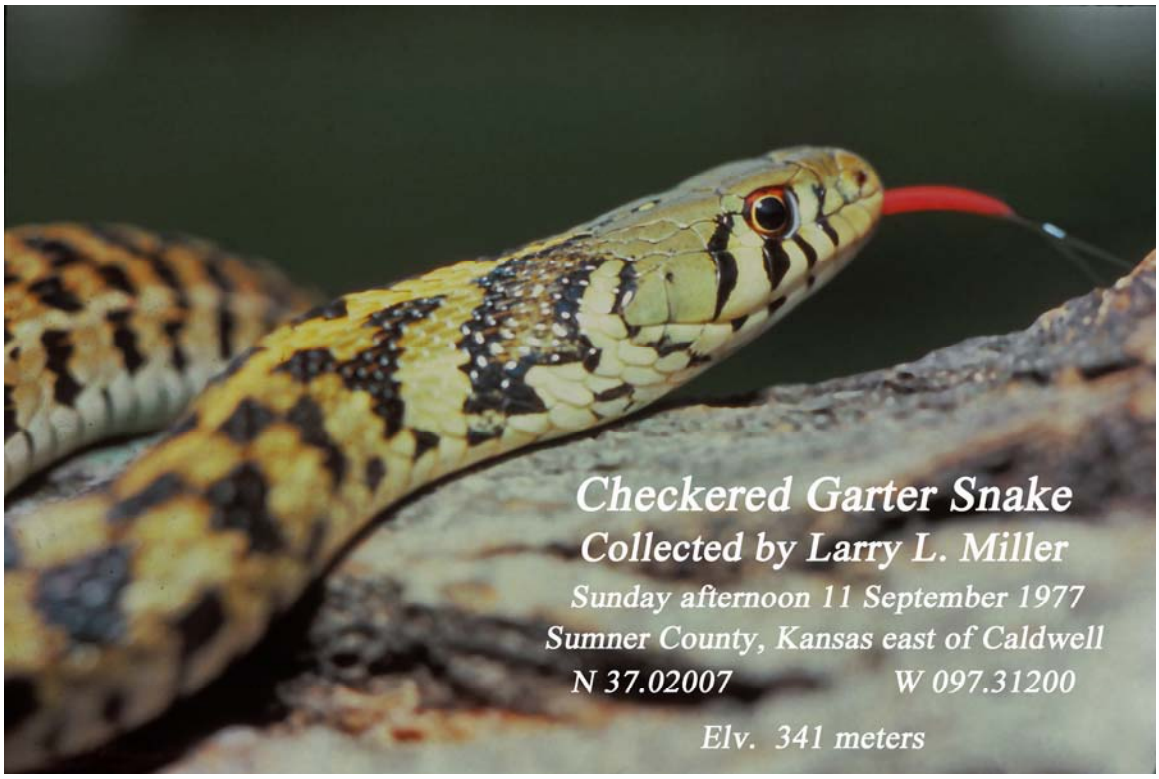
2010 INVESTIGATION OF THE CHECKERED GARTER SNAKE IN KANSAS WITH NOTES ON OTHER AMPHIBIANS, REPTILES, AND TURTLES ENCOUNTERED



By

Larry L. Miller & Suzanne L. Miller
Kansas Heritage Photography
840 S.W. 97th Street
Wakarusa, KS 66546

6 February 2011

2010 INVESTIGATION OF THE CHECKERED GARTER SNAKE IN KANSAS WITH NOTES ON OTHER AMPHIBIANS, REPTILES, AND TURTLES ENCOUNTERED

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INTRODUCTION

The Checkered Garter Snake (*Thamnophis marcianus*) is considered by many to be one of the rarest snakes in Kansas. As of 1 May 2010 there were fewer than 20 Kansas specimens in museum collections with only a few other documented photographs or documented observations of this species by professional herpetologists.

Before this project got underway during the spring of 2010 the last museum specimen from Kansas was collected by Tammy Wittum, Mandy Struble, and me from the entrance of a gypsum cave located south of Sun City in Barber County, Kansas. The snake, an adult, was found in the cool twilight zone of the cave. The outside temperature was 95° F. under clear skies. It was preserved (KU 206495) and is in the Museum of Natural History collection at the University of Kansas. It was collected on 17 August 1986.

A specimen of the Checkered Garter Snake was observed and photographed southwest of Caldwell, Kansas in Sumner County by the late Gene Trott and me during 1988. Another adult Checkered Garter Snake was observed by me while conducting a non-related photo shoot during late October 1989 in the Atena, Kansas area of Barber County, Kansas. That specimen was collected by Dan Ryan (elementary student from Barman, Oklahoma) during the shoot, but was set free after it was identified by me. It was from an area where several other specimens had been found and did not represent a new locality record or range extension. It was the last sighting before 2010. However, according to the Kansas Herpetofaunal Atlas, an online website, as of 1 January 2011, "Ball (1992) reported observing 16 specimens in Morton County during the period 1985-1991. He considered them to be locally abundant; however, he collected no specimens and no specific localities were mentioned." The only existing records for Morton County before this project were two specimens collected in 1926. The most recent verified records in the state were from southwestern Barber and southwestern Sumner counties. The URL for the atlas is: http://webcat.fhsu.edu/ksfauna/herps/.

STUDY AREA, METHODS OF COLLECTING, AND TIMETABLE

The entire study area that was covered by me and the dozens of volunteers that assisted with the project was approximately a 10 mile wide strip along the Kansas and Oklahoma border from the Kansas Turnpike west to the Colorado line. The area I personally worked covered much of that strip from the Kansas Turnpike to western Meade County. Much of the time spent searching for specimens was concentrated in areas where past specimens had either been found or information had been provided to indicate that specimens might be found in new areas.

Between 28 April 2010 and 8 October 2010 I made a total of five trips to the study area and spent a total of 31 days searching for specimens of the Checkered Garter Snake. The length of time spent each day ranged from around four hours to 16 hours depending on a number of variables. Following is a summary of the trips. The miles driven only reflect miles actually driven while in the study area and not the miles required to travel to and from my home near Wakarusa, Kansas to the study area.

28 April – 3 May 2010 (Sumner, Harper, Barber Counties)	690 miles
26 May – 30 May 2010 (Sumner, Harper, Barber, Comanche, Kiowa)	824 miles
24 June – 1 July 2010 (Sumner, Harper, Barber, Comanche, Kiowa, Clark, Kingman, Pratt)	1232 miles
5 August – 8 August 2010 (Sumner, Harper, Barber, Comanche, Kiowa, Clark, Meade)	670 miles
2 October – 8 October 2010 (Sumner, Harper, Barber, Comanche, Clark, Meade)	1095 miles

Methods of collecting consisted of driving roads at all hours of the day and night searching for specimens, walking pastures and cropland areas, turning rocks and other objects of which specimens could be hiding, searching the twilight zones of several caves, and searching the areas around small ponds, lakes, streams, rivers, and watering tanks by windmills. During the study period about 70% of the work time was spent driving roads searching for specimens with the remaining 30% divided among the other methods listed.

I do not have accurate data in regard to the total number of miles driven and hours spent by the dozens of volunteers of all backgrounds and ages either formally or informally searching for specimens of the Checkered Garter Snake. Volunteers included several professional herpetologists, dozens of farmers and ranchers, several public school teachers, and an extremely large number of school age children ranging from elementary to college age. Only data that is directly related to this project that was provided by the volunteers (with the exception of data provided by professional herpetologists) and verified by me is included in this report. Data not actually verified by me is not included in this report with the exception of data provided by professional herpetologists. Credits are provided on the acknowledgement page to those that played such an important part assisting me in so many ways during this project.

SPECIAL METHODS

In an effort to better enlist the assistance of landowners and others that spend considerable time within the study area several plans were implemented. Around 500 4x6 color prints of a Checkered Garter Snake that included information about the project and my contact information were distributed in the study area. Email was sent to hundreds of individuals as well as schools and libraries with information as well as links to a variety of Checkered Garter Snake websites.

Informative programs were given to school age children as well as land owners in both Sumner and Barber Counties to get the word out about the project. Several local newspapers published articles about the project along with my contact information. A reward of $100 was offered for the first documented specimen from Kansas. The $100 reward was paid to Taggart for the first DOR he provided. However, it continued to be offered to any other person or persons that obtained a specimen.

GPS ACCURACY DISCLAIMER

Two GPS units were used during this project. The primary unit was a Garmin nuvi 750 which was mounted on the windshield of a 2008 Chevrolet TrailBlazer. The other was a handheld Garmin GPS 12 which was used when recording locations more than a few hundred feet of where the TrailBlazer was parked.

Both units were checked for accuracy before the start of this project by checking against a known location and elevation. They were checked three different times on different days at the same location. Variations were discovered ranging from about 10’ to 100’ for elevation and from less than 10’ to nearly 150’ from the actual location. Thus, it is important to remember that the data given in the attached data tables may or may not be perfect and may not match exactly with other units or when compared with sites such as Google Earth.

RESULTS

Two new specimens of the Checkered Garter Snake were reported to me during this project. Both were found DOR (Dead on Road) by Travis Taggart of the Sternberg Museum of Natural History, Fort Hays State University in Hays, Kansas. The first, which was reported by Taggart (personal communications) as a large adult female was killed by a vehicle as it moved across a Barber County country road. Taggart reported that there was a wheat field on one side of the road and a grassy waterway bordered by wheat fields on the other side. The location as reported by Taggart was N37.00519°, W099.00035° on 22 May 2010. It was given the collection number of MHP 15000.

The location of the second specimen was given as N37.03963°, W101.58109° and was also DOR. According to Taggart (personal communications), who was accompanied by Charlie Stieben at the time the snake was found, the habitat surrounding the area where the snake was found was irrigated cropland. The snake was found on 11 June 2010 and assigned the collection number of MHP 15001. A digital photo of the DOR Snake taken by Taggart was sent to me via email. The location provided was 1.43 miles west of the Stevens County line.

Several other possible sighting of Checkered Garter Snakes were reported to me during the study period, but to date none have been confirmed. Two incidences of particular interest to me during the study include a large garter snake (species unknown, however no red was visible) that was on the road in Comanche County along the Oklahoma line the morning of 27 May 2010. Both my wife, Suzanne, and I viewed the snake a few feet in front of our vehicle before it slithered off and was lost among grasses at the side of the road. Since the area is very close to where both Taggart found a DOR on 22 May 2010 and also where I have both collected and observed the species during the 1980's, and since over the years other species of garter snakes (Common and Plains) have seldom been found in the area, this is an area that probably should be explored more in the future. The exact location is given under "UNKNOWN SPECIES" on the data sheet which is included with this report.

Part of a shed skin of an unknown snake species was discovered by Suzanne L. Miller near a small stream in Comanche County on 28 May 2010. The skin appeared to be from an adult size garter snake, but was not in good enough condition for a positive identification. It was sent to Joseph T. Collins, at his request, for DNA testing to determine the species. As of this writing I have not received the results. Collins informed me (email communications on 25 January 2011) that the skin had been sent to Curtis J. Schmidt at Fort Hays State University. Schmidt (email communications on 26 January 2011) stated that FHSU did not do the actual testing themselves and that no test had been conducted as of that date. The shed skin was found within a quarter of a mile of where specimens of the Checkered Garter Snake have been observed and collected in the past.

CONCLUSION

The Checkered Garter Snake continues to be one of Kansas' most elusive snakes. However, thanks to the two specimens confirmed by Taggart it appears that there remains a population of this species in Kansas. The Morton County find is most significant since it indicates that the animals observed by Ball in 1992, but not photographed or collected, could have been examples of the Checkered Garter Snake.

Based on past encounters with this species during the late 1970's and 1980's as compared to the number of times it has been encountered over the past ten to twenty years it might appear that it is even less common now than in the past. However, since we know so little about its actual habitat requirements, food preference, and annual activity, that is difficult to determine. Considering the thousands of hours spent searching for this species by individuals (both professional biologists and others) from nearly every part of the study area it is reasonable to conclude that the status of the Checkered Garter Snake in Kansas has not been determined with certainty in the past and cannot be determined with certainty at this time.

RECOMMENDATIONS

Based on the historical data along with the results of this study it is recommended that the Checkered Garter Snake, at the very least, be left on the threatened species list in Kansas.

In regard to future studies, it is recommended that all studies involving the Checkered Garter Snake be combined with other species of interest rather than specifically for the Checkered Snake in order to obtain maximum benefit from field work.

ACKNOWLEDGEMENTS

I was assisted by a very large number of individuals in many different ways as I worked on this project. They ranged from a number of professional biologists assisting to elementary students searching for snakes, and their efforts greatly appreciated.

First, I would like to give special thanks to my wife, Suzanne L. Miller (Topeka and Shawnee County Public Library), for accompanying me on many of the trips to the study area. Her detailed notes as well as her photography skills were extremely valuable in documenting specimens of amphibians, reptiles, and turtles observed and collected.

Ken Brunson (Kansas Department of Wildlife and Parks) provided suggestions and help in the writing of my proposal. He also provided contact information for many of the ranchers and landowners of the Red Hills as well as informing them via email of my project. Ken along with his wife Lee Ann Brunson also assisted with the search, and provided information to both Cassey Pennock and David Bender who spent time searching for Checkered Garter Snakes in southern Kansas.

I wish to thank my good friends Joseph T. Collins and Suzanne L. Collins (Center of North American Herpetology in Lawrence, Kansas) for spending many hours in the field and providing me with much valuable information as well as making suggestions both before and during the project. Field notes from one of their trips to the study are included with this report.

The Carson and Nina Ward family (Quinn Ward, Christian Ward, Cory Ward, Colten Ward, Tylyn Ward, Darin Ward, Quinci Leigthton) allowed access to their land in southern Sumner County during the *34th Annual Survey of the Amphibians, Reptiles, and Turtles of Sumner County, Kansas.* They were also responsible for gaining permission from several other landowners in Sumner County and they joined in the search for the Checkered Garter Snake during the spring, summer, and fall months of 2010.

Gail Feely (Elementary Science Teacher at Caldwell Elementary School, USD 360) provided information in regard to the project to her present and former students as well as other interested persons in Caldwell and the Bluff City, Kansas area.

Many other individuals spent hours searching in Sumner County . They included Kate Ruoff and Jayden Wodke (Seaman USD 345 Topeka, Kansas), Joe LaScala (Kansas City), Kambree York, Shae Lebeda, Cooper Bristol, Larry Rader, Dave Rader, Daniel Barnes, Will Barnes, Tessa Ohnemiller, Hanna Stueve, Marian Ward, Hunter Stueve, Jordan Ohnemiller, Cheryl Warner, Michelle Roth, Jacob Roth, Holly DeLain, Brody Boone, Daniel DeLain (all from Caldwell, Kansas area), Grant Feely (Manchester, Oklahoma), & Issbella Julianne (Leverkusen, Germany). Their hard work in the field along with the Ward Family and Gail Feely and her students were responsible for the 360 individual specimens of amphibians, reptiles, and turtles representing 40 species that were documented in the southern Sumner County area between 28 April and 3 May 2010.

Joyce Helmer (Hardtner Public Library, Hardtner, Kansas) provided information about the project to her summer reading students. She also allowed Suzanne and me to speak to the group about herpetology in general and the search for the Checkered Garter Snake in particular. Her assistance and the assistance of the patrons of the Hardtner Public Library is greatly appreciated.

Owners and ranch hands of the Gates Angus Ranch (Comanche County, Kansas) were most helpful by allowing me to search on their land and also watching for possible specimens of interest as they went about their daily chores. Their interest and participation along with many other ranchers in the Red Hills area of Kansas that helped with the search is greatly appreciated .

The Wilmore Real Estate Company of Wilmore, Kansas provided me with a tremendous amount of information in regard to contact information for landowners and allowed me access to thousands of acres of their land of which I am very grateful.

Stan Roth (Lawrence, Kansas) provided me with information in regard to many of the locations he has researched over the years as well as contact information for several ranchers and landowners in southern Kansas. I thank Stan for sharing this information as will as sharing his expertise as a field biologist.

Other individuals and groups that contributed during the search for Checkered Garter Snakes included Curtis J. Schmidt (Fort State University, Hays, Kansas), Kevin Scott (Derby, Kansas), Darryl Honas and his Middle School Science Students (Medicine Lodge Middle School, USD 254, Medicine Lodge, Kansas), Martin Jelinek (Bluff City, Kansas), The staff at Coldwater City Lake (Comanche County, Kansas), The KDWP Staff at Meade County State Lake (Meade County, Kansas), The staff at the Dalton Brothers Hide Out Museum (Meade, Kansas), & The County Road Department Staff (Morton County, Kansas). Several local newspapers published information about the project along with photos and my contact information. To the publishers of these newspapers I am very grateful.

Last, but certainly not least, I wish to thank Travis W. Taggart (Sternberg Museum of Natural History, Hays, Kansas) for providing me with data on the only two specimens of the Checkered Garter Snake documented during this study.

LITERATURE CITED

Following is a list of material that has been used during past research and the preparation of this document. Not all references relate directly to the Checkered Garter Snake in Kansas, but may indirectly provide information in regard to this rare Kansas reptile.

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APPENDIX (FIELD NOTES / COLLECTION DATA / ETC.)

The following data is in regard to specimens observed between 28 April 2010 and 3 May 2010. Unless other wise specified all were found within a four mile radius of Caldwell, Kansas (N 37.01561° and W 097.36252°) Sumner County. All specimens were verified by Larry L. Miller.

28 April – 1 May 2010 involved the 34th Annual Survey of the Amphibians, Reptiles, and Turtles of Southern Sumner County, Kansas. The following species and numbers were documented during that time frame thanks to the assistance of a number of volunteers. All are Sumner County, Kansas animals.

(Sumner County Survey)

Plains Spadefoot	001 specimen	
Great Plains Toad	007 specimens	
Woodhouse's Toad	002 specimens	
Blanchard's Cricket Frog	016 specimens	
Spotted Chorus Frog	003 specimens	
Tree Frog (Cope's or Gray ?)	003 specimens	
Plains Leopard Frog	009 specimens	
Bullfrog	003 specimens	
Great Plains Narrowmouth Toad	006 specimens	
Common Snapping Turtle	001 specimen	(very young turtle)
Yellow Mud Turtle	002 specimens	
Ornate Box Turtle	006 specimens	(3 AOR & 3 DOR)
Northern Painted Turtle	004 specimens	
Slider	003 specimens	
Smooth Softshell	001 specimen	(dead adult @ Drury)
Eastern Collard Lizard	001 specimen	(south of Caldwell)
Lesser Earless Lizard	012 specimens	(south of Caldwell)

Prairie Lizard	009 specimens
Texas Horned Lizard	002 specimens
Great Plains Skink	001 specimen (N 37.03156, W 097.20481)
Southern Prairie Skink	016 specimens
Six-lined Racerunner	032 specimens
Eastern Racer	006 specimens
Prairie Kingsnake	001 specimen
Speckled Kingsnake	007 specimens
Coachwhip	005 specimens
Gopher Snake (Bullsnake)	003 specimens
Western Rat Snake	004 specimens
Ground Snake	061 specimens
Plains Blackhead Snake	006 specimens
Ringneck Snake	103 specimens
Plainbelly Water Snake	001 specimen
Diamondback Water Snake	002 specimens (one AOR near So Haven)
Northern Water Snake	006 specimens (all near Drury)
Brown Snake	002 specimens
Western Ribbon Snake	002 specimens
Common Garter Snake	004 specimens
Lined Snake	006 specimens
Western Hognose Snake	001 specimen (Bluff Creek near HP CO line)

(2-3 May 2010 Notes)

The following animals were found DOR (except Earless Lizards and Salamanders) in Harper or Barber County on either 2 or 3 May 2010 while scouting for future research areas. Exact data is only given for the Earless Lizards since populations of these animals appear to be declining.

Barred Tiger Salamander	2 May 10	002 specimens (HP CO in well)
Gopher Snake (Bullsnake)	2 May 10	001 specimen (HP CO – DOR)
Western Rat Snake	2 May 10	002 specimen (HP CO – DOR)
Lesser Earless Lizard	2 May 10	003 specimens (HP CO) (N37.02043, W097.48151)
Eastern Racer	3 May 10	002 specimens (BA CO – DOR)
Ornate Box Turtle	3 May 10	002 specimens (BA CO – DOR)

FIELD NOTES BY LARRY L. & SUZANNE L. MILLER TAKEN BETWEEN 26 MAY 2010 AND 8 OCTOBER 2010

Kansas Field Work
2010

State	County	Coordinates	Coordinates	Elevation (ft.)	Time (24hr)	Date	Collectors a Observers
Kansas	Sumner	N37.09356	W097.36234	1158'	17:10	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Sumner	N37.09326	W097.38276	1204'	17:15	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Harper	N37.09155	W097.57483	1331'	17:45	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.01849	W098.58306	1796'	21:32	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.01849	W098.58306	1796'	21:32	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.01849	W098.58306	1796'	21:32	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.01849	W098.58306	1796'	21:32	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.01849	W098.58306	1796'	21:32	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.01849	W098.58306	1796'	21:32	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.61200	W098.57894	1688'	21:52	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.61200	W098.57894	1688'	21:52	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.68040	W098.57.895	1660'	21:58	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.10568	W098.56820	1863'	22:12	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.10568	W098.56820	1863'	22:12	26 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.00106	W098.44429	1532'	09:02	27 May 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.00106	W098.52562	1570'	09:59	27 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.00962	W098.59.962	1859'	10:39	27 May 2010	Larry L. Mil Suzanne L.
Kansas	Comanche	N37.00001	W099.01816	1886'	10:47	27 May 2010	Larry L. Mil Suzanne L.
Kansas	Comanche	N37.00398	W099.03100	1981'	11:00	27 May 2010	Larry L. Mil Suzanne L.
Kansas	Comanche	N37.14482	W099.09906	2084'	12:38	27 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.13.063	W099.09898	2033'	12:40	27 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.09898	W099.09925	1856'	12:47	27 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.11331	W099.08047	apx. 1945'	13:35-14:00	27 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.11331	W099.08047	apx. 1945'	13:35-14:00	27 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.09074	W099.09856	1824'	14:41	27 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.07365	W099.06790	1700'	15:15	27 May 2010	Larry L. Mil Suzanne L.

							Larry L. Mil
Kansas	******	N37.07365	W099.06790	1700'	15:15	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.04632	W099.06790	1731'	16:38	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N36.99909	W099.00123	1843'	17:07	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	Barber	N37.00835	W098.41514	1497'	17:37	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	Barber	N3700485	W098.38521	1375'	17:44	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00830	W098.39457	1396'	19:11	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00831	W098.40337	1440'	19:16	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00839	W098.43099	1524'	19:18	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00840	W098.46683	1544'	19:27	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00428	W098.50592	1509'	19:37	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00111	W098.52510	1562'	19:43	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	Barber	N37.01202	WO98.58000	1799'	20:00	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	Barber	N37.01286	W098.58124	1809'	20:01	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00142	W099.02154	1875'	20:53	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00142	W099.02154	1875'	20:53	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00142	W099.02154	1875'	20:53	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00680	W098.48481	1497'	20:53	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00840	W098.44328	1534'	20:55	27 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00825	W098.40305	1552'	10:14	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37,00843	W098.42291	1454'	10:18	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00842	W098.47232	1593'	10:27	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00842	W098.47232	1593'	10:27	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00842	W098.47232	1593'	10:27	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00103	W098.52571	1582'	11:03	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.01200	WO98.58083	1817'	11:20	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.02127	W099.03819	1863'	11:37	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	Comanche	N37.04469	W099.06712	1760'	12:52	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	Comanche	N37.04354	W099.06.689	1793'	13:09	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	Comanche	N37.04924	W099.08372	1701'	13:50	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.07272	W099.11084	1849'	14:02	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.09853	W099.19134	2008'	14:25	28 May 2010	Suzanne L.

							Larry L. Mil
Kansas	******	N37.12177	W099.09896	2019'	18:40	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.08150	W099.09834	1853'	19:08	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00253	W099.02996	1954'	19:59	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00968	NO DATA	1855'	20:07	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.01202	W098.57934	1812'	20:13	28 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.01202	W098.56086	1616'	20:20	28 May 2010	Suzanne L.
Kansas	Barber	N37.05786	W098.41707	1562'	09:41	29 May 2010	Larry L. Mil
Kansas	Barber	N37.06479	W098.41723	1602'	10:00	29 May 2010	Larry L. Mil
Kansas	Barber	N37.07346	W098.41723	1521'	10:17	29 May 2010	Larry L. Mil
Kansas	Barber	N37.17709	W098.35185	NO DATA	10:45	29 May 2010	Larry L. Mil
Kansas	Barber	N37.04070	W098.38438	1523'	11:21	29 May 2010	Larry L. Mil
Kansas	Barber	N37.05608	W098.50643	1613'	12:41	29 May 2010	Larry L. Mil
							Larry L. Mil
Kansas	******	N37.09121	W098.50972	1623'	13:07	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.08779	W098.51392	1718'	13:14	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.08128	W098.51898	1644'	13:21	29 May 2010	Suzanne L.
					13:45-		Larry L. Mil
Kansas	******	N37.07171	W098.52777	Apx. 1775'	14:10	29 May 2010	Suzanne L.
					13:45-		Larry L. Mil
Kansas	******	N37.07171	W098.52777	Apx. 1775'	14:10	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.01843	W098.58311	1752'	15:18	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.00104	W098.525556	1531'	15:33	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.02130	W098.40599	1426'	18:59	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.03927	W098.41669	1514'	19:10	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.08540	W098.42808	1589'	19:30	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.09129	W098.44.497	1629'	19:42	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.13656	W098.50852	1954'	20:12	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.14285	W098.51701	1959'	20:19	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.14268	W098.54695	1942'	20:28	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.14046	W098.54694	1928'	20:30	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	******	N37.12558	W09855.383	1986'	20:37	29 May 2010	Suzanne L.
					20:38-		Larry L. Mil
Kansas	******	**********	**********	*****	22:30	29 May 2010	Suzanne L.
							Larry L. Mil
Kansas	Barber	N37.01515	W098.25231	1287'	09:26	30 May 2010	Suzanne L.
							Larry L. Mil
Kansas	Barber	N37.02158	W098.22.280	1270'	09:31	30 May 2010	Suzanne L.
							Larry L. Mil
Kansas	Harper	N37.03908	W098.17210	1265'	09:42	30 May 2010	Suzanne L.
Kansas	Harper	N37.03909	W098.15300	1275'	09:54	30 May 2010	Larry L. Mil

							Suzanne L.
Kansas	Harper	N37.03.905	W098.11.997	1270'	10:05	30 May 2010	Larry L. Mil Suzanne L.
Kansas	Harper	N37.03.907	W098.11063	1283'	10:15	30 May 2010	Larry L. Mil Suzanne L.
Kansas	Harper	N37.03501	W098.02285	1350'	10:33	30 May 2010	Larry L. Mil Suzanne L.
Kansas	Harper	N37.03501	W098.02285	1350'	10:33	30 May 2010	Larry L. Mil Suzanne L.
Kansas	Harper	N37.03107	W097.55.437	1268'	10:44	30 May 2010	Larry L. Mil Suzanne L.
Kansas	Harper	N37.03143	W097.51243	1212'	10:51	30 May 2010	Larry L. Mil Suzanne L.
Kansas	Harper	N37.03147	W097.49656	1199'	10:55	30 May 2010	Larry L. Mil Suzanne L.
Kansas	Harper	N37.01.968	W097.48152	1261'	11:20	30 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.01527	W097.48152	1192'	11:27	30 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.03040	W097.48142	1180'	11:37	30 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.03200	W097.42900	1209'	11:45	30 May 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.02018	W097.30383	1143'	12:07	30 May 2010	Larry L. Mil Suzanne L.
Kansas	Sumner	N37.01594	WO97.28546	1160'	12:20	30 May 2010	Larry L. Mil Suzanne L.
Kansas	Sumner	N37.15523	W097.28544	1272'	12:49	30 May 2010	Larry L. Mil Suzanne L.
Kansas	******	**********	**********	*****	*****	**********	********** ******
Kansas	******	**********	**********	*****	*****	**********	********** ******
Kansas	Comanche	N37.09850	W099.18875	1983'	18:45	24 June 2010	Larry L. Mil
Kansas	******	N37.07328	W098.57968	1721'	22:50	24 June 2010	Larry L. Mil
Kansas	Comanche	N37.153329	W099.20737	2046'	00:10	25 June 2010	Larry L. Mil
Kansas	******	N37.14724	W098.54698	1949'	07:50	25 June 2010	Larry L. Mil
Kansas	******	N37.00837	W098.40155	1431'	09:00	25 June 2010	Larry L. Mil
Kansas	Comanche	N37.00099	W098.52585	1566'	10:10	25 June 2010	Larry L. Mil
Kansas	Comanche	N37.00822	W098.56550	1679'	10:18	25 June 2010	Larry L. Mil
Kansas	Comanche	N37.14497	W099.20959	1977'	12:05	25 June 2010	Larry L. Mil
Kansas	******	N37.16826	W098.57447	2058'	20:00	25 June 2010	Larry L. Mil
Kansas	Comanche	N37.15329	W099.20737	2046'	06:05	26 June 2010	Larry L. Mil
Kansas	Comanche	N37.04470	W099.06712	1754'	07:52	26 June 2010	Larry L. Mi Andrea Ro
Kansas	Comanche	N37.15977	W099.19696	*****	19:10	26 June 2010	Larry L. Mil
Kansas	******	N37.13376	W099.15500	1975'	19:40	26 June 2010	Larry L. Mil
Kansas	******	N37.13376	W099.15500	1975'	19:40	26 June 2010	Larry L. Mil
Kansas	******	N37.15365	W099.19693	2095'	10:34	27 June 2010	Larry L. Mil
Kansas	******	N37.09345	W099.16325	2030'	10:50	27 June 2010	Larry L. Mil
Kansas	******	N37.07602	W099.16275	1941'	10:55	27 June 2010	Larry L. Mil
Kansas	******	N37.02892	W099.11061	1879'	11:15	27 June 2010	Larry L. Mil
Kansas	******	N37.00112	W099.02047	1863'	11:41	27 June 2010	Larry L. Mil
Kansas	******	N37.01286	W098.57068	1789'	11:53	27 June 2010	Larry L. Mil

Kansas	******	N37.00132	W098.51760	1480'	12:04	27 June 2010	Larry L. Mil
Kansas	******	N37.00131	W098.51504	1479'	12:06	27 June 2010	Larry L. Mil
Kansas	******	N37.00132	W098.51451	1470'	12:07	27 June 2010	Larry L. Mil
Kansas	Barber	N37.00373	W098.50636	*****	12:15	27 June 2010	Larry L. Mil
Kansas	Barber	N37.06300	W098.50636	*****	13:07	27 June 2010	Larry L. Mil
Kansas	******	N37.14157	W099.03555	2010'	20:18	27 June 2010	Larry L. Mil
Kansas	******	N37.14157	W099.10623	1887'	21:57	27 June 2010	Larry L. Mil
Kansas	******	N37.02948	W099.03.494	1800'	08:00	28 June 2010	Larry L. Mil
Kansas	******	N37.00579	W098.56226	1609'	09:47	28 June 2010	Larry L. Mil
Kansas	******	N37.00202	W098.54818	1571'	09:51	28 June 2010	Larry L. Mil
Kansas	******	N37.00844	W098.42456	1446'	11:46	28 June 2010	Larry L. Mil
Kansas	******	N37.04728	W098.46411	1664'	12:20 - 12:45	28 June 2010	Larry L. Mil
Kansas	******	N37.04728	W098.46411	1664'	12:20 - 12:45	28 June 2010	Larry L. Mil
Kansas	******	N37.04728	W098.46411	1664'	12:20 - 12:45	28 June 2010	Larry L. Mil
Kansas	******	N37.06698	W098.50712	1639'	13:05	28 June 2010	Larry L. Mil
Kansas	******	N37.14728	W098.46263	1882'	15:08	28 June 2010	Larry L. Mil
Kansas	******	N37.15978	W099.17457	2142'	19:45	28 June 2010	Larry L. Mil
Kansas	******	N37.13905	W099.19677	2087'	18:55	29 June 2010	Larry L. Mil
Kansas	Meade	N37.08088	W100.20668	2410'	14:30	29 June 2010	Larry L. Mil
Kansas	Meade	N37.09755	W100.25894	2428'	15:36	29 May 2010	Larry L. Mil
Kansas	Clark	N37.22863	W099.47052	2309'	17:33	29 June 2010	Larry L. Mil
Kansas	Clark	N37.22863	W099.47052	2194'	19:18	29 June 2010	Larry L. Mil
Kansas	******	N37.13379	W099.15524	2047'	09:50	30 June 2010	Larry L. Mil
Kansas	******	N37.13395	W099.12994	2012'	10:02	30 June 2010	Larry L. Mil
Kansas	******	N37.13082	W099.08811	apx. 2045'	10:15 - 11:05	30 June 2010	Larry L. Mil
Kansas	******	N37.13082	W099.08811	apx. 2045'	10:15 - 11:05	30 June 2010	Larry L. Mil
Kansas	******	N37.13082	W099.08811	apx. 2045'	10:15 - 11:05	30 June 2010	Larry L. Mil
Kansas	******	N37.13082	W099.08811	apx. 2045'	10:15 - 11:05	30 June 2010	Larry L. Mil
Kansas	******	N37.13082	W099.08811	apx. 2045'	10:15 - 11:05	30 June 2010	Larry L. Mil
Kansas	******	N37.13082	W099.08811	apx. 2045'	10:15 - 11:05	30 June 2010	Larry L. Mil
Kansas	******	N37.13082	W099.08811	apx. 2045'	10:15 - 11:05	30 June 2010	Larry L. Mil
Kansas	******	N37.09731	WO99.09733	1900'	11:10	30 June 2010	Larry L. Mil
Kansas	******	N37.07284	W099.09031	1813'	11:19	30 June 2010	Larry L. Mil
Kansas	******	N37.06297	W099.10844	1816'	11:28	30 June 2010	Larry L. Mil
Kansas	******	N37.03684	W099.09349	1741'	11:40	30 June 2010	Larry L. Mil
Kansas	******	N37.00681	W098.56490	1632'	12:22	30 June 2010	Larry L. Mil
Kansas	******	N37.01195	W098.50856	1505'	14:37	30 June 2010	Larry L. Mil
Kansas	******	N37.03913	W098.57803	1605'	15:06	30 June 2010	Larry L. Mil
Kansas	******	N37.07810	W099.17366	1961'	20:45	30 June 2010	Larry L. Mil
Kansas	******	N37.00084	W099.19192	2044'	21:16	30 June 2010	Larry L. Mil
Kansas	******	N37.16511	W098.41720	1699,	08:45	01 July 2010	Larry L. Mil

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Kansas	******	**********	**********	*****	*****	**********	******
							**********
Kansas	******	**********	**********	*****	*****	**********	******
Kansas	******	N37.13105	W099.08806	2030'	20:15	05 August 2010	Larry L. Mil
Kansas	******	N37.13105	W099.08806	2030'	20:15	05 August 2010	Larry L. Mil
Kansas	******	N37.01201	W098.57854	1836'	08:28	06 August 2010	Larry L. Mil
Kansas	******	N37.00119	W098.52405	1576'	08:45	06 August 2010	Larry L. Mil
Kansas	******	N37.00479	W09850552	1432'	09:06	06 August 2010	Larry L. Mil
Kansas	******	N37.00836	W098.41102	1434'	09:21	06 August 2010	Larry L. Mil
Kansas	******	N37.04990	W099.09209	1789'	11:27	06 August 2010	Larry L. Mil
Kansas	******	N37.07089	W099.36.654	1950'	19:47	06 August 2010	Larry L. Mil
Kansas	******	N37.07154	W099.36151	1859'	20:01	06 August 2010	Larry L. Mil
Kansas	******	N37.07155	W099.36358	1900'	20:04	06 August 2010	Larry L. Mil
Kansas	Comanche	N37.14496	W099.20966	1981'	10:00	07 August 2010	Larry L. Mil
Kansas	Comanche	N37.14496	W099.20966	1981'	10:00	07 August 2010	Larry L. Mil
Kansas	Comanche	N37.14496	W099.20966	1981'	10:00	07 August 2010	Larry L. Mil
Kansas	Comanche	N37.14496	W099.20966	1981'	10:00	07 August 2010	Larry L. Mil
Kansas	Comanche	N37.02896	W099.09711	1763'	08:35	08 August 2010	Larry L. Mil
Kansas	Comanche	N37.02788	W099.06659	1851'	08:36	08 August 2010	Larry L. Mil
Kansas	Harper	N37.03933	W098.00665	1349'	11:10	08 August 2010	Larry L. Mil
Kansas	Harper	N37.03949	W097.59286	1310'	11:16	08 August 2010	Larry L. Mil
Kansas	******	N37.05187	W097.21327	1170'	13:42	08 August 2010	Larry L. Mil
							**********
Kansas	******	**********	**********	*****	*****	**********	******
							**********
Kansas	******	**********	**********	*****	*****	**********	******
Kansas	Sumner	N37.01600	W097.28534	1065'	15:00 - 15:30	02 October 2010	Larry L. Mil Suzanne L.
Kansas	Sumner	N37.01600	W097.28534	1065'	15:00 - 15:30	02 October 2010	Larry L. Mil Suzanne L.
Kansas	Harper	N37.01596	W097.48151	1234'	10:05	03 October 2010	Larry L. Mil Suzanne L.
Kansas	Harper	N37.02086	W097.48156	1210'	10:30	03 October 2010	Larry L. Mil Suzanne L.
Kansas	Sumner	N37.01600	W097.28534	1077'	12:00 - 12:15	03 October 2010	Larry L. Mil Suzanne L.
Kansas	Sumner	N37.01600	W097.28534	1077'	12:00 - 12:15	03 October 2010	Larry L. Mil Suzanne L.
Kansas	Sumner	N37.01600	W097.28534	1077'	12:00 - 12:15	03 October 2010	Larry L. Mil Suzanne L.
Kansas	Barber	N37.00836	W098.47394	1594'	15:22	03 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.00624	W098.50197	1566'	15:26	03 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.00101	W098.52578	1548'	15:39	03 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.00101	W098.52578	1548'	15:39	03 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.00251	W099.02198	1939'	15:59	03 October 2010	Larry L. Mil Suzanne L.

Kansas	******	N37.04367	W099.10268	1846'	19:10	03 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.09458	W100.25485	2545'	17:48	04 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.03227	W100.23.994	2410'	19:00	04 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.12775	W100.21922	2447'	14:50	05 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.12775	W100.21922	2447'	14:50	05 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.12775	W100.21922	2447'	14:50	05 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.10039	W100.26287	2438'	15:10 - 15:50	05 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.10039	W100.26287	2438'	15:10 - 15:50	05 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.04785	W100.32601	2692'	18:44	05 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.04656	W100.32599	2700'	18:46	05 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.03348	W100.33747	2680'	19:10	05 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.04068	W100.34755	2673'	19:33	05 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.07101	W100.27181	2513'	20:06	05 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.05335	W100.28253	2503'	20:13	05 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.12491	W100.30443	2745'	21:08	05 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.10111	W100.25485	2540'	12:00	06 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.11384	W100.22987	2418'	09:48	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.03997	W100.32670	2657'	10:35 - 10:50	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.03997	W100.32670	2657'	10:35 - 10:50	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.03443	W100.33541	2645'	11:00	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.03348	W100.33.747	2680'	11:15 - 11:30	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.03348	W100.33.747	2680'	11:15 - 11:30	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.03348	W100.33.747	2680'	11:15 - 11:30	07 October 2010	Larry L. Mil Suzanne L.
Kansas	******	N37.08896	W100.21922	2633'	11:59	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.12775	W100.21922	2447'	13:30 - 14:30	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.12775	W100.21922	2447'	13:30 - 14:30	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.12775	W100.21922	2447'	13:30 - 14:30	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.12775	W100.21922	2447'	13:30 - 14:30	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.12775	W100.21922	2447'	13:30 - 14:30	07 October 2010	Larry L. Mil Suzanne L.
Kansas	Meade	N37.12775	W100.21922	2447'	13:30 - 14:30	07 October 2010	Larry L. Mil Suzanne L.
Kansas							
Kansas	******	***********	************	*****	*****	*************	*************

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FIELD NOTES SUPPLIED BY JOSEPH T. COLLINS AND TAKEN BETWEEN 21 MAY 2010 AND 23 MAY 2010

Kansas Field Work

State	County	Wypnt	Coordinates	Coordinates	Elev	Time	Genus	spec
Kansas	Sumner	305	N37.02403	W097.78159	1261 ft	3:04 pm	*Kinosternon*	*flave*
Kansas	Barber	306	N37.22939	W098.67332	1616 ft	10:32 pm	*Anaxyrus*	*woo*
Kansas	Barber	307	N37.22773	W098.67580	1622 ft	10:36 pm	*Anaxyrus*	*woo*
Kansas	Barber	308	N37.21236	W098.68613	1676 ft	11:00 pm	*Pseudacris*	*clark*
Kansas	Barber	309	N37.09261	W098.69511	1579 ft	11:26 pm	*Trachemys*	*scrip*
Kansas	Barber	310	N37.08557	W098.69489	1520 ft	11:29 pm	*Acris*	*blan*
Kansas	Barber	311	N37.05042	W098.69434	1460 ft	11:40 pm	*Pseudacris*	*clark*
Kansas	Barber	311	N37.05042	W098.69434	1460 ft	11:40 pm	*Scotophis*	*obso*
Kansas	Barber	312	N37.04439	W098.69431	1442 ft	11:43 pm	*Anaxyrus*	*woo*
Kansas	Barber	313	N37.03699	W098.69427	1449 ft	11:47 pm	*Spea*	*bom*
Kansas	Barber	314	N37.10959	W098.69547	1610 ft	12:31 am	*Lithobates*	*blair*
Kansas	Barber	315	N37.23320	W098.66193	1811 ft	10:35 am	*Ophisaurus*	*atten*
Kansas	Barber	316	N37.00007	W098.90805	1595 ft	11:16 am	*Thamnophis*	*sirta*
Kansas	Barber	317	N37.05858	W098.96458	1596 ft	11:39 am	*Kinosternon*	*flave*
Kansas	Barber	318	N37.07589	W098.96439	1621 ft	11:44 am	*Coluber*	*cons*
Kansas	Barber	319	N37.01134	W098.94150	1653 ft	12:21 pm	*Masticophis*	*flage*
Kansas	Comanche	320	N36.99958	W099.02887	1858 ft	12:52 pm	*Masticophis*	*flage*
Kansas	Comanche	321	N37.00242	W099.04619	1935 ft	12:56 pm	*Coluber*	*cons*
Kansas	Comanche	322	N37.00459	W099.05151	1927 ft	12:59 pm	*Coluber*	*cons*
Kansas	Comanche	323	N37.02420	W099.05587	1887 ft	1:09 pm	*Coluber*	*cons*
Kansas	Barber	324	N37.01130	W098.80907	1462 ft	4:09 pm	*Thamnophis*	*prox*
Kansas	Barber	325	N37.00887	W098.93085	1626 ft	4:29 pm	*Ophisaurus*	*atten*
Kansas	Barber	326	N37.13419	W098.96172	1714 ft	5:09 pm	*Ophisaurus*	*atten*
Kansas	Barber	326	N37.13419	W098.96172	1714 ft	5:09 pm	*Sistrurus*	*cate*
Kansas	Barber	327	N37.15831	W098.96005	1794 ft	5:15 pm	*Ophisaurus*	*atten*
Kansas	Barber	328	N37.16980	W098.94869	1849 ft	5:19 pm	*Ophisaurus*	*atten*
Kansas	Barber	329	N37.32615	W098.72490	1565 ft	6:31 pm	*Pituophis*	*cate*
Kansas	Barber	330	N37.32696	W098.74353	1569 ft	6:34 pm	*Pituophis*	*cate*
Kansas	Barber	331	N37.36244	W098.87118	1644 ft	6:45 pm	*Pituophis*	*cate*
Kansas	Barber	332	N37.31176	W098.92630	1928 ft	7:07 pm	*Masticophis*	*flage*
Kansas	Barber	333	N37.29415	W098.93140	1964 ft	7:29 pm	*Ophisaurus*	*atten*
Kansas	Barber	334	N37.30784	W098.92493	1923 ft	7:33 pm	*Phrynosoma*	*corn*

Kansas	Barber	335	N37.37394	W098.91808	1696 ft	7:57 pm	*Nerodia*	*eryth*
Kansas	Barber	336	N37.32845	W098.92283	1872 ft	8:15 pm	*Phrynosoma*	*corn*
Kansas	Barber	337	N37.35789	W098.92700	1838 ft	9:30 pm	*Ophisaurus*	*atten*
Kansas	Barber	337	N37.35789	W098.92700	1838 ft	9:30 pm	*Masticophis*	*flage*
Kansas	Barber	338	N37.34865	W098.92507	1775 ft	10:31 pm	*Anaxyrus*	*woo*
Kansas	Barber	339	N37.32788	W098.92308	1875 ft	10:41 pm	*Pantherophis*	*emo*
Kansas	Barber	340	N37.21653	W098.68259	1682 ft	9:54 am	*Ophisaurus*	*atten*
Kansas	Barber	341	N37.15990	W098.69560	1541 ft	10:04 am	*Sistrurus*	*cate*
Kansas	Barber	342	N37.01390	W098.67210	1450 ft	10:37 am	*Kinosternon*	*flave*
Kansas	Barber	343	N37.01411	W098.63641	1414 ft	10:44 am	*Thamnophis*	*sirta*
Kansas	Barber	344	N37.01412	W098.62418	1403 ft	10:46 am	*Scotophis*	*obso*
Kansas	Barber	345	N37.01690	W098.46944	1323 ft	11:25 am	*Scotophis*	*obso*
Kansas	Barber	346	N37.03602	W098.36433	1316 ft	11:41 am	*Thamnophis*	*prox*
Kansas	Barber	347	N37.03608	W098.35613	1319 ft	11:43 am	*Pituophis*	*cate*
Kansas	Harper	348	N37.04328	W098.29234	1261 ft	11:56 am	*Heterodon*	*nasi*
Kansas	Harper	349	N37.06522	W098.27312	1285 ft	12:07 pm	*Nerodia*	*rhom*
Kansas	Harper	350	N37.06521	W098.26073	1282 ft	12:12 pm	*Thamnophis*	*sirta*
Kansas	Harper	351	N37.06517	W098.25021	1273 ft	12:15 pm	*Pituophis*	*cate*
Kansas	Harper	352	N37.06516	W098.22516	1250 ft	12:21 pm	*Thamnophis*	*prox*
Kansas	Harper	353	N37.05164	W097.94627	1323 ft	1:05 pm	*Kinosternon*	*flave*
Kansas	Sumner	354	N37.05471	W097.60075	1181 ft	1:52 pm	*Lithobates*	*cate*
Kansas	Sumner	355	N37.26686	W097.43055	1193 ft	2:22 pm	*Lampropeltis*	*calli*
Kansas	Sumner	356	N37.26073	W097.18121	1185 ft	3:20 pm	*Trachemys*	*scrip*

NOTICE: Much of the research involved with this project was done on public roads and on public lands. However, a substantial amount of searching took place on private lands. It is very important that any follow-up work that is conducted on private land only take place after obtaining permission in advance from the landowners. This is very important for maintaining a good relationship between field biologists and landowners.