

Herpetofauna of the Little South Fork Basin (Cumberland River Drainage), Wayne and McCreary Counties, Kentucky¹

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ABSTRACT. Amphibians and reptiles were surveyed along Little South Fork (tributary of the Cumberland River) and other sites within the drainage basin from May-October 1996 and April-May 1997 to determine the distribution and composition of the herpetofauna. Twenty-three species of amphibians and reptiles were captured or observed. Based on published and unpublished accounts and museum records, 41 species of amphibians and reptiles are known from the basin in Wayne and McCreary counties. *Chelydra serpentina* and *Sternotherus odoratus* are known from Little South Fork, and the latter from Wayne County, for the first time. *Graptemys geographica* was distributed throughout the surveyed portion of Little South Fork. Leeches (*Placobdella parasitica*) were found on two *Graptemys geographica* and one *Chelydra serpentina*.

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INTRODUCTION

Several investigators have documented various amphibians and reptiles in Wayne and McCreary counties (Barbour and Ernst 1971; Burt 1933; Collins 1962a, 1962b; Highton 1997; Meade 1991, 1993; Millican Associates, Inc. and others 1982; Monroe 1952; Pisani and Collins 1971; Rundquist and Collins 1974; Stephens 1985a,b). Stephens (1985a) surveyed McCreary County from January 1980 through April 1985 and reported 69 taxa, and some of those records were within the Little South Fork basin in both Wayne and McCreary counties. Also, a few amphibian records possibly from the Little South Fork headwaters or immediate vicinity in Pickett County, Tennessee were reported by Redmond and Scott (1996). Little published information is available on amphibians and reptiles occurring within the Little South Fork basin, which contains a diverse aquatic fauna. The lower 16.7 km of the river from the State Route 92 bridge to 6.6 km above the mouth was designated a Wild River in 1974 (Hankla and others 1992). However, stripmining (siltation and toxic runoff) and possibly other sources of pollution have impacted, and continue to affect, the aquatic fauna (Starnes and Bogan 1982, Anderson and others 1991, personal observation). Between May and October 1996, amphibians and reptiles were collected and observed along approximately 34.3 km of Little South Fork (Cumberland River drainage) and at other miscellaneous sites within the basin to determine the distribution and composition of the herpetofauna. Two collections from April and May 1997 also were included. In addition to searching the literature and making new collections, 24 museums were solicited for locality information, and replies were received from 17 museums.

MATERIALS AND METHODS

Most animals were observed or collected along the mainstem of Little South Fork, a tributary of the Cumberland River. Little South Fork originates in Pickett County,

TN, and flows Northeast through Wayne and McCreary counties, KY (partly constituting the county boundary) in southeastern Kentucky. Nearly all the turtles were collected by hand after observing them from a canoe or underwater. Small aquarium dipnets and seines were used occasionally to capture specimens, and one *Apalone spinifera* was captured with a trotline. Three caves located on the banks of Little South Fork were explored near their mouths; a few springs and seeps also were investigated. Collections and observations were made over portions of 32 days in the field. In addition to retaining voucher specimens, some photographs were taken. Voucher specimens were cataloged in the Southern Illinois University at Carbondale Fluid Vertebrate Collection (SIUC). Leeches were collected from three turtles, preserved for identification, and cataloged in the National Museum of Natural History (USNM), Division of Worms. Detailed collection data were provided to Kentucky Division of Fish and Wildlife Resources (KFW) and SIUC. A GPS unit and topographic maps were used to determine the precise capture sites. Other institutional abbreviations follow Duellman and others (1978) and Leviton and others (1985).

RESULTS AND DISCUSSION

Five turtle, 7 salamander, 2 lizard, 3 frog, and 6 snake species were observed or collected in the study area (Table 1). Stephens (1985a) reported many of the same taxa found during this study plus 1 turtle, 2 salamander, 2 frog and toad, and 4 snake species not collected in 1996 or 1997. Millican Associates, Inc. and others (1982) listed 6 frog and toad species that were not found in the Little South Fork basin in 1996 or 1997, bringing the total reptile and amphibian fauna of the basin to 41 species (Table 1). Most of the species encountered during this study have been found previously in either Wayne or McCreary counties; however, *Sternotherus odoratus* (SIUC R-2974 & R-3099) is a new record for Little South Fork and Wayne County. *Chelydra serpentina* and *Desmognathus fuscus* have been collected in Wayne County only once previously. The most extensive information gathered was on *Graptemys geographica*; twenty-one

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TABLE 1

List of amphibians and reptiles known from the Little South Fork basin (Cumberland River drainage) in Wayne and McCreary counties, Kentucky (data from 1996 survey, two 1997 collections, Stephens (1985a), Millican Associates, Inc. and others (1982), and museum records).

Species Name	Number Observed or Collected in 1996 & 1997 (Number of Sites)	Museum Catalog Numbers and Literature Sources*
AMPHIBIA		
Ambystomatidae		
<i>Ambystoma maculatum</i>	—	S85 (M)
Plethodontidae		
<i>Desmognathus fuscus</i>	2 (1)	SIUC H-5527, H-5528 (W), S85 (M, W)
<i>Desmognathus monticola</i>	—	S85 (W)
<i>Desmognathus</i> sp. indet.	1 (1)	NV (W)
<i>Eurycea cirrigera</i>	16 (7)	SIUC H-5511 (W), H-5556 (W), H-5526 (W), H-5515 (W), H-5538 (M), H-5520 (M), NV (W), S85 (M)
<i>Eurycea longicauda</i>	2 (1)	SIUC H-5532 & NV (W), S85 (M)
<i>Eurycea lucifuga</i>	1 (1)	SIUC H-5537 (M), S85 (M)
<i>Eurycea</i> cf. <i>cirrigera</i>	3 (1)	SIUC H-5529, H-5530, H-5531(W)
<i>Eurycea</i> cf. <i>longicauda</i>	1 (1)	SIUC H-5522 (M)
<i>Hemidactylum scutatum</i>	—	S85 (M)
<i>Plethodon ventralis</i> **	—	USNM 489832 (W), S85 (M)
<i>Plethodon glutinosus</i> §	1 (1)	SIUC H-5523 (M), S85 (M)
<i>Pseudotriton ruber</i>	4 (3)	SIUC H-5519 (W), H-5524, H-5525 (M), H-5516 (M)
Salamandridae		
<i>Notophtalmus viridescens</i> §	4 (2)	SIUC H-5533, H-5534, NV (W), H-5535 (M)
Bufonidae		
<i>Bufo americanus</i> §	—	
<i>Bufo woodhousii fowleri</i> §	—	KU 143675 & 143676 (W), S85 (M)
Hylidae		
<i>Pseudacris crucifer</i> §	—	
<i>Pseudacris brachyphona</i> §	—	
<i>Pseudacris triseriata feriarum</i> §	—	
Ranidae		
<i>Rana catesbeiana</i> §	6 (3)	SIUC H-5557, H-5558, H-5559 (M), H-5536 (M), H-5509 (W), S85 (M)
<i>Rana clamitans</i>	26 (2)	SIUC H-5514 (W), H-5539 (M), S85 (M)
<i>Rana palustris</i>	2 (2)	SIUC H-5513 (W), H-5512 (W), S85 (M)
<i>Rana pipiens</i> §	—	
<i>Rana sylvatica</i>	—	S85 (M)
<i>Rana</i> sp. (<i>clamitans</i> or <i>catesbeiana</i>)	1 (1)	SIUC H-5521 (W/M)
REPTILIA		
Chelydridae		
<i>Chelydra serpentina</i> ‡	1 (1)***	NV (W)
Kinosternidae		
<i>Sternotherus odoratus</i> ‡	2 (2)¶	SIUC R-2974 (W), R-3099 (W)
Emydidae		
<i>Graptemys geographica</i>	21 (19)	SIUC R-3092 (W), R-3097 (W), R-3101 (W), R-3044 (W), R-3091 (W/M), R-3042 (W/M), R-3100 (W/M), R-3052 (W/M), NV (W)[6], NV (W/M)[7], S85 (W/M)
<i>Pseudemys concinna concinna</i>	—	KFW 8002-8003 (M) [Stephens, 1985b]
<i>Terrapene carolina</i> §	5 (5)	SIUC R-3093 (W), R-3040 (W), R-3098 (W), NV (W), NV (M)
Trionychidae		
<i>Apalone spinifera</i>	1 (1)***	SIUC R-3149 [slide] (W), S85 (W/M)†
Phrynosomatidae		
<i>Sceloporus undulatus</i> §	2 (2)	SIUC R-3050 (M), NV (W), KU 143698 (W), USNM 104506-104509 (W), S85 (M)
Scincidae		
<i>Eumeces fasciatus</i>	—	USNM 104510 (W)
<i>Scincella lateralis</i>	3 (1)†	NV (M)[3], S85 (M)

TABLE 1 (CONT.)

Species Name	Number Observed or Collected in 1996 & 1997 (Number of Sites)	Museum Catalog Numbers and Literature Sources*
Colubridae		
<i>Carphophis amoenus</i>	3 (3)	SIUC R-3051 (M), R-3048 (M), R-3049 (M), S85 (M)
<i>Coluber constrictor</i>	1 (1)	SIUC R-3055 (M), Meade, 1993 (W)
<i>Diadophis punctatus</i>	1 (1)†	NV (M), S85 (M)
<i>Lampropeltis getula</i>	—	S85 (M)
<i>Lampropeltis triangulum</i>	—	S85 (M)
<i>Nerodia sipedon</i> §	6 (6)	SIUC R-3039 (W), R-3041 (W/M), NV (W)[2], NV (W/M)[2], S85 (M)
<i>Regina septemvittata</i>	1 (1)	SIUC R-3056 (M), S85 (M)
<i>Thamnophis sirtalis</i>	—	KU 143841 (W), S85 (M)
<i>Virginia valeriae</i>	—	KU 144903 (M), S85 (M)
Viperidae		
<i>Agkistrodon contortrix mokasen</i> §	2 (2)†	NV (W)[2], S85 (W, M)
<i>Crotalus borridus</i>	—	S85 (M)

*Stephens (1985a) deposited some specimens in EUK but did not specify numbers or indicate animals that had been saved; specific information from EUK was not available. Wayne County = (W), McCreary County = (M), Wayne/McCreary county line = (W/M), No Voucher = NV, Stephens (1985a) = S85. Number in brackets (for example [7]) following county designation for NV refers to the number of animals not retained as vouchers (only if more than one not kept).

**Given as *Plethodon dorsalis* in Stephens (1985a); *P. ventralis* Highton, 1997 was described from part of the former range of *P. dorsalis*, including Wayne and McCreary counties, KY.

***Photographed; photo of *C. serpentina* was overexposed.

†First record in Little South Fork.

§Reported in lower Little South Fork basin by Millican Associates, Inc. and others (1982); locations of voucher specimens, if any were kept, and specific locality data are unknown.

†Observed only.

‡Wayne County record.

individuals, including juveniles and adult males and females, were collected or observed over 33 km of Little South Fork. A probable sighting of a large female *G. geographica* was made at the State Route 167 bridge (Wayne County), which is 15 km farther upstream of the most upstream record documented in this study. Stephens (1985a) reported *G. geographica* from several sites in lower Little South Fork, and together with the new records, this species is known to occur throughout most of Little South Fork. The substrate in Little South Fork is primarily sand, gravel, pebble, cobble and bedrock, and many of the turtles were collected over rocky substrates, which Fuselier and Edds (1994) reported as typical for *G. geographica* in Kansas.

Leeches were collected from two *Graptemys geographica* (SIUC R-3101 & R-3052) and one *Chelydra serpentina* (released). One *Placobdella parasitica* was found on each *G. geographica* (leeches, USNM 180477 and 180478), whereas the *C. serpentina* was heavily infested with *P. parasitica*; 14 leeches (USNM 180479) were removed from the plastron of the snapping turtle, but many more remained (estimated 30 leeches total) clustered near the posterior edge of the plastron. Moser (1995) and Watermolen (1996) summarized information on turtle hosts of *Placobdella parasitica*; both *G. geographica* and *C. serpentina* have been reported as hosts previously.

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