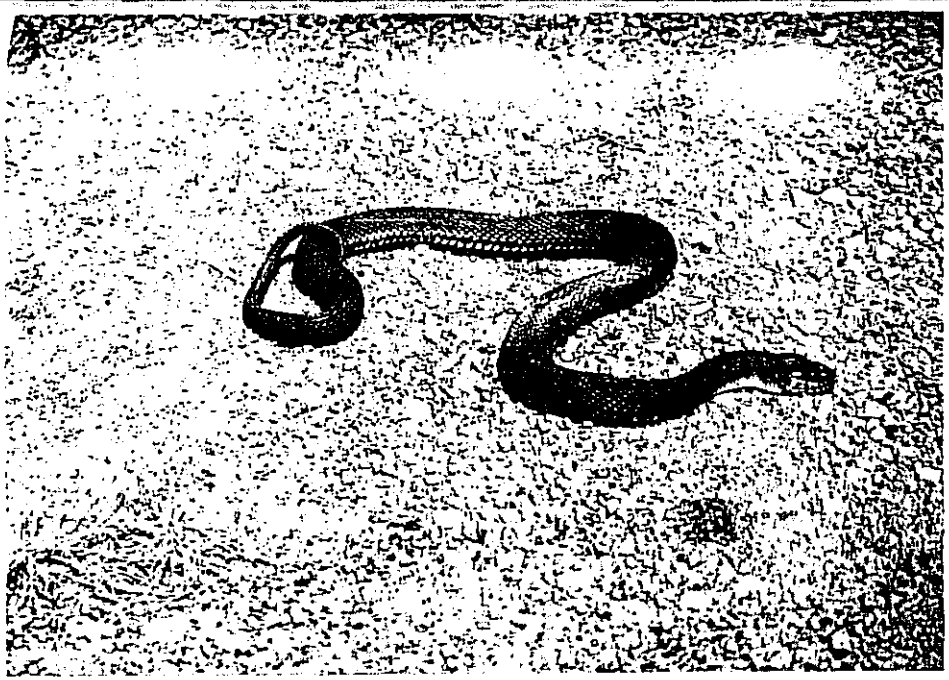

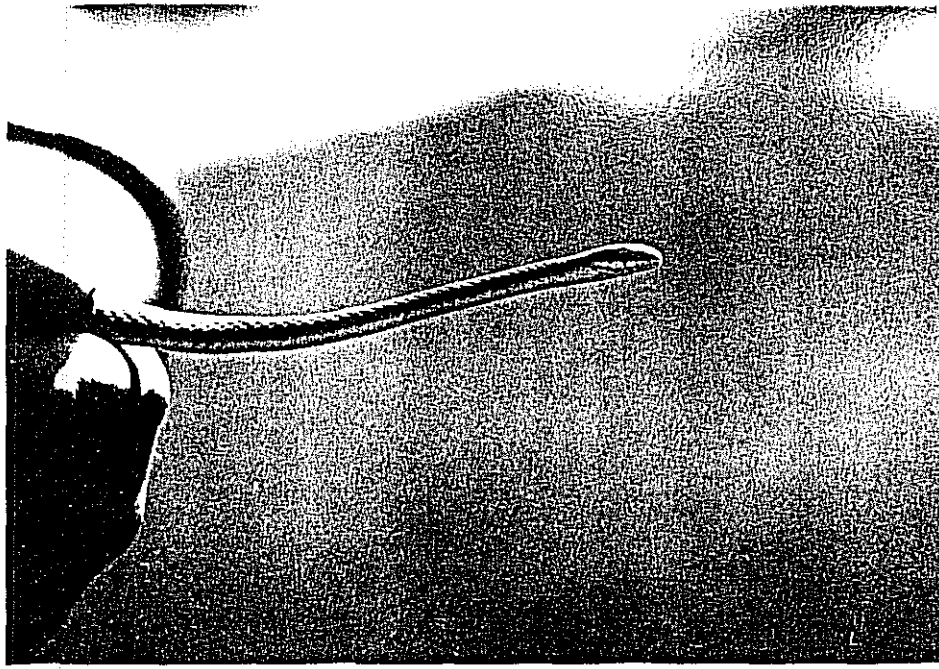

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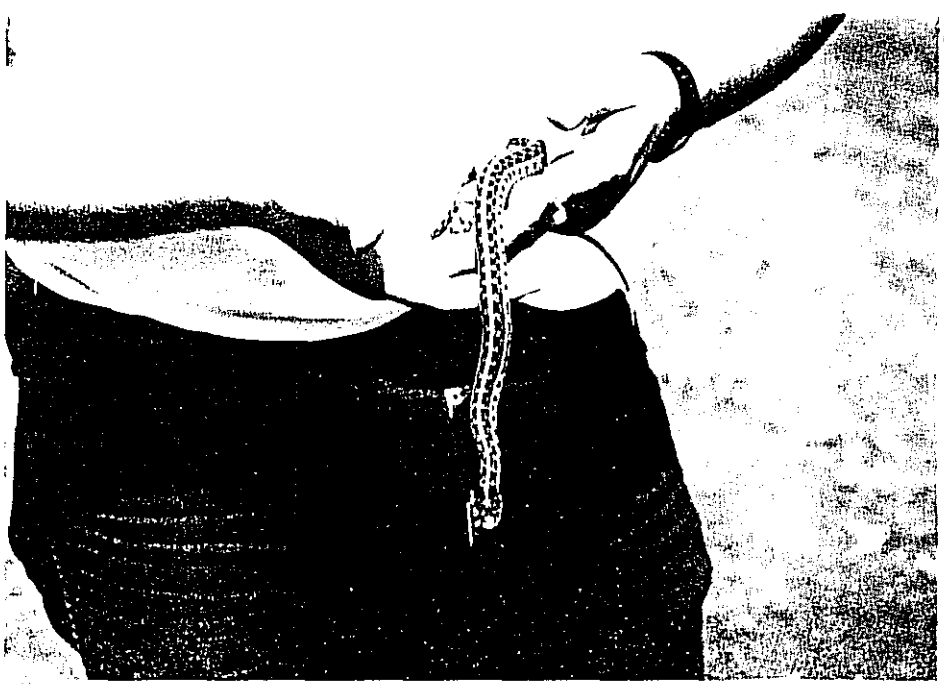

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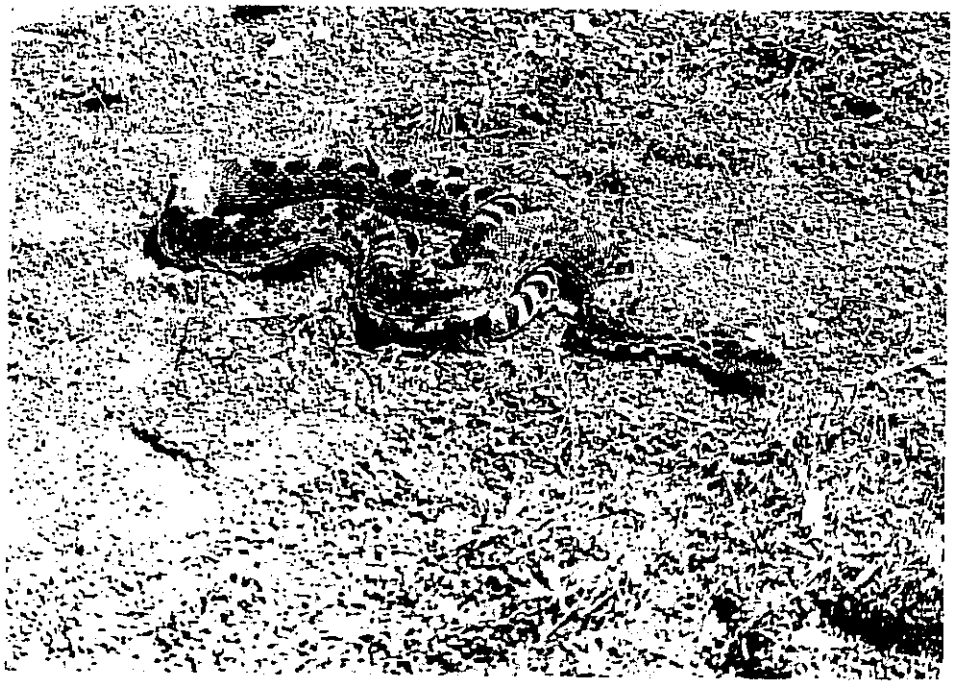


A Survey of the Different Species of Small Rodents, Reptiles and Amphibians At the Montgomery County State Lake Area

The Montgomery County State Lake is a small public lake located eight miles south of Independence, Kansas. It is surrounded by woodlands on the edge, which gradually turns to pasture land. The undergrowth in the woodland area is generally very thick, but thins out as the pasture and woodlands meet.

As with other public fishing lakes, the main animal species that are publicized are those of game fish. Which leads to the purpose of this study. I wanted to find out what other kinds of small animals (rats, mice, reptiles, and amphibians) exist around the Montgomery County State Lake area.

Description of the Areas Studied

The first area studied was a patch of woodland 440' x 300' (Photos 1-3). This area was surrounded by a gravel road on the south and west sides. The north and east boundaries are creeks created by run-off from the lake.

The main species of trees represented in this area were the oaks; Black Jack (Quercus marilanda), Red Oak (Quercus borealis), and White Oak (Quercus alba). There were also a few American Elms (Ulmus Americana) and Sycamore (Platanus occidentalis) scattered throughout the area. The undergrowth is made up of primarily Buckbrush (Symphoricarpus orbiculatus), Poison Ivy (Rhus radicans), and Gill-Over-The-Ground (Glechoma hederacea).

Some of the larger animals found in this area are as follows; Virginia Opossum (Didelphis v. virginiana), Eastern Cottontail (Sylvilagus floridanus), Woodchuck (Marmota monax bunkeri), Fox Squirrel (Sciurus niger rufiventer), Beaver (Castor canadensis missouriensis), Coyote (Canis latrans) and White - tailed Deer (Odocoileus virginianus).

The rest of the areas surveyed were primarily tallgrass areas, but there was significant enough difference between each one to list them separately. Tallgrass Area I (Photo's 4-5), is an 240' X 100' area located at the South end of the dam, where water is allowed to run out of the lake, when the lake reaches a certain level. There is usually water standing on the South end of this area, but with enough rain, the whole area is usually flooded. The main vegetation in this area is Indian Grass (Sorghastrum nutans).

Tallgrass Area II (Photo's 6-7), is an 300' square area which is bordered by the lake & woodland on the West side, woodlands on the East side, and gravel road on the South side. The North side is tallgrass which extends for about 100' and ends in the lake. There is a path that passes through the middle of the area which allows automobiles access to the lake. The ruts in parts of this path provides standing water when there is enough rain.

The trees bordering the area are Quercus marilandica, Quercus borealis, and Ulmus americana. The main grass was Sorghastrum nutans, but the Prickly Pear Cactus (Opuntia polyacanthe) grows quite profusely in this area. A large patch of Symphoricarpos orbiculatus also grows in this area. The larger animals represented in this area are Canis latrans, Sciurus niger rufiventer, and Odocoileus virginianus.

Tallgrass Area III (Photo's 8-10), has no standing water except for a small puddle in the end that lasts a day or two after a rain. Tallgrass Area III is bordered by pastureland on the South and West sides. The North side ends at a gravel road. The East side is woodland.

The main vegetation in this is Sorghastrum nutans, Opuntia polyacantha, and Sumac (Rhus Glabra). Animals noted in this area were Odocoileus virgianus and Canis latrans. Incidently, a C. latrans was occupying a den on the South

side of this area during the course of this study (Photo 11).

Materials & Methods

All small rodents were captured by using Sherman Live Traps (Photo 12). A peanutbutter and oats mixture was the type of bait used. All reptiles and amphibians were captured by hand. Any rodent, reptile, or amphibian that was seen but not captured will be marked as observed.

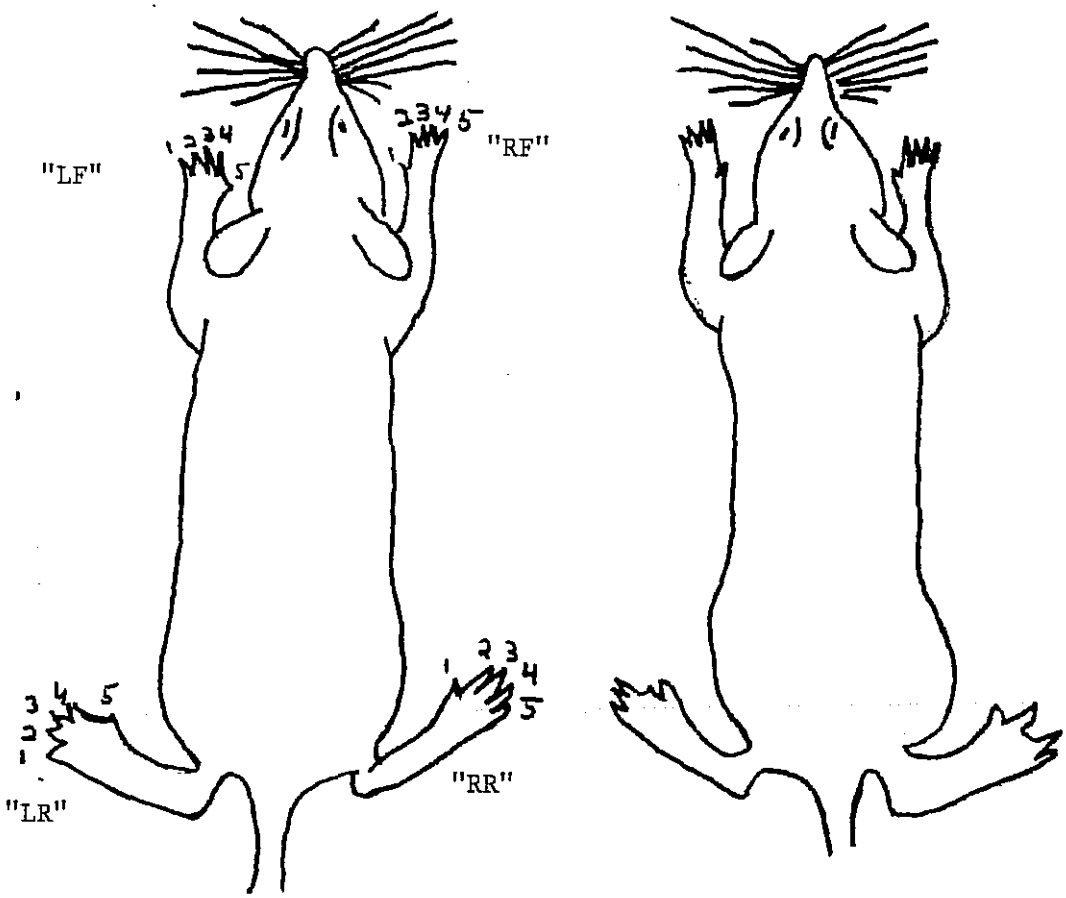
Toe - Codeing

Toe - codeing is a type codeing system which uses the feet and toes as means of identification. The letters "LF" were used to indicate the animals left front foot, "LR" the left rear foot, "RF" the right front foot, and "RR" the right rear foot. The toes were numbered from the outside toward the inside (Arnwine, 1964). This method was employed on rats, mice, toads, frogs, and lizards.

Scale Clipping

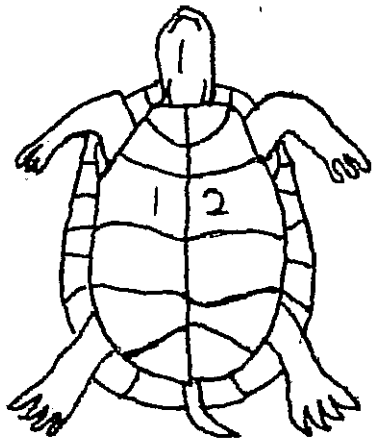
This is a method of codeing snakes described by Phelps (1981). This is done by counting up from the anal scale and clipping a notch on either/or the left and right side. An example code is 5L, 6R. This is accomplished by counting up from the anal scale five scales then putting a notch on the left side. Then go up one more scale to the sixth one and put a notch on the right side. This method was used on all the larger species of snake, excluding the poisonous ones.

Example: Toe-coding System



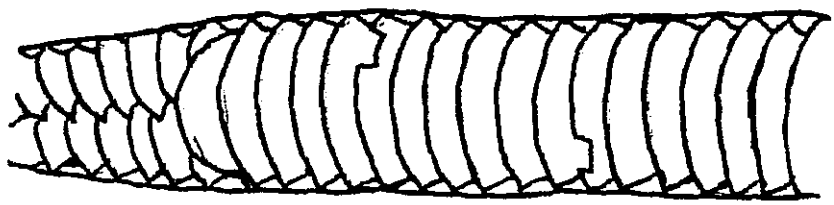
TOE CODE: LR4/RR3

Example of marking system used on turtles.



Specimen No.: 12

Example of scale-codeing system.



Scale Code: 5L/11R

Other Methods Used

All the smaller species of snakes, (Ringneck, etc.), were simply marked with a permanent marker. A hash mark was made on their belly scales to show they had been previously caught. The venomous species of snakes were also done this way to minimize handling. Turtles were also marked with permanent markers. When an individual is caught, it is given a code number, which is then wrote on their plastron.

Other information taken from the rodents was tail length, total length, hindfoot length and weight. Other information taken on reptiles and amphibians is as follows: frogs & toads - snout - to - vent length and weight; turtles - shell length and weight; lizards - snout - to - vent length, total length and weight; snakes - total length and weight.

Results

Rodents

White - footed Mouse (Peromyscus leucopus)

(Photo 13)

There was 4 captures of P. leucopus in this area. There was also an observation of 1 Peromyscus sp.

Deer Mouse (Peromyscus Maniculatus)

(Photo 13)

Only 1 P. maniculatus was captured in this area.

Eastern Woodrat (Neotoma floridana)

(Photo 13)

Although N. floridana was not captured in this area, there is sufficient enough evidence to say they do exist in this area. Three nests were found, (photo 16), and there was fresh fecal samples scattered around two of the nests.

Amphibians

Blanchards Cricket Frog (Acris crepitans blanchardi)

(Photo 22)

There was 43 observations of A. c. blanchardi within three days in this area.

Bullfrog (Rana Catesbeiana)

There was 6 observations of R. catesbeiana. All 6 of the specimens were located in the Northwestern corner of the area. They eluded capture throughout the course of this study.

Reptiles

Three-toed Box Turtle (Terrapene carolina triunguis)

(Photo 24)

There was 8 captures of this species in the woodland area.

Ornate Box Turtle (Terrapene ornata ornata)

(Photo 23)

Only 1 capture of this species was made in this area.

Five-lined Skink (Eumeces fasciatus)

(Photos 28-29)

In this area, there was 4 captures and 19 observations of E. fasciatus.

Ground Skink (Scincella lateralis)

(Photo 27)

3 captures and 2 observations of S. lateralis were made in this area.

Prairie Ringneck Snake

(Diadophis punctatus arnyi)

(Photo 31)

While passing through the area on the last day of the study, there were 3 observations of D. p. arnyi made.

Northern Water Snake (Nerodia sipedon sipedon)

(Photo 33)

There was 1 capture of N. s. sipedon made in this area.

Black Rat Snake (Elaphe obsoleta obsoleta)

(Photo 36)

There was 2 captures of E. o. obsoleta made in this area.

Tallgrass Area I

Rodents

Peromyscus leucopus

There was 2 captures of P. leucopus in this area.

Peromyscus maniculatus

There was 2 captures of P. maniculatus in this area. There was also 2 observations of Peromyscus sp. in this area.

Amphibians

American Toad (Bufo americanus)

(Photos 17-18)

There was 2 captures of B. americanus in this area. I also estimated there was 300 B. americanus tadpoles in this area. An attempt at doing quadrant work to get a better estimate of their numbers was foiled. After two days of rain, the area became completely flooded.

Acris crepitans blanchardi

There was 8 observations of A. c. blanchardi in this area.

Reptiles

Terrapene carolina triunguis

Only 1 capture of T. c. triunguis was made in this area.

Scincella lateralis

Only 1 capture of S. lateralis was captured in this area.

Diadophis punctatus arnyi

There was only 1 capture of D. p. arnyi in this area.

Nerodia sipedon sipedon

There was only 1 capture of N. s. sipedon in this area.

Tallgrass Area II

Rodents

Peromyscus leucopus

P.leucopus was only captured twice in this area.

Peromyscus maniculatus

There was 7 captures of P. maniculatus in this area.

Amphibians

Southern Leopard Frog (Rana utricularia utricularia)

(Photo 21)

1 dead specimen of R. u. utricularia was found in this area.

Reptiles

Terrapene carolina triunguis

There was 2 captures of T. c. triunguis in this area. One shell from this species was also found in this area.

Eumeces fasciatus

There was 2 captures of E. fasciatus in this area. There was also 1 finding of a dead specimen.

Tallgrass Area III

Rodents

Peromyscus leucopus

Only 1 capture of P. leucopus recorded in this area.

Peromyscus maniculatus

There was 3 captures of P. maniculatus recorded in this area.

Amphibians

Rana utricularia utricularia

There was only 1 capture of R. u. utricularia made in this area.

Reptiles

There was no captures or observations of reptiles in this tallgrass area.

Discussion

Woodland Area

Rodents

Peromyscus luecopus

According to Bee (1981), P. luecopus inhabits woodlands, preferably with large climax trees, and dense brushy areas. The woodlands in this area provided these necessity's. A small trash dump in this area also provided shelter for these animals. 3 out of the 4 captures of P. luecopus occurred around the dump. The one Peromyscus sp. observed in this area was probably a P. luecopus due to the habitat.

Peromyscus maniculatus

Although P. maniculatus is a more common inhabitant of grasslands, according to Bee(1981), they do sometimes occur in woodlands. The one capture of P. maniculatus in this area occurred near the dump. This specimen was probably their do to the cover the dump provides.

Although more research is needed on the subject, with the presence of Odocoileus virginianus and Peromyscus sp. , Lyme Disease may become a problem in this area of the state. The two above mentioned animals are the main hosts of the tick Ioxides dammini. This tick in turn is the carrier of the spirochete type organism Borrelia burgdorfei, which

causes Lyme Disease.(Seligmann, 1989) More indepth research on this subject should be done before any definite statement could be made.

Amphibians

Acris crepitans blanchardi

The 43 observations of this species was made along the creeks on the North & East sides. Due to their many numbers no attempt was made to capture them.

Rana catesbeiana

The 6 observations of R. catesbeiana were made on the Northwest side of the area. The stretch of creek they occupied was a meter wide and 50cm. deep. There is dense vegetation growing right up to the bank. 5 of the 6 specimens were half grown with the 6th being full grown. No R. catesbeiana larva was observed in this area.

Reptiles

Terrapene carolina triunguis

Being a creature of the woodlands, (Collins, 1982) T. c. triunguis was fairly common in this area. 8 captures of this species were made with no recaptures. 6 of the captures were made within 20 minutes while hunting with Jim Arnwines Zoology Class.

Terrapene ornata ornata

Legler (1960) says that T. o. ornata inhabits mainly open woodlands and pastureland, which might account for only 1 specimen being captured in this area.

Eumeces fasciatus

All 4 captures and 19 observations of E. fasciatus occurred either in the rocky area near the Eastern creek, and the trash dump. This was probably because of the cover these two areas provided. This species may do well here because of an abundance of their prey items. Field Crickets (Gryllus sp.) and Wolf Spiders (Pirata montanus), were abundant throughout the area. These two organisms fit into the list of E. fasciatus prey items as described by Collins (1981).

Scincella lateralis

The 3 captures and 2 observations of this species occurred next to the Eastern creek, among the rocks and leaflitter.

Diadophis punctatus arnyi

The 3 observations of D. p. arnyi was a welcome surprise. They were found on the last day of this study, April 30, 1992. These were the first members of this species to be found in this area during the course of the survey.

Nerodia sipedon sipedon

1 specimen was captured in this area, basking on a rock, near the Eastern creek.

Elaphe obsoleta obsoleta

The 2 specimens captured, were caught in the southeastern corner of this area.

Tallgrass Area I

Rodents

Peromyscus leucopus

Both of the specimens of P. leucopus were found out in a grassland area. One was ten feet from the woodlands edge, and the other was fifty feet away.

Peromyscus maniculatus

The 2 specimens of P. maniculatus were found on the northern side of the area, away from the standing water on the south side. 2 unknown Peromyscus sp. were also found in this area. One was captured, but escaped while it was being taken from the trap. The other was found occupying the nest in photo 15.

Amphibians

Bufo americanus

Both specimens of B. americanus were found underneath large flat rocks with loose damp soil underneath. This, according to Fitch (1958), is one of their preferred resting spots. In the standing puddles of water on the south side, there was an estimated 300 B. americanus tadpoles. An attempt at doing quadrant work for a better estimate was foiled when the area was flooded after a two days rain.

Acris crepitans blanchardi

On Monday April 16, 1992, 8 specimens of A. c. blanchardi were observed.

Reptiles

Terrapene carolina triunquis

The one specimen of T. c. triunquis was captured in this area after it was observed crossing the road from the woodland area being used in this study.

Scincella lateralis

The one specimen of S. lateralis captured in this area, was found under a large flat rock near the puddles of water on the south side.

Diadophis punctatus arnyi

The one capture of D. p. arnyi was made on the eastern edge of this area.

Nerodia sipedon sipedon

The specimen of N. s. sipedon captured in this area was found under a large flat rock. There was about an inch of water underneath the rock.

Tallgrass Area II

Rodents

Peromyscus leucopus

The 2 captures of P. leucopus in this area were made along the woodlands edge. One was captured on the eastern edge and the other on the western edge of the area.

Peromyscus maniculatus

According to Bee (1981) P. maniculatus is generally a creature of the grasslands, but it does sometimes occur in woodland areas. This seem to be the case in this area, with

all 7 captures occuring along the woodlands edge. All trapping attempts along their runs (Photo 14), in the open grasslands went unsuccessful.

Amphibians

Rana utricularia utricularia

A dead specimen of R. u. utricularia was found floating in a puddle of water. The puddle was in one of the tire ruts which pass through the area.

Reptiles

Terrapene carolina triunguis

There was 2 captures of T. c. triunguis made on the western side of this area, one within twenty feet of the lake. The undergrowth was burned of in the woodlands on the east side on April 8th. While searching in the burned off area, a T. c. triunguis shell was found.

Eumeces fasciatus

On the east side of this area are a few large sandstone rocks. Here a dead specimen of E. fasciatus was found. An unknown species of lizard escaped into the leaves before it could be identified. After this side of the area was burned of, no more lizards were observed there. The other two observations of E. fasciatus were made in the northwest and southwest corners of the area. All observations were made along the edges of woodland.

Tallgrass Area III

Rodents

Peromyscus luecopus

The one capture of P. leucopus in this area was made along the woodland edge in the northeastern corner.

Peromyscus maniculatus

The three captures of P. maniculatus were made along the western edge of the area. One was captured near a small pile of boards in the southwest corner. The other two were captured in a thicket of Sumac (Rhus glabra). (Photo 8)

Amphibians

Rana utricularia utricularia

Collins (1982) Stated that R. u. utricularia sometimes travel great distances from water. The specimen caught in this area was found in the southeastern edge of the area. An eighth of a mile from any body of standing water.

Reptiles

No reptiles were captured or observed in this area.

Other Reptiles & Amphibians Found in the Montgomery County State Lake Area.

This section includes all reptiles and amphibians captured or observed during the course of this study, in other areas besides the four that were surveyed. It also includes all specimens found previous to the study. This information is included to help complete the species list of this area.

Amphibians

Gray Tree Frog

Hyla chrysoscelis-Hyla versicolor Complex

(Photo 19)

One specimen of H. chrysoscelis-versicolor was captured 200 yards east of the surveyed woodland area. This specimen was captured by Jim Arnwine 's Zoology class, April 23, 1992.

Plains Narrow-mouthed Frog (Gastrophryne olivacea)

(Photo 20)

A small group of G. olivacea presently resides along a rocky hillside 200 yards east of the surveyed woodland area.

Reptiles

Aquatic turtles were not included in the survey because of the lack of time and resources needed to study them. I did observe them basking, through binoculars to get a general idea of the different species occuring in the lake. The species that were observed were: Red-eared Slider (Chrysemys scripta elagans), photo 25, and the Western Painted Turtle (Chrysemys picta belli). A species of Map Turtle (Graptemys) sp. was observed. It dove into the water when I tried to get closer to determine the exact species of it. It was not included in my final species list because of this.

Common Snapping-turtle (Chelydra serpintina)

(Photo 26)

One specimen was observed in shallow water along the dam June 1991.

Stinkpot (Sternotherus odoratus)

One specimen was found in the eastern creek of the surveyed woodland area, September 1990. The same day, a S. odoratus shell was found on the northern side of the lake. I have not observed a S. odoratus in this area since then, but due to their secretive habits they may not be seen commonly.

Prairie-lined Racerunner

Cnemidophorus sexlineatus viridis

According to Collins (1982), the optimal air temperature for this species is near 93 degrees fahrenheit. The average air temperature during the course of this survey was 75 degrees fahrenheit. This was probably the reason no specimens were observed or captured during this survey. During the warmer summer months, this species is common all over the lake area.

Eastern Collared Lizard

Crotaphytus collaris collaris

(Photo 30)

1 specimen of C. c. collaris was observed in Tallgrass Area II, September 1991. Collins (1982) says that C. c. collaris occupy rocky areas, which provides cover for

this species. None of the tallgrass areas provided this type of cover.

Rough Green Snake(Opheodrys aestivus)

(Photo 34)

1 specimen of O. aestivus was found on the northern side of the lake, April 30, 1992.

Eastern Yellow-bellied Racer

Coluber constrictor flaviventris

1 specimen of C. c. flaviventris was observed in an woodland area on the northern side of the lake, while on a field trip with Dr. Don Schnurbusch's Botany class, September 1990. Jim Arnwine's Zoology classes have found 3 in the last four years, while on field trips at the Montgomery County State Lake. This information was included to show that C. c. flaviventris occurs in the lake area.

Western Worm Snake

Carphophis ameonus vermis

(Photo 32)

Although C. a. vermis was not observed in any of the surveyed areas, they do occur along a rocky, wooded, hillside directly east of the surveyed woodland area.

Graham's Crayfish Snake (Regina grahami)

One specimen of R. grahami was captured, June 1991, while it was crossing the road near the northwestern edge of the lake. This specimen is now in the preserved collection at Independence Community College.

Red-sided Garter Snake

Thamnophis sirtalis parietalis

(Photo 35)

There was 2 captures of T. s. parietalis in Tallgrass Area I, September 1991.

Speckled Kingsnake

Lampropeltis getalus holbrooki

There was 1 capture of L. g. holbrooki made in April 1991 while on a field trip with Jim Arnwines Zoology Class. This specimen was found along a rocky hillside 200 yards east of the surveyed woodland area. This specimen is in the preserved collection at Independence Community College.

Bullsnake (Pituophis melanoleucus sayi)

(Photo 37)

Jim Arnwines Zoology class captured 1 specimen of P.m.sayi three years ago. This specimen currently resides in the live collection at Independence Community College. According to Collins (1982), P. m. sayi inhabits grasslands, open woodlands, and woodland edge. Although I have never observed this species in the lake area, the habitat is there, and they do occasionally occur there.

Texas Brown Snake

Storiea dekayi texana

1 capture of S. d. texana was made in the surveyed woodland area, July 1991.

Blotched Water Snake

Nerodia erythogaster transversa

1 juvenile N. e. transversa was captured by Jim Arnwine's Zoology class in the Tallgrass Area I, April 1991.

Osage Copperhead

Akistrodon contortrix phaeogaster

1 specimen of A. c. phaeogaster was captured 50 yards east of the surveyed woodland area, April 1991. There was also 1 juvenile specimen captured in the surveyed woodland area, September 1991.

Summary

Four areas, showing four types of habitat were chosen to be surveyed to help develop a species list of rats, mice, reptiles,and amphibians around the Montgomery County State Lake area. These areas were designated: Woodland Area, Tallgrass Area I, Tallgrass Area II, and Tallgrass Area III. The survey revealed 1 species of rat, 2 species of mice, 1 species of toad, 3 species of frogs, 2 species of turtles, 2 species of lizards, and 3 species of snakes, living in those four areas.

I then included all the species observed or captured during the survey, but in different areas than those studied. I also included all species caught previous to the survey. This brought the total count to 1 species of rat, 2

species of mice, 1 species of toad, 5 species of frogs, 6 species of turtles, 4 species of lizards, and 13 species of snakes.

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Appendix A

The Complete Species List Of Rats, Mice, Reptiles, and Amphibians at the Montgomery County State Lake Area As Compiled Through This Survey

Rats

1. Eastern Woodrat (Neotoma floridana)

Mice

1. White-footed Mouse (Peromyscus luecopus)
2. Deer Mouse (Peromyscus maniculatus)

Toads

1. American Toad (Bufo americanus)

Frogs

1. Blanchards Cricket Frog (Acris crepitans blanchardi)
2. Gray Tree Frog (Hyla Chrysoscelis-Hyla versicolor Complex).
3. Bullfrog (Rana catesbeiana)
4. Southern Leopard Frog (Rana utricularia utricularia)
5. Plains Narrow-mouthed Frog (Gastrophryne olivacea)

Turtles

1. Red-eared Slider (Chrysemys scripta elegans)
2. Western Painted Turtle (Chrysemys picta belli)
3. Three-toed Box Turtle (Terrapene carolina triunguis)
4. Ornate Box Turtle (Terrapene ornata ornata)
5. Stinkpot (Sterntherus odoratus)
6. Common Snapping Turtle (Chelydra serpentina)

Lizards

1. Eastern Collared Lizard (Crotaphytus collaris collaris)
2. Prairie-lined Racerunner (Cnemidophorus sexlineatus viridis)
3. Five-lined Skink (Eumeces fasciatus)

4. Ground Skink (Scincella lateralis)

Snakes

1. Rough Green Snake (Opheodrys aestivus)
2. Eastern Yellow-bellied Racer (Coluber constrictor flaviventris)
3. Black Rat Snake (Elaphe obsolata obsolata)
4. Western Worm Snake (Carphophis amoenus vermis)
5. Prairie Ringneck Snake (Diadophis punctatus arnyi)
6. Graham's Crayfish Snake (Regina grahami)
7. Red-sided Garter Snake (Thamnophis sirtalis parietalis)
8. Speckled Kingsnake (Lampropeltis getulus holbrooki)
9. Bullsnake (Pituophis melanoleucus sayi)
10. Northern Water Snake (Nerodia sipedon sipedon)
11. Blotched Water Snake (Nerodia erythogaster transversa)
12. Texas Brown Snake (Storeria dekayi texana)
13. Osage Copperhead (Agkistrodon contortix phaoegaster)

Appendix B

Data Collected From Woodland Area

Wensday, February 12

1. Peromyscus luecopus

Total Length: 150mm.

Tail: 60mm.

Hindfoot: 21mm.

Weight: 17g.

Toe Code:LF1/RR1

Monday, February 17

1. Peromyscus luecopus

Total Length: 175mm.

Tail: 75mm.

Hindfoot: 20mm.

Weight: 32g.

Toe Code:RF4

2. Peromyscus luecopus

Total Length: 130mm.

Tail: 60mm.

Hindfoot: 23mm.

Weight: 17g.

Toe Code:RR4

3.Peromyscus maniculatus

Total Length: 135mm.

Tail: 60mm.

Hindfoot: 20mm.

Weight: 15g.

Toe Code:LR1

Wensday, February 19

1. Peromyscus leucopus

Total Length: 150mm.

Tail: 60mm.

Hindfoot: 22mm.

Weight: 19g.

Toe Code:LR4

Wensday, April 8

1. Elaphe obsoleta obsoleta

Length: 170cm.

Weight: 637g.

Scale Code:5R/6L

2. Eumeces fasciatus

Snout-vent Length: 65mm.

Total Length: 120mm.

Weight: 2.5g.

Toe code:RR4

3. Scincella lateralis

Snout-vent: 37mm.

Tail: Broke off.

Weight: .4g.

Toe Code:RR2

Observations: 5 Eumeces fasciatus, 1 Scincella lateralis.

Monday, April 13

1. Nerodia sipedon sipedon

Length: 109cm.

Weight: 449g.

Scale Code: 3R/3L

Thursday, April 16

1. Terrapene carolina triunguis

Shell Length: 14cm.

Weight: 428g.

Code No. 4

2. T. c. triunguis

SL: 13.7cm.

W: 458g.

Code No. 4

3. Elaphe obsoleta obsoleta

Length: 113.9cm.

Weight: 344g.

Scale Code:4R/4L

Observations: 9 Eumeces fasciatus, 1 Scincella lateralis, 10 Acris crepitans blanchardi, and 6 Rana catesbeiana

Thursday April 23

1: Terrapene carolina triunguis

Shell Length: 8.6cm.

Weight: 109g.

Code No. 6

2. T. c. triunguis

SL: 8.8 cm

W: 95g.

Code No. 7

3. T. c. triunguis

SL: 14cm.

W: 497g.

Code No. 8

4. T. c. triunguis

SL: 12.5cm.

W: 383g.

Code No. 9

5. T. c. triunguis

SL: 14.4cm.

W: 522g.

Code No. 10

6. T. c. triunguis

SL: 14.5cm.

W: 476g.

Code No. 11

7. Terrapene ornata ornata

Shell Length: 11.4cm.

Weight: 309g.

Code No. 1

8. Eumeces fasciatus

Snout-vent: 8cm.

Total Length: 16cm

Weight: 11g.

Toe Code:RR3

9. E. fasciatus

S-V: 6.5cm.

TL:13.5cm.

W: 3g.

TC:RR2

10. E. fasciatus

S-V: 4.9cm.

TL: 11.4cm.

W: 3g

TC: LR3

11. Scincella lateralis

Snout-Vent: 5.2cm.

TL: Tail broke off, TL =5.2 cm.

W: 3g.

TC:LR3

12. S. lateralis

S-V: 4.5cm.

TL: Tail broken off:

W: 2g.

TC: LR4

Appendix C

Data Collected From Tallgrass Area I

Monday March 16

1. Peromyscus leucopus

Total Length: 177mm.

Tail: 82mm.

Hindfoot: 21mm.

weight:18g.

Toe Code:LF2

2. Peromyscus maniculatus

Total Length: 140mm.

Tail: 60mm.

Hindfoot: 20mm.

Weight: 20g

Toe Code: RF3

Monday, March 23

1. Peromyscus leucopus

Total Length: 178mm.

Tail: 77mm.

Hindfoot: 18mm.

Weight: ?

Toe Code:RR3/LR4

2. Peromyscus maniculatus

Total Length: 140mm.

Tail: 57mm.

Hindfoot: 19mm.

Weight: 23g.

Toe Code:RF3/LF2

3. Unknown Peromyscus sp. escaped before data could be taken.

Wensday April 8

1.Diadophis punctatus arnyi

Length: 27cm.

Weight: 5g.

2. Scincella lateralis

Snout-Vent: 55m.

Total Length: 85mm.

Weight 1.1g.

Toe Code:RR1

3. Bufo americanus

Snout-Vent: 51mm.

Weight: 14g.

Toe Code:RR4

4. B.americanus

S-V: 56mm.

W: 16.5g.

Toe Code: LR2

Thursday, April 16

1. Nerodia sipedon sipedon

Length: 94.2cm.

Weight: 284g.

Scale Code:5R/5L

Observations: 8 Acris crepitans blanchardi

Thursday April 23

1. Terrapene carolina triunguis

Shell Length: 13.5cm.

Weight: 465g.

Code No. 5

Appendix D

Data Collected From Tallgrass Area II

Wensday March 25

1. Peromyscus leucopus

Total Length: 168mm.

Tail: 73mm.

Hindfoot: 20mm.

Weight: 20g.

Toe Code:LF3/RR2

2. Peromyscus maniculatus

Total Length: 161mm.

Tail: 68mm.

Hindfoot: 17mm.

Weight: 24g.

Toe Code:RR2/RR3

3. P. maniculatus

TL: 146mm.

T: 66mm.

HF: 20mm.

W: 15g.

Toe Code:LF3/RF2

Monday April 6

1. Peromyscus maniculatus

Total Length: 155mm.

Tail: 72mm.

Hindfoot: 17mm.

Weight: 21g.

Toe Code:LF2/RF3

Observed 1 dead Eumeces fasciatus.

Wensday April 8

1. Peromyscus leucopus

Total Length: 147mm.

Tail: 67mm.

Hindfoot: 21mm.

Weight: 17g.

Toe Code:RF3/RR3

2. Peromyscus maniculatus

Total Length: 147mm.

Tail: 65mm.

Hindfoot: 18mm.

Weight: 17g.

Toe Code:LF3/LR3

Thursday April 9

Observed 1 Eumceces fasciatus

Monday April 13

1. Terrapene carolina triunguis

Shell Length: 14.5cm.

Weight: 379g.

Code No. 1

2. T. c. triunguis

SL: 13.5cm.

W: 224g.

Code No. 2

Thursday April 16

Observed 1 Eumeces fasciatus, 1 dead Rana utricularia utricularia, and 1 Terrapene carolina triunguis shell.

Wensday April 22

1. Peromyscus maniculatus

Total Length: 135mm.

Tail: 55mm.

Hindfoot: 20mm.

Weight: 16g.

Toe Code:LR2/RR3

2. P. maniculatus

TL: 147mm.

T: 62mm.

HF: 18mm.

W: 16g.

Toe Code:LF3/RF2

3. P. maniculatus

TL: 148mm.

T: 63mm.

HF: 15mm.

W: 20g.

Toe Code:LR4/RR4

Appendix E

Data Collected From Tallgrass Area III

Wensday February 24

1. Peromyscus leucopus

Total Length: 170mm.

Tail: 85mm.

Hindfoot: 21mm.

Weight: 23g.

Toe Code:RR2

2. Peromyscus maniculatus

Total Length: 125mm.

Tail: 55mm.

Hindfoot: 22mm.

Weight: 16g.

Toe Code:RR3

3. P. maniculatus

TL: 141mm.

T: 61mm.

HF: 17mm.

W: 17g.

Toe Code: LR4

4. P. maniculatus

TL: 157mm.

T: 82mm.

HF: 19mm.

W: 23g.

Toe Code:RR2

Thursday April 30

1. Rana utricularia utricularia

Total Length: 63mm.

Weight: 18g.

Riedle, J. D. 1992. A survey of the different species of small rodents, reptiles and amphibians at the Montgomery county state lake area. Kansas Department of Wildlife and Parks. 55pp.

Abstract: The Montgomery County State Lake is a small public lake located eight miles south of Independence, Kansas. It is surrounded by woodlands on the edge, which gradually turns to pasture land. The undergrowth in the woodland area is generally very thick, but thins out as the pasture and woodlands meet.

As with other public fishing lakes, the main animal species that are publicized are those of game fish. The purpose of this study was to find out what other kinds of small animals (rats, mice, reptiles, and amphibians) exist around the Montgomery County State Lake area.

Four areas showing four types of habitat were chosen to be surveyed to help develop a species list. The survey revealed one species of rat, two species of mice, one species of toad, three species of frogs, two species of turtles, two species of lizards, and three species of snakes living in those four areas.

All the species observed or captured during the survey but in different areas than those studied were included along with all species caught previous to the survey. This brought the total count to one species of rat, two species of mice, one species of toad, five species of frogs, six species of turtles, four species of lizards, and thirteen species of snakes.