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Snakes of "Snake Road"

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Abstract

The LaRue-Pine Hills/Otter Pond Research Natural Area, Shawnee National Forest, Union County, Illinois, is bisected by Forest Road 345, which is closed twice annually, in spring and autumn, for snake migrations. The road is colloquially known as Snake Road. I walked Snake Road and immediate environs irregularly from spring 1996 through autumn 2015 and tallied each snake encounter. During 195 hours, distributed over 67 visits, I recorded 851 observations of 17 snake species. Cottonmouths (63%) dominated snake observations, followed by plain-bellied watersnakes (7.4%), western ribbonsnakes (6.7%), DeKay's brownsnakes (4.1%), and rough greensnakes (2.9%). The snake community appears similar to that observed during herpetofaunal surveys conducted in the 1950s and during 1987–1993.

Introduction

Forest Road 345 is a 4-km long, narrow (approximately 3 m wide), gravel road within the 1137-ha LaRue-Pine Hills/Otter Pond Research Natural Area (LPH), Shawnee National Forest, Union County, Illinois, that is closed annually for eight weeks in spring and eight weeks in autumn (Figure 1). The road is popularly known as Snake Road because the bi-annual closures permit safe passage of snakes as they move between the uplands of Pine Hills and the lowlands associated with LaRue Swamp. Snake Road separates the bluffs of Pine Hills to the east and LaRue Swamp to the west. From the swamp, the cherty Bailey limestone of Pine Hills rises approximately 150 m to its crest on Pine Hills Road. Vertical, chalk-colored bluffs in excess of 45 m tower over the swamp. Pine Hills is named for several small stands of native shortleaf pine (*Pinus echinata*) that occur on steep, west- to south-facing chert-covered slopes above the bluffs. Except for vertical bluffs, the slopes of Pine Hills are forested with a canopy comprised principally of oaks (*Quercus* spp.), hickories (*Carya* spp.), tulip tree (*Liriodendron tulipifera*), white ash (*Fraxinus americana*), American beech (*Fagus grandifolia*), and sugar maple (*Acer saccharum*) (Mohlenbrock, 1959; Mohlenbrock and Voigt, 1965).

LaRue Swamp is an abandoned meander channel of the Big Muddy River, from which it is now separated by an earthen levee. Several springs emerge from the base of the bluffs, continually spilling clear, cool (~13°C) water into the swamp complex (Rossman, 1960). The swamp complex is a mixture of open water, clusters of low-growing herbaceous and woody vegetation, and forest (Mohlenbrock, 1959; Mohlenbrock and Voigt, 1965). Principal tree species include red maple (*Acer rubrum*), sugarberry (*Celtis laevigata*), pumpkin ash (*Fraxinus tomentosa*), green ash (*Fraxinus pennsylvanica*), water locust (*Gleditsia aquatica*), swamp cottonwood (*Populus heterophylla*) and black willow (*Salix niger*); the shrub layer comprises principally buttonbush (*Cephalanthus occidentalis*), swamp rose (*Rosa palustris*), and swamp loosestrife (*Decodon verticillatus*). Mesic forest borders the swampland and consists of oaks, hickories, red maple, box elder (*Acer negundo*), silver maple (*Acer saccharinum*), sugarberry, green ash, sweetgum (*Liquidambar styraciflua*), honey locust (*Gleditsia triacanthos*), and slippery elm (*Ulmus rubra*) (Mohlenbrock, 1959; Mohlenbrock and Voigt, 1965).

Every spring and autumn, snakes migrate between overwintering sites in the bluffs to and from active-season sites in the mesic to wet lowlands. Snakes crossing the road are vulnerable to injury or death resulting from crushing by passing motorized vehicles. To address this problem, the USDA Forest Service implemented a seasonal road closure policy in 1972. Initially, the road was closed to vehicular traffic by means of gates across the south and north ends of the road for three weeks in spring and fall (Ballard, 1994). Road closure periods have been lengthened to eight weeks each spring (15 March – 15 May) and autumn (1 September – 30 October; Figure 1).

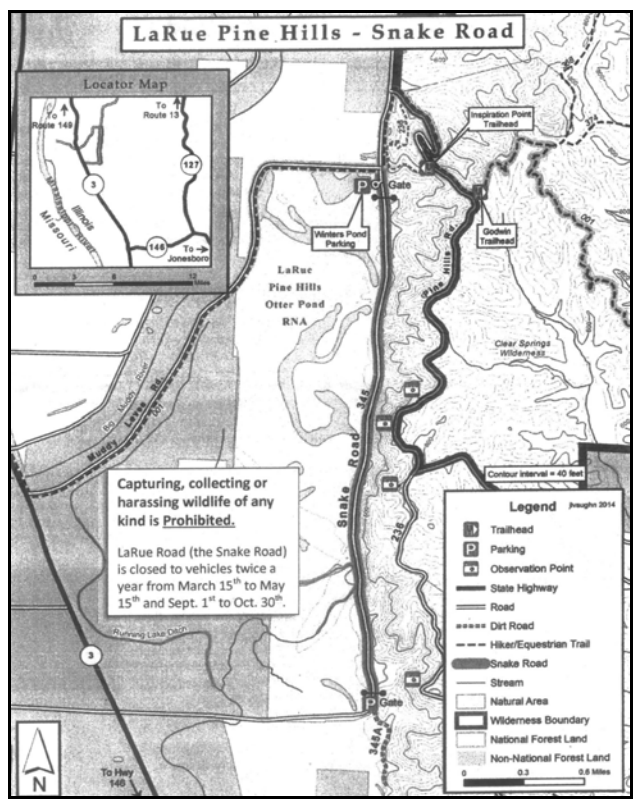

Figure 1. USDA Forest Service map of LaRue Pine Hills – Snake Road.

Table 1. Snakes known from LaRue-Pine Hills/Otter Pond Research Natural Area, Union County, Illinois, and comparison of snake species observed by Rossman (1960), Ballard (1994), and during this study (X = observed).

Snake species		Rossman (1960) ~1954–1958	Ballard (1994) 1987–1993	This study 1996–2015
Scientific name	**Common name**			
Agkistrodon contortrix	Copperhead	X	X	X
Agkistrodon piscivorus	Cottonmouth	X	X	X
Carphophis amoenus	Common wormsnake	X	X	
Cemophora coccinea	Scarletsnake			
Coluber constrictor	North American racer	X	X	X
Crotalus horridus	Timber rattlesnake	X	X	X
Diadophis punctatus	Ring-necked snake	X	X	X
Farancia abacura	Red-bellied mudsnake	X	X	X
Heterodon platirhinos	Eastern hog-nosed snake	X	X	
Lampropeltis nigra	Eastern black kingsnake	X	X	X
Lampropeltis triangulum	Milksnake	X		X
Nerodia cyclopion	Mississippi green watersnake	X	X	X
Nerodia erythrogaster	Plain-bellied watersnake	X	X	X
Nerodia rhombifer	Diamond-backed watersnake	X	X	
Nerodia sipedon	Common watersnake	X	X	
Opheodrys aestivus	Rough greensnake	X	X	X
Pantherophis spiloides	Gray ratsnake	X	X	X
Storeria dekayi	Dekay's brownsnake	X	X	X
Storeria occipitomaculata	Red-bellied snake	X	X	X
Tantilla gracilis	Flat-headed snake			
Thamnophis proximus	Western ribbonsnake	X	X	X
Thamnophis sirtalis	Common gartersnake	X	X	X
Virginia valeriae	Smooth earthsnake	X	X	X
Total species		**21**	**20**	**17**

Two comprehensive amphibian and reptile surveys have focused on the LPH area. Rossman (1960) published the first list of 56 species of amphibians and reptiles known from the area, including 23 species of snakes, 21 of which he or colleagues observed (Table 1). In preparing his manuscript, Rossman examined museum specimens, consulted published literature, conferred with colleagues, and conducted first-hand field surveys. He did not, however, describe his survey methods nor did he provide survey dates. I was able to deduce from reading his paper that he looked beneath cover objects (e.g., rocks on talus slopes) and searched both day and night. He conducted his survey at LPH sometime during his 1954–1958 tenure as an undergraduate student at Southern Illinois University at Carbondale.

Ballard (1994) completed a follow-up survey of the herpetofauna of LPH from 1987 to 1993, conducting the bulk of his survey over 6–10 month periods annually from 1988 to 1990. Ballard (1994) visually surveyed herpetofauna while driving roads (including Snake Road) and walking trails, both day and night. He also trapped at two drift fences. He used standard search and seize methodology such as looking for animals beneath cover objects or active on the surface. Ballard (1994) also accepted and included observations of reliable colleagues. Ballard (1994) recorded 20 species of snakes (Table 1), all but one of the same species observed by Rossman (1960).

I keep field notes in which I record herpetofaunal observations I make while afield. Here, I summarize my field notes pertaining to my observations of snakes at LPH (including Snake Road) from 1996 through 2015. I compare my observations of snakes at LPH with those of Rossman (1960) and Ballard (1994).

Methods

Since spring of 1996, I have made irregular, diurnal (0900–2100), warm-weather (air temperature = 15.0–28.5°C) visits to LPH (principally along and near Snake Road). Between 30 March 1996 and 12 November 2015 (excluding 2004 and 2011 when I did not visit the area), I visited LPH 67 times (Table 2). Most visits (54%) were made from 2010 to 2015. Due to other obligations during spring months, my surveys were skewed (61% of visits and 74.5% of hours) towards autumn (September through November). I visited from 1 to 18 times per year. Some of these visits were brief (e.g., <0.5 hr) and geographically restricted (e.g., limited to the vicinity of Winter's Pond near the north end of Snake Road). During other visits, lasting up to 7.5 hours, I 1) walked the entire length of the closed road, 2) walked from the south gate to the north end of Otter Pond, and 3) explored the base of some nearby bluffs. I once went further afield

Table 2. Monthly snake observations and survey effort at LaRue-Pine Hills/Otter Pond Research Natural Area, Union County, Illinois, from 1996 through 2015.

Snake species	Jan	Feb	Mar	Apr	May	Jun	Sep	Oct	Nov	Total	%
Agkistrodon contortrix							6	1		**7**	**0.8**
Agkistrodon piscivorus	3		2	6	1	1	151	300	72	**536**	**63.0**
Coluber constrictor				1			3	5		**9**	**1.1**
Crotalus horridus							3	2		**5**	**0.6**
Diadophis punctatus				2	2	1	6	5	1	**17**	**2.0**
Farancia abacura				1				1		**2**	**0.2**
Lampropeltis nigra							4	2		**6**	**0.7**
Lampropeltis triangulum							3			**3**	**0.4**
Nerodia cyclopion	1	1					7	6	1	**16**	**1.9**
Nerodia erythrogaster	1		1	7			28	20	6	**63**	**7.4**
Opheodrys aestivus				4			13	7	1	**25**	**2.9**
Pantherophis spiloides				1		1	4	12		**18**	**2.1**
Storeria dekayi							5	16	14	**35**	**4.1**
Storeria occipitomaculata				2	2		1	5	2	**12**	**1.4**
Thamnophis proximus		5	6	11			12	20	3	**57**	**6.7**
Thamnophis sirtalis			5	2			2	1		**10**	**1.2**
Virginia valeriae					3	1		2	5	**11**	**1.3**
Unidentified snakes			1				9	8	1	**19**	**2.2**
Total snakes	**5**	**6**	**15**	**37**	**8**	**4**	**257**	**413**	**106**	**851**	

Number of visits	**2**	**2**	**5**	**11**	**5**	**1**	**19**	**17**	**5**	**67**
Number of hours	**3.5**	**2**	**6.5**	**26**	**7**	**4.5**	**70.5**	**60**	**15**	**195**
Mean snakes per visit	**2.5**	**3.0**	**3.0**	**3.4**	**1.6**	**4.0**	**13.5**	**24.3**	**21.2**	**12.7**
Mean snakes per hour	**1.4**	**3.0**	**2.3**	**1.4**	**1.1**	**0.9**	**3.6**	**6.9**	**7.1**	**4.3**

to the south (south of Otter Pond; 37°31'37" N, 89°26'14"W) and four times to the north (nearly to Forest Service Road 236; 37°35'15.5"N, 89°26'24"W). In total, I spent 195 hours on-site. Although not exclusively for the purpose of finding snakes, I include observations of snakes made during visits to the area having other objectives such as educating young children about nature, observing wildflowers, or learning about the area's natural history, geology, and former human inhabitants during USDA Forest Service-sponsored field trips.

I surveyed snakes at LPH alone or in the company of up to 15 other people (e.g., school groups). Except in rare circumstances where a snake observed by a nearby and knowledgeable companion slipped out of sight before I saw it, I did not record snakes that I did not observe myself. Nor did I count subsequent observations of individual snakes I observed earlier the same day. For example, I did not count snakes observed a second time when re-tracing my path along the road or bluffs. Further, I do not include observations of snakes observed on or near Pine Hills Road, LaRue Road, or the Big Muddy River levee road.

I surveyed for snakes by walking slowly on the road and along the base of bluffs, visually scanning for snakes on the surface. I used binoculars (10 × 40) to facilitate locating and identifying snakes at a distance and a flashlight to illuminate snakes in crevices within or beneath the bluffs. I turned cover objects very infrequently, after which I returned them to their original position (I detected only one snake beneath a cover object). I identified each snake to species when possible and tallied each observation. Some snakes fled before being positively identified or were too deep within crevices to recognize species-specific identifying characteristics. These snakes were tallied as "species unknown."

Results and Discussion

From 1996 through 2015, I tallied 851 observations of 17 species of snakes (Table 2). I observed an average of 13 snakes per visit (range = 0–78), an average of 4 snakes per hour (range = 0–13), and an average of 3 species of snakes per visit (range = 0–10). Cottonmouths comprised 63% of snake observations (Table 2). Cottonmouths typically outnumber observations of other snake species at LPH (Rossman, 1960; Garton et al., 1970; Ballard, 1994), as well as at other hibernacula in southernmost Illinois (Cagle, 1942; Palis, 2010). Plain-bellied watersnakes were the second-most frequently encountered species (7.4%), followed by western ribbonsnakes (6.7%), DeKay's brownsnakes (4.1%), and rough greensnakes (2.9%). Frequency of observations of remaining snake species (15.9%) ranged from 0.2 to 2.1% (Table 2). I could not positively identify 19 snakes (2.2%).

Comparison of my observations with those of Rossman

Table 3. Comparison of frequencies of snake observations at LaRue-Pine Hills/Otter Pond Research Natural Area, Union County, Illinois, by Rossman (1960), Ballard (1994), and during this study. I calculated observation frequencies for 1987–1993 using data provided by Ballard (1994).

Snake species	Rossman (1960) ~1954–1958	Ballard (1994) 1987–1993 (%)	This study 1996–2015 (%)
Agkistrodon contortrix	least abundant of venomous	0.9	0.8
Agkistrodon piscivorus	most abundant snake	69.1	63.0
Carphophis amoenus	more abundant than *S. occipitomaculata*	0.7	none
Coluber constrictor	frequently found on talus	1.4	1.1
Crotalus horridus	not abundant	1.2	0.6
Diadophis punctatus	most abundant small snake	1.7	2.0
Farancia abacura	abundance difficult to assess	0.7	0.2
Heterodon platirhinos	rare	0.3	none
Lampropeltis nigra	not frequently encountered	0.3	0.7
Lampropeltis triangulum	more abundant than *L. nigra*	none	0.4
Nerodia cyclopion	no comment on abundance	6.0	1.9
Nerodia erythrogaster	most abundant "*Natrix*"	6.3	7.4
Nerodia rhombifer	no comment on abundance	0.7	none
Nerodia sipedon	least abundant "*Natrix*"	0.1	none
Opheodrys aestivus	not abundant	0.5	2.9
Pantherophis spiloides	relatively abundant	3.2	2.1
Storeria dekayi	no comment on abundance	0.8	4.1
Storeria occipitomaculata	rare	0.3	1.4
Thamnophis proximus	infrequently seen	3.7	6.7
Thamnophis sirtalis	no comment on abundance	1.3	1.2
Virginia valeriae	relatively abundant	0.8	1.3

(1960) and Ballard (1994) are complicated by several factors, the first of which is that the area surveyed may have differed to varying degrees between my survey and those of the others. Rossman (1960) described the "Pine Hills area" as "three miles of north-south oriented bluffs" and "a large swamp." Whether he was describing the area in general terms or the outline of his survey area is unclear. With the exception of his inclusion of snakes observed on the Big Muddy River levee road and LaRue Road, Ballard (1994) and I surveyed very similar areas.

Methodology also varied among the three surveys. Rossman (1960) said nothing about his field-survey techniques, but I do know that he turned cover objects. Ballard (1994) provided greater detail regarding survey methodology, but not the total number of days or number of hours he spent on-site. Comparisons of my observations with Ballard's (1994) are further confounded by his use of drift fences, a technique that I did not employ. Traps at drift fences can increase herpetofaunal observations relative to visual encounter surveys (Willson and Gibbons, 2009), especially those of snakes (Fitch, 1992; Palis, 2007). Because he drove rather than walked, Ballard's (1994) on-road observations were likely skewed towards large snakes because they are more detectable from a moving vehicle than small snakes (personal observations).

As mentioned above, Rossman (1960) and Ballard (1994) included observations of knowledgeable colleagues in their reports, including snakes observed in the absence of either author. This certainly confounds comparison of datasets, not only numbers of individuals, but also species lists. Ballard (1994), for example, included eastern hog-nosed snakes on his list even though he did not observe any himself. Additionally, instead of numbers of individuals observed, Rossman (1960) assigned undefined qualitative abundance rankings to most, but not all, snake species.

Observer bias also confounds study comparisons because people can differ in their ability to spot snakes (Christy et al., 2010; Rodda, 1993). Time of year, weather, and snake behavior patterns all play significant roles in determining snake activity and thus detectability. Moreover, snake species, due to differences in behavior, size, pattern, or color, differ in detectability. For example, a large, dark cottonmouth lying atop colorful, newly-fallen leaves in autumn is more obvious to the human eye than a diminutive, cryptic earthsnake in the same situation. Despite all the shortcomings described above, I compare—with some trepidation—my results with those of Rossman (1960) and Ballard (1994), especially where our data appear to be remarkably similar or considerably different (Table 3).

I did not observe four species of snakes (common wormsnakes, eastern hog-nosed snakes, diamond-backed watersnakes, and common watersnakes) recorded by Rossman (1960) and Ballard (1994). Wormsnakes, although often abundant, are infrequently active on the surface (Ernst and Ernst, 2003) and are best detected by lifting cover objects in spring when soil

Table 4. Relative frequency (1 = highest, 4 = lowest) of micro-snake sightings at LaRue-Pine Hills/ Otter Pond Research Natural Area, Union County, Illinois, by Rossman (1960), Ballard (1994), and during this study.

Snake species	Rossman (1960) ~1954–1958	Ballard (1994) 1987–1993	This study 1996–2015
Carphophis amoenus	3	3	none
Diadophis punctatus	1	1	2
Storeria dekayi	no comment	2	1
Storeria occipitomaculata	4	4	3
Virginia valeriae	2	2	4

moisture is relatively high (Orr, 2006). Rossman (1960) detected wormsnakes exclusively beneath cover objects and Ballard (1994) observed them only in spring. My lack of wormsnake sightings may be a result of surveying principally in autumn as well as my methodological bias towards detecting surface-active snakes.

Both Rossman (1960) and Ballard (1994) classified eastern hog-nosed snakes as rare at LPH. This species may, indeed, be rare in the lowlands and forested slopes at LPH as it prefers grasslands and open woodlands (LaGory et al. 2009; Plummer and Mills, 2000), habitat types that are now relatively rare at LPH as a result of long-term fire suppression.

Rossman (1960) stated that common watersnakes were "the least abundant *Natrix*" at LPH and Ballard (1994) classified them as rare. Common watersnakes may actually be rare at LPH since they typically inhabit rocky streams in southern Illinois, not swamps (Cagle, 1942). Rossman (1960) did not comment on the abundance of diamond-backed watersnakes, but Ballard (1994) considered them uncommon. I am unable to explain my lack of diamond-backed watersnake sightings at LPH. One possibility is the tendency of diamond-backed watersnakes to hibernate in subterranean burrows near water (Nelson, 1983). If they exhibit this behavior at LPH, diamond-backed watersnakes would not need to cross Snake Road to reach over-wintering sites. Since I spent my time on the road and along bluffs, I would not encounter animals that remain year-round in the lowlands. Because common watersnakes also hibernate in subterranean burrows near water (Olds, 2007), they, too, may be less likely to be encountered on Snake Road or at the bluffs.

Cottonmouths have consistently been the most frequently observed snake at LPH (Table 3; Garton et al., 1970). This suggests two things: 1) that cottonmouths are readily detected by human observers as they move across Snake Road to and from hibernacula and while at hibernacula, and 2) that they have maintained a robust population at LPH since the mid-1950s. The other two viper species (copperheads and timber rattlesnakes) were infrequently encountered during all three surveys (Table 3).

Plain-bellied watersnakes have consistently been the most frequently observed watersnake at LPH (Table 3). Rossman (1960) did not comment on the abundance of Mississippi green watersnakes, but Ballard (1994) classified them as common. I observed one-third as many Mississippi green watersnakes as Ballard (1994). Unfortunately, it is not possible to determine what, if anything, this decrease in Mississippi green watersnake sightings indicates. It may simply be a result of sampling bias. Ballard (1994) focused sampling efforts towards this species to determine its conservation status. Natural population fluctuations, however, cannot be discounted. Keiser (1958), who documented Mississippi green watersnake at LPH for the first time in 1956, noted that the species was not encountered previously despite decades of herpetological collecting. Studies of Florida green watersnakes (*Nerodia floridana*), formerly conspecific with Mississippi green watersnakes, suggest that green watersnake populations may fluctuate more than those of other watersnakes (Willson et al., 2006).

The relative abundance of micro-snakes (common wormsnakes, ring-necked snakes, DeKay's brownsnakes, red-bellied snakes and smooth earthsnakes) appears to have changed little since the 1950s (Table 4). However, the relative frequency of brownsnake and red-bellied snake observations has increased since Ballard's survey (Table 3). In addition, I observed considerably more micro-snakes overall (N = 75) than Ballard (1994; N = 32). Since the vast majority of my micro-snake observations were made as I walked Snake Road, I suggest that sampling bias explains the difference in our number of micro-snake sightings. In my experience, micro-snakes on roads are more readily detected by walking rather than driving. Ballard (1994) drove roads whereas I walked. In addition, brownsnake encounters on roads are often highest in autumn (Gross, 2014), the season I was most frequently on-site.

Rossman (1960) observed milksnakes with greater frequency than black kingsnakes. He recognized the unusual nature of his data remarking that it "is markedly reversed in the adjacent parts of southern Illinois." That milksnakes could readily be detected historically at LPH is evidenced by a one-day collection (15 June 1946 or 1947) of three specimens at "Pine Hills Recreation Area" by Minton and Minton (1948). Ballard (1994) did not encounter milksnakes despite searching beneath cover objects and trapping at drift fences. I did not encounter milksnakes until September 2014, when I found one on Snake Road. I subsequently found two more on the road in September 2015. I observed twice as many black kingsnakes as milksnakes. It is difficult to interpret these conflicting data among surveys. Survey bias, stochasticity, or other factors may have played a role, particularly since both species spend the majority of their time underground or under cover objects (Howze and Smith, 2012; Row and Blouin-Demers 2006).

There has been an upward trend in observations of western ribbonsnakes over time (Table 3). Rossman (1960) noted that western ribbonsnakes were "infrequently seen," whereas they represented almost 4% of Ballard's (1994) snake observations and nearly 7% of mine. A similar increasing trend is apparent

Figure 2. Cottonmouth, *Agkistrodon piscivorus*.

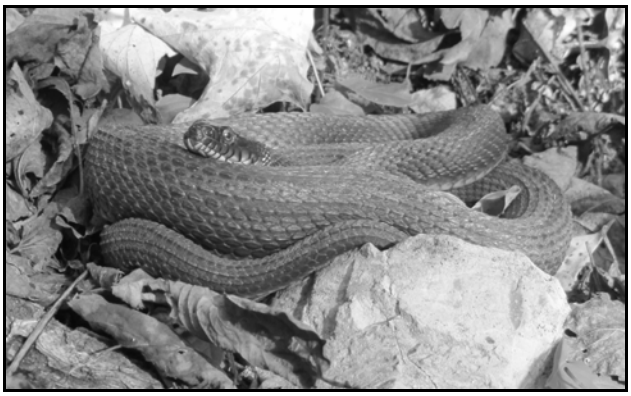

Figure 3. Plain-bellied watersnake, *Nerodia erythrogaster*.

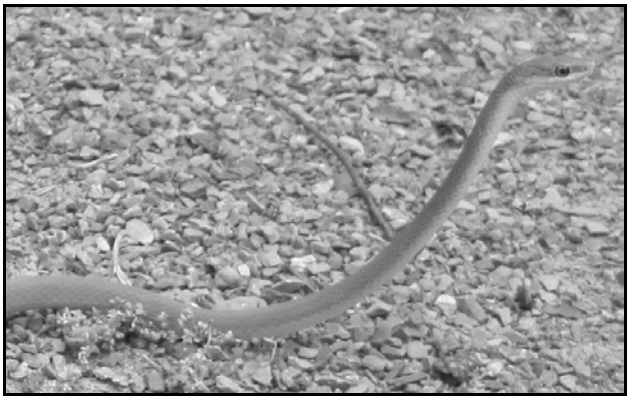

Figure 4. Rough greensnake, *Opheodrys aestivus*.

Figure 5. DeKay's brownsnake, *Storeria dekayi*.

Figure 6. Western ribbonsnake, *Thamnophis proximus*.

Figure 7. Eastern black kingsnake, *Lampropeltis nigra*, constricting a cottonmouth, *Agkistrodon piscivorus*. Note that the cottonmouth is biting the kingsnake.

All photographs taken on or near Snake Road by the author.

Table 5. Number of alive and dead snakes observed on Snake Road at LaRue-Pine Hills/Otter Pond Research Natural Area, Union County, Illinois, in early November (9 November 2013, 10 November 2014, 3 November 2015, 10 November 2015, and 12 November 2015).

Snake species	Alive on road	Dead on road
Agkistrodon piscivorus	2	0
Diadophis punctatus	1	0
Opheodrys aestivus	1	0
Storeria dekayi	7	7
Storeria occipitomaculata	0	2
Thamnophis proximus	0	1
Virginia valeriae	4	1
Total	**15**	**11**

when comparing observations of rough greensnakes over time (Table 3). Whether these trends relate to increasing population sizes in these two species is, of course, unknown. There are no clear temporal trends in observation frequency for the remaining species (North American racers, red-bellied mudsnakes, gray ratsnakes and common gartersnakes).

Two species—scarletsnakes and flat-headed snakes—are notably missing from all three surveys. Both species are historically known from the LaRue-Pine Hills area. One scarletsnake specimen (originally identified as a milksnake) was collected at Wolf Lake (just south of Otter Pond) by Cagle in 1942 (Bennett, 1953). No additional Illinois specimens have been observed since then. This single Illinois scarletsnake record has been problematic for Illinois herpetologists. Smith (1961) accepted the record as valid, but Morris et al. (1983) doubted the legitimacy of the observation. Phillips et al. (1999) considered the scarletsnake's occurrence in Illinois "questionable" and they noted that repeated surveys have failed to yield additional specimens.

Smith and Burger (1950) collected the first flat-headed snake specimen from Pine Hills in June 1949. Although not observed by Rossman (1960), Ballard (1994) or myself, flat-headed snakes were observed at LPH in the early 1960s (Ozment, 1967) and are rumored to still occur at LPH. I have talked with people on Snake Road who have, or know someone who has, seen flat-headed snakes in recent years. Whether flat-headed snakes are truly rare at LPH or just difficult to detect is unknown.

Overall, it appears that the 1996–2015 snake community at LPH is similar to the snake communities described by Rossman (1960) and Ballard (1994). With the exception of gradual mesification of the forest due to fire suppression, and episodic wind or ice damage to the forest canopy, the plant community of the area appears to have remained relatively stable since the latter half of the 1950s (Ballard, 1994). A relatively stable environment could contribute to a relatively stable snake community.

The number of snakes protected by the spring and fall road closures is unknown. However, a previous report (Dyrkacz, 1973) and examination of my snake-on-road observations in early November—when the road is open to vehicular travel—suggest that it may be substantial. Dyrkacz (1973) reported having encountered 19 cottonmouths on Snake Road in two days in April 1972; 10 were alive (52.6%) and 9 were dead (47.4%). I walked the road five times in early November, 2013–2015, and observed 26 snakes on the road, 42% of which were dead (Table 5). The actual kill-rate is unknown since snakes that crossed the road safely before my arrival were not detected. However, the number of dead-on-road snakes observed in early November indicates that the road is re-opened too soon to protect all snakes crossing Snake Road in autumn. It may be advisable, therefore, to extend the road closure date further into November.

If you go . . .

If you decide to visit southern Illinois to walk Snake Road, I offer advice and have a few requests. First, leave your collecting equipment (i.e., snake hook, tongs, bags, etc.) at home. Snakes at LPH are off limits to handling. Walk slowly, especially in the autumn after leaf fall, and examine the roadsides as well as the near and distant road surface. Binoculars are useful to locate and identify snakes at a distance. Watch your step; I have encountered two dead snakes (one neonate plain-bellied watersnake and one adult DeKay's brownsnake) and several newts (*Notophthalmus viridescens*) inadvertently crushed by passersby on the closed road. A flashlight is handy when peering into crevices of the limestone bluffs near the road or if you stay later than planned.

When you drive in, especially if you enter the circle parking area at Winter's Pond, please watch for snakes. I have seen several freshly road-killed snakes at this parking area when Snake Road is closed. I also request that you practice "no trace" herping. That is, if you roll a log or turn a rock please return it as closely as possible to its original position. The microhabitat beneath cover objects takes considerable time to develop and displacing logs or rocks from their original position diminishes the value of the subsurface habitat to herpetofauna and other animal life (Pike et al., 2010). In my experience, turning cover objects is really not necessary to observe most snakes at Snake Road since they are so frequently out in the open during migration. Finally, please keep track of what you see and consider sharing your observations as I have done with mine. Our combined observations may be valuable in understanding the temporal dynamics of the snake community at LPH. Use of occupancy-modeling techniques may be especially helpful for future comparisons of the snake community at LPH (Mazerolle et al., 2007).

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I have enjoyed the company of numerous individuals at Snake Road over the years. Some of these were "fast friends," people I met for the first time and with whom I walked the road. One such individual, long-time CHS member and *Bulletin* editor, Mike Dloogatch, is now a friend with whom I enjoy annual snake walks. My most frequent companions (> 10 walks) have been Forrest Palis and Erin Palmer. I appreciate their companionship and indulging my fascination with snakes. I thank Scott Ballard for sharing his thesis with me; Mike Dloogatch and Steve Sullivan for providing difficult-to-obtain references; my neighbor, Brent Boyd, who drove me to Snake Road in January 2008 to show me some of the winter-active snakes he discovered earlier that day; and Andrew Durso for insightful editorial comments and for sharing literature. I also thank Andrew Durso and Matt Whiles for advice. I dedicate this work to the memory of Douglas Rossman.

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