A Guide to the Reptiles of Erie County, Pennsylvania

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INTRODUCTION

Erie County in northwestern Pennsylvania, a formerly glaciated region, is unique among the commonwealth’s 67 counties in that it is bordered by Lake Erie on its north side. The county is divided into 21 townships (Figure 1) and contains the city of Erie, the fourth largest city in Pennsylvania. Two physiographic provinces occur in the county, the Central Lowland and the Appalachian Plateaus. The Central Lowland province consists of a narrow band 2–5 miles wide extending along the Lake Erie shoreline. It is primarily flat in the northern portion, but becomes hillier to the south. The Appalachian Plateaus province is relatively smooth with rolling north–south to northwest–southeast oriented ridges. In this province meandering streams have carved deep valleys into the Devonian Shale bedrock (Schooler 1974; Briggs 1999).

The climate in Erie County is significantly influenced by Lake Erie, which has a moderating affect on temperature. In Erie County, temperatures rarely fall below 0º F in winter, and seldom exceed 90º F in summer. On average, January is the coldest month (mean temperature 26.9º F) and July is the warmest (mean temperature 72.1º F) (NOAA 2011). Mean annual precipitation ranges between 40-45 inches; average annual snowfall ranges from 50-60 inches in the southeastern portion of the county, to 80 inches along the lakeshore (Rossi 1999).

A wide variety of habitats can be found in Erie County, including forests, fields, meadows, pastures, swamps, bogs, ponds, streams (permanent and intermittent), and of course the beaches and bluffs along Lake Erie. Presque Isle deserves special mention. Presque Isle is a curved sand spit that developed approximately 4,000–5,000 years ago as rising lake levels
winnowed sand from the late Wisconsinan moraine that extends across Lake Erie from Long Point, Ontario, toward Erie (Delano 1999). Presque Isle contains a wide range of beach, dune and interdune-pond environments that provide habitat for many species of wildlife, including reptiles (Delano 1999).

The continental climate and diverse habitats make Erie County a suitable place for many reptiles, some of which approach their northern range limits in this area. Twenty-three species of reptiles have been documented from Erie County: 13 snakes, nine turtles, and one lizard. Despite unfounded reports of Copperheads and Water Moccasins, there are no dangerously venomous snakes in Erie County.

This guide is meant to serve as an aid to identifying the snakes, lizard, and turtles of Erie County, Pennsylvania. Each species account includes at least one photograph, a brief description of the pattern and body scales, habits, distribution, conservation status and concerns. Also, a section on identifying the shed skins of the county’s snakes is provided. The bibliography at the end of this guide lists all the works cited herein. In addition, for those wishing to learn more about the reptiles of Erie County, and Pennsylvania in general, additional publications are recommended.
Figure 1. Townships of Erie County, Pennsylvania, including the City of Erie. AMY, Amity; CNT, Conneaut; CRD, Concord; CTE, City of Erie; ELK, Elk; FRK, Franklin; FRV, Fairview; GFD, Greenfield; GRD, Girard; GRE, Greene; HBK, Harborcreek; LBF, Le Boeuf; MCK, McKeans; MLK, Millcreek; NES, North East; SUM, Summit; UNI, Union; VEN, Venango; WAY, Wayne; WRF, Waterford; WSH, Washington; WSP, Springfield.
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I thank Scott Bloomstine and Mark Lethaby for sharing in the quest to seek out reptiles in Erie County and abroad. The innumerable hours we spent turning rocks, logs, and man-made debris in search of lizards and snakes, and the miles of nearly impenetrable thickets and swamps we trudged through, as we battled bloodthirsty mosquitoes and annoying deerflies, all in the hope of spying a turtle or two, were not in vain. My gratitude is also extended to Mike Dloogatch for reviewing the text.
SPECIES ACCOUNTS

The common and scientific names used in this guide are those listed in Meshaka and Collins (2009) for snakes, and Collins and Taggart (2009) for lizards and turtles. With a few exceptions, the maximum sizes given in each species description are those in Conant and Collins (1998). The summaries for each species’ activity period, habitats, habits, distribution, and status were acquired from a combination of personal field experience and the literature (Hulse et al. 2001; Gray and Lethaby 2008; Steele et al. 2010). In most cases information pertaining to nesting and hatching was from elsewhere in Pennsylvania or nearby states. The status, daily limits and possession limits are from the Pennsylvania Fish and Boat Commission (2011) summary regulations. The township level maps were produced based on data from Gray and Lethaby (2008) and additional information acquired since the publication of that work. I have tried to incorporate photographs from specimens that were found in Erie County. When this was not possible, I selected photographs of individual(s) from elsewhere in Pennsylvania, preferably from nearby counties such as Crawford and Warren. Any unfamiliar terms should be looked up in the glossary.
**SNAKES**

Snakes, represented by thirteen species, are the most diverse of the reptiles found in Erie County. Snakes can be found by turning rocks, logs, boards, etc. in suitable habitat. Always replace any turned object to its original position. If a snake is found under a heavy cover object, remove the snake, replace the object, and then release the snake and allow it to crawl beneath. This will prevent accidentally crushing the snake. Snakes are delicate animals and should be handled very gently; they should be supported in at least two places, preferably near the head and anterior to the base of the tail. Never pick a snake up by the tail. Common Garter Snakes have been known to autotomize (that is, break off) their tail while twisting and writhing. Some species can and will bite (notably Northern Water Snakes and Eastern Racers) and should be handled carefully. While these species are not venomous, they can cause bleeding punctures and lacerations that could become infected if not thoroughly disinfected and bandaged.

While searching for snakes, you may occasionally come upon a shed snakeskin. Such shed skins can provide an indication that a particular species is present at a site in the absence of an actual snake. On many occasions, a shed snakeskin was the first evidence I had to alert me to a species at a site, and in at least one instance, a shed was the only evidence. If you need help identifying a shed snakeskin, you can spread the skin, scan it, and email the image(s) to: brachystoma@hotmail.com.
Eastern Black Racer, *Coluber constrictor*
Eastern Racer, *Coluber constrictor*

**Description:** Eastern Racers are large snakes that may reach 74 inches in total length (TL). Males and females attain similar total lengths. Adults are a uniform black on the dorsum; the ventral surface may be gray to cream colored. Juvenile Eastern Racers have 48–70 dark brownish blotches on a gray or cream colored background; their ventral surface is spotted. As they mature, the juvenile pattern is lost and the adult pattern attained. Dorsal scales are smooth and occur in 17 rows at midbody. The anal plate is divided.

**Habitats and Habits:** Eastern Racers inhabit fields, meadows, and agricultural areas. In Erie County Eastern Racers may be active from mid-April to late October. During June or Early July up to 31 eggs are laid in a moist site (a mulch pile for instance). The eggs hatch in mid to late August. Eastern Racers feed on a variety of prey, including insects, amphibians, snakes, lizards, birds, and small mammals. Defensive behavior may include an initial attempt to flee. If grabbed, these snakes will bite, and may smear their captor with feces and musk.

**Distribution:** Eastern Racers occur throughout Pennsylvania; in Erie County they are rare and have been reported only from North East and Waterford Townships (Map 1).

**Status and concerns:** In Pennsylvania there is no closed season on Eastern Racers. The daily limit is 1 and possession limit is 1 (Pennsylvania Fish and Boat Commission 2011).
Milk Snake, *Lampropeltis triangulum*

Adult (top); Juvenile (bottom).
Milk Snake, *Lampropeltis triangulum*

**Description:** Milk Snakes may reach a total length of 52 inches, although most individuals are smaller (ca. 36 inches TL). On average, males are slightly larger than females. On the dorsal surface is a series of 30–47 large dark-bordered brown blotches on a grayish ground color. Alternating smaller blotches occur on the sides. The ventral surface contains a black and white checkerboard pattern. Juvenile Milk Snakes are patterned like the adults, only more vividly. Dorsal scales are smooth and occur in 21 (sometimes only 19) rows at midbody. The anal plate is entire.

**Habitats and habits:** Milk Snakes are found in a variety of habitats, including old fields, meadows, forest edges (ecotones), and on rocky slopes. In Erie County Milk Snakes are active from mid-April to October. Up to 14 eggs are laid in mid-June to early July and hatch in August to early September. Juvenile Milk Snakes feed primarily on other snakes and lizards, while adults prey upon small mammals. Milk Snakes may vibrate their tail if disturbed. If picked up, some juvenile specimens may bite; however, most adults tend to be relatively docile.

**Distribution:** Milk Snakes are found throughout Pennsylvania. In Erie County they occur in most of the northern townships, but have not been reported from most southern townships (Map 2).

**Status and concerns:** In Pennsylvania there is no closed season on Milk Snakes. The daily limit is 1 and possession limit is 1 (Pennsylvania Fish and Boat Commission 2011).
Smooth Green Snake, *Liochlorophis vernalis*
Smooth Green Snake, *Liochlorophis vernalis*

**Description:** Smooth Green Snakes may attain a total length of 26 inches. On average, females attain a larger size than males. The dorsal color is bright grass green. The ventral surface is cream colored. Juvenile Smooth Green Snakes are colored like the adults. The dorsal scales are smooth and occur in 15 rows at midbody. The anal plate is divided.

**Habitats and habits:** Smooth Green Snakes are found in old fields, meadows, pastures, and ecotones. In Erie County Smooth Green Snakes are active from early April to late October. A clutch of up to 11 eggs is laid in mid-July or early August and hatch shortly thereafter in mid-August to early September. Smooth Green Snakes feed on spiders, soft-bodied caterpillars, crickets, grasshoppers and other insects. Smooth Green Snakes will attempt to flee; however, if cornered or grasped, they may gape, thrash about and void feces and musk.

**Distribution:** In Pennsylvania Smooth Green Snakes occur throughout most of the commonwealth except the southeastern portion. In Erie County Smooth Green Snakes are sparsely distributed and only found in four townships (Map 3).

**Status and concerns:** In Pennsylvania there is no open season on Smooth Green Snakes. The daily limit is 0 and the possession limit is 0 (Pennsylvania Fish and Boat Commission 2011). Smooth Green Snakes may be declining in Pennsylvania, likely due to habitat destruction and overuse of pesticides (Wilson 2010a).
Midland Rat Snake, *Scotophis spiloides*

Adult (top); Juvenile (bottom).
Midland Rat Snake, *Scotophis spiloides*

**Description:** Midland Rat Snakes can grow larger than snakes of any other species found in Erie County and have been known to attain a total length of 101 inches. On average males attain slightly longer total lengths. Adults are very darkly pigmented dorsally with black. The ventral surface is cream colored with black blotches. The juveniles are grayish with black blotches dorsally. As they age the blotches are gradually obscured by black pigment. Dorsal scales are weekly keeled and occur in 25–27 rows at midbody. The anal plate is divided.

**Habitats and habits:** Midland Rat Snakes are highly arboreal serpents found in forest, woodlands, rocky slopes, and ecotones. In Erie County, Midland Rat Snakes are active from mid-April to mid-October. Clutches of up to 20 eggs are laid in late June or early July, and hatch by the end of September. Midland Rat Snakes feed on small mammals, birds, and birds’ eggs. These snakes are usually docile and reluctant to bite; an occasional specimen might strike and attempt to bite.

**Distribution:** Midland Rat Snakes primarily occur in the western and central regions of Pennsylvania. In the eastern region the species is replaced by Eastern Rat Snakes, *S. alleghaniensis*. In Erie County, Midland Rat Snakes have been documented only from four of the northern townships and Conneaut Township (Map 4).

**Status and concerns:** In Pennsylvania there is no closed season on Midland Rat Snakes. The daily limit is 1 and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2011).
Ringneck Snake, *Diadophis punctatus*

Adult (top); Ringneck Snakes found in a half-hour search of a rocky slope (bottom).
Ringneck Snake, *Diadophis punctatus*

**Description:** Ringneck Snakes may attain a total length of 27 inches. Both males and females attain similar total lengths. Ringneck Snakes are slate gray above with a dark-bordered cream to yellowish collar on the nape. The ventral surface is yellow with black spots. The juveniles are similar in pattern to adults. The dorsal scales are smooth and occur in 15 rows at midbody. The anal plate is divided.

**Habitats and habits:** Ringneck Snakes are normally found under rocks or logs in forests, woodlands, or ecotones, especially those with rocky slopes. In Erie County Ringnecks are active from early April to late September and early October. Up to 10 eggs may be laid under rocks or logs, and usually hatch by September. In the glaciated regions, Ringneck Snakes feed predominantly on plethodontid salamanders, while in unglaciated regions they feed on earthworms. When picked up these snakes will release feces and a horrible smelling musk and smear it on the attacker.

**Distribution:** Ringneck Snakes are widely distributed in Pennsylvania and likely occur in every county. In Erie County this species is found more in the eastern townships than in the west (Map 5).

**Status and concerns:** In Pennsylvania there is no closed season on Ringneck Snakes. The daily limit is 1 and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2010).
Northern Water Snake, *Nerodia sipedon*

Adult (top); Neonates (bottom).
Northern Water Snake, *Nerodia sipedon*

**Description:** Northern Water Snakes are moderate sized snakes, which can attain a total length of 59 inches. On average females attain a larger total length than males. The dorsal pattern consists of dark-bordered brown bands anteriorly, with blotches posteriorly on a light brown ground color. The ventral surface is patterned with brown or reddish crescents. The juveniles are patterned like the adults. The dorsal scales are keeled and occur in 21–23 rows at midbody. The anal plate is divided.

**Habitats and habits:** Northern Water Snakes are associated with the shorelines of streams, marshes, ponds, and lakes. In Erie County Northern Water Snakes are active from late March to October, sometimes as late as mid-November. Litters of up to 66 young are born in mid-August to mid-September. Northern Water Snakes feed predominately on fish (especially small catfish) and frogs. They tend to be aggressive snakes if grabbed, with biting and smearing the attacker with feces and musk a typical reaction.

**Distribution:** Northern Water Snakes are widespread in Pennsylvania. In Erie County the species has been reported from all but 5 townships, and is absent in the city of Erie (Map 6).

**Status and concerns:** In Pennsylvania there is no closed season on Northern Water Snakes. The daily limit is 1 and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2011). Northern Water Snakes are occasionally misidentified as Cottonmouths / Water Moccasins (which do not occur in Pennsylvania) and needlessly killed.
Queen Snake, *Regina septemvittata*
**Queen Snake, *Regina septemvittata***

**Description:** Queen Snakes may attain a total length of up to 36 inches. On average females attain a greater size than males. The dorsal pattern is a uniform brown or olive-brown with a cream-colored lateral stripe on the lowermost two dorsal scale rows. The ventral surface is yellowish cream color with four dark brown stripes. The juveniles are patterned just like the adults. The dorsal scales are keeled and occur in 19 rows at midbody. The anal plate is divided.

**Habitats and habits:** Queen Snakes inhabit rocky streams containing an abundant supply of crayfish. In Erie County Queen Snakes are active from mid-May (possibly early April) to October. Litters of up to 15 young are born in August or September. Adults feed primarily on freshly molted crayfish. Juveniles may feed on dragonfly larvae and small fish in addition to crayfish. Queen Snakes may musk and smear an attacker with feces, but hardly ever attempt to bite.

**Distribution:** Queen Snakes are found in western Pennsylvania and southeastern Pennsylvania. In Erie County the species is distributed sporadically in the western half of the county (Map 7).

**Status and concerns:** In Pennsylvania there is no open season on Queen Snakes. The daily limit is 0 and the possession limit is 0 (Pennsylvania Fish and Boat Commission 2011). Degradation of stream quality such as siltation or acidification may negatively affect crayfish populations and therefore Queen Snake populations. Altering streams by channelization and damming may also be detrimental.
Brown Snake, *Storeria dekayi*
Brown Snake, *Storeria dekayi*

**Description:** Brown Snakes are small snakes that may attain a total length of up to 20 inches. On average females are larger than males. The dorsal surface of the body is brownish, darker on the sides than above, with two parallel rows of dark brown to black spots running the length of the body. The ventral surface may be cream colored, but is occasionally pinkish. The juveniles are similar in appearance to the adults. The dorsal scales are keeled and occur in 17 rows at midbody. The anal plate is divided.

**Habitats and habits:** Brown Snakes are found in a wide variety of habitats including old fields, meadows, forest edges, along streams, and even within urban environments. In Erie County Brown Snakes may be active in all months, but March to October is typical. Litters of up to 31 young are born during late July or August. Brown Snakes feed on slugs, especially *Deroceras* species, and earthworms. Brown Snakes may flatten dorsoventrally, and strike but will not bite. If grabbed, they will musk and smear feces on their attacker.

**Distribution:** Brown Snakes occur in both western and eastern Pennsylvania, but the species is absent throughout most of the central portion of the commonwealth. In Erie County Brown Snakes are widespread and relatively common (Map 8).

**Status and concerns:** In Pennsylvania there is no closed season on Brown Snakes. The daily limit is 1 and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2011).
Redbelly Snake, *Storeria occipitomaculata*
Redbelly Snake, *Storeria occipitomaculata*

**Description:** Redbelly Snakes are small snakes that may attain a total length of up to 16.5 inches. On average females are larger than males. The dorsal surface has a ground color of gray or brownish with two dark brown stripes running the length of the body. The ventral surface may be bright orange or red, and less often black. The juveniles are patterned like the adults. The dorsal scales are keeled and occur in 15 rows at midbody. The anal plate is divided.

**Habitats and habits:** Redbelly Snakes are found in fields, woodland, rocky slopes, and forest edges. In Erie County Redbelly Snakes are active from late March to late October. Litters of up to 18 young are born in late July or August. Redbelly Snakes eat slugs and less often earthworms. When grabbed a Redbelly Snake may flare its lips and rub its head against an attacker while smearing musk and feces.

**Distribution:** Redbelly Snakes are widespread in Pennsylvania and occur in most of the commonwealth except the extreme southwest counties and most of the southeast. In Erie County the species has been found primarily in the eastern townships, as well as Springfield Township (Map 9).

**Status and concerns:** In Pennsylvania there is no closed season on Redbelly Snakes. The daily limit is 1 and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2011).
Shorthead Garter Snake, *Thamnophis brachystoma*

Regular pattern (top); “stripeless” pattern (bottom).
**Shorthead Garter Snake, Thamnophis brachystoma**

**Description:** Shorthead Garter Snakes may attain a total length of up to 22.75 inches. On average females attain larger sizes than males. The dorsal pattern consists of light colored vertebral and lateral stripes on a brownish ground color. The lateral stripes are on dorsal scale rows 2 and 3, and occasionally the lower portion of row 4. The ventral surface is gray to greenish and edged on either side with a row of black spots. The young are patterned like the adults. The dorsal scales are keeled and occur in 17 (occasionally 19) rows at midbody. The anal plate is entire.

**Habitats and habits:** Shorthead Garter Snakes are found in meadows, pastures, old fields, and ecotonal areas. These snakes may be found occasionally in urban environments. In Erie County Shorthead Garter Snakes are active from late March to late October. Approximately 10 young are born in late July or August. In Erie County Shorthead Garter Snakes eat primarily non-native lumbricid earthworms, but may also eat amphibians and small fish if available.

**Distribution:** In Pennsylvania Shorthead Garter Snakes are limited to the northwestern portion of the commonwealth. In Erie County they are more likely to be found in the eastern two-thirds of the county, but also occur in Springfield Township (Map 10).

**Status and concerns:** In Pennsylvania there is no open season on Shorthead Garter Snakes. The daily limit is 0 and the possession limit is 0 (Pennsylvania Fish and Boat Commission 2011). Habitat loss due to human encroachment and plant succession are suspected of causing population declines (Jellen 2010).
Eastern Ribbon Snake, *Thamnophis sauritus*
**Eastern Ribbon Snake, *Thamnophis sauritus***

**Description:** Eastern Ribbon Snakes may attain total lengths of up to 38 inches. On average females are larger than males. The dorsal pattern consists of yellowish vertebral and lateral stripes on a dark brownish to black ground color. The lateral stripes are located on scale rows 3 and 4. The ventral surface is cream colored. The young are patterned like the adults. The dorsal scales are keeled and occur in 19 rows at midbody. The anal plate is entire.

**Habitats and habits:** Eastern Ribbon Snakes are found along streams, lakes, ponds and other wetlands. In Erie County Eastern Ribbon Snakes may be active from late March to late November. Litters of about a dozen young are born in August or early September. Eastern Ribbon Snakes eat frogs and small fish. When approached they will seek to escape, if possible, by swimming on the surface of water. If caught they usually thrash about releasing feces and musk. Eastern Ribbon Snakes rarely bite.

**Distribution:** Eastern Ribbon Snakes are found in eastern Pennsylvania and the westernmost counties, but absent in the mountains and southwest. In Erie County they have a spotty distribution and are known from five townships (Map 11).

**Status and concerns:** In Pennsylvania there is no open season on Eastern Ribbon Snakes. The daily limit is 0 and the possession limit is 0 (Pennsylvania Fish and Boat Commission 2011). Population declines of Eastern Ribbon Snakes in Pennsylvania are suspected, and are likely the result of loss of wetland habitat (Serrao 2010).
Common Garter Snake, *Thamnophis sirtalis*

Regular pattern (top); checkered pattern (bottom).
Common Garter Snake, *Thamnophis sirtalis*

**Description:** Common Garter Snakes may attain total lengths of up to 48 inches. On average females attain a larger size than males. The dorsal pattern is highly variable, but most often there are yellowish vertebral and lateral stripes on a dark brown or black ground color. The lateral stripes are on dorsal scale rows 2 and 3. The ventral surface is gray or cream-colored with rows of black spots along the edges. The young are patterned like the adults. Along the Lake Erie shoreline melanistic specimens may be found. The dorsal scales are keeled and occur in 19 rows at midbody. The anal plate is entire.

**Habitats and habits:** Common Garter Snakes are found in just about any type of habitat; however, old fields, rocky slopes, ecotones, and the edges of wetlands are most common. Common Garter Snakes may also be found in urban environments. In Erie County Common Garter Snakes are typically active from March to October. Up to 85 young (30 is a typical litter size) are born in August or September. Common Garter Snakes will eat amphibians, fish, earthworms, and rarely small birds, mammals, and carrion. A wide assortment of defensive behaviors can be exhibited by Common Garter Snakes including: biting, head hiding, playing dead, smearing feces, releasing musk, and caudal autotomy.

**Distribution:** In Pennsylvania Common Garter Snakes are widespread and likely occur in every county. In Erie County this species has been found in all townships except Elk and Franklin (Map 12).

**Status and concerns:** In Pennsylvania there is no closed season on Common Garter Snakes. The daily limit is 1 and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2011).
Eastern Hognose Snake, *Heterodon platirhinos*
Eastern Hognose Snake, *Heterodon platirhinos*

**Description:** Eastern Hognose Snakes may attain total lengths of up to 45 inches. On average females are larger than males. The ground color is brown to almost black, with 20–30 squarish dorsal blotches and smaller alternating blotches on the sides. The ventral surface is yellowish to cream colored with dark mottling. The young are patterned like the adults. The dorsal scales are keeled and occur in 23–25 rows at midbody. The anal plate is divided.

**Habitats and habits:** Eastern Hognose Snakes are generally found in sandy areas, such as beaches and open woodlands. Seasonal activity in Pennsylvania is from March to October. In late June approximately a dozen eggs are laid, which hatch in late August or early September. Eastern Hognose Snakes feed on toads and frogs. Defensive behavior in these snakes is entertaining. A specimen may initially flatten the anterior portion of its body and make striking motions, followed by rolling over on its back and playing dead, with its mouth open and tongue dangling.

**Distribution:** Eastern Hognose Snakes are distributed sporadically in the southern two-thirds of Pennsylvania. An isolated population documented from Presque Isle State Park in Erie County may have been extirpated (Map 13).

**Status and concerns:** In Pennsylvania there is no open season on Eastern Hognose Snakes. The daily limit is 0 and the possession limit is 0 (Pennsylvania Fish and Boat Commission 2011). Habitat destruction and senseless killing of these snakes, as well as illegal collection may be detrimental to populations of Eastern Hognose Snakes in Pennsylvania (Wilson 2010b).
LIZARDS

Five-lined Skinks (*Plestiodon fasciatus*) are the only lizard species known to occur in Erie County, Pennsylvania. They can be found in much the same way one searches for snakes, by turning logs, boards, rocks, and man-made debris in suitable habitats, such as old fields and the edges of woodlands. If a Five-lined Skink is found, care should be taken when attempting to capture it. These lizards will autotomize the tail rather easily if grasped. It is best to just observe or photograph the specimen without handling it to prevent injury to the tail. Whether the specimen is handled or not, the cover object should be returned to its original position, and the Five-lined Skink allowed to crawl under it. Never place the animal on the ground and turn the cover object on top of it. You may accidentally crush it!
Juvenile Five-lined Skink, *Plestiodon fasciatus*. 
Five-lined Skink, *Plestiodon fasciatus*

Adult male (top); Adult female (bottom).
Five-lined Skink, *Plestiodon fasciatus*

**Description:** Five-lined Skinks may reach total lengths of 8.5 inches. Males are only slightly larger than females. The dorsal pattern consists of five off-white or yellowish longitudinal stripes on a black background. Older males turn brownish tan and the stripes fade. Juveniles resemble the adults, but have a blue tail. Scales are smooth and shiny and occur in 26–30 rows around the center of the body.

**Habitats and habits:** Five-lined Skinks are found in forested clearings, old fields, and ecotones. In Erie County Five Lined Skinks are active from late March to late September. Up to 16 eggs are laid under cover in May or June and hatch in late July or August. Five-lined Skinks feed primarily on spiders and insects. If approached, these lizards will attempt to flee; however, if grasped, they may attempt to bite, or if grasped by the tail, they may autotomize it.

**Distribution:** In Pennsylvania Five-lined Skinks are distributed sporadically in the southern two-thirds of the commonwealth. In Erie County the species is found in only the westernmost two townships: Conneaut and Springfield (Map 14).

**Status and concerns:** In Pennsylvania there is no closed season for Five-lined Skinks. The daily limit is 1, and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2011).
TURTLES

Turtles are almost as diverse as snakes in Erie County, and are represented by nine species. The best way to observe aquatic and semi-aquatic species of turtles is to quietly approach a wetland or other body of water known to harbor them, then scan potential basking sites, such as raised banks or logs, with binoculars or a spotting scope. This is best attempted on cool and sunny days. Wading in shallow water may also occasionally provide an opportunity to observe turtles. Common Snapping Turtles are often found that way. Incidentally, you should never pick up a large Common Snapping Turtle by the tail, as this may cause injury to its spinal column. If you must pick up a Common Snapping Turtle it is best to do so by grasping it by the rear margin of the carapace and keeping the head aimed well away from your body. Once in a while you may come across a turtle on land. In most cases it will be a female either searching for a place to nest, or returning to the water, having already nested.

Because turtles have delayed maturity, low fecundity, and low recruitment their populations generally cannot sustain even a slight increase in mortality. Removal of a turtle from its environment for the purpose of maintaining it as a pet has the same effect on the population as mortality. Therefore, it is recommended that you release any turtles you catch. Take photographs home instead of turtles; that way there will be turtles for your children, and hopefully their children to observe in the future.
Map Turtles, *Graptemys geographica* basking.
Common Snapping Turtle, *Chelydra serpentina*

Adult (top); Juvenile (bottom).
Common Snapping Turtle, *Chelydra serpentina*

**Description:** Common Snapping Turtles are the largest turtles found in Erie County, reaching total carapace (upper shell) lengths of just over 19 inches. Males grow to a much larger size than females. The carapace is brownish to black and has a jagged posterior. The reduced plastron is off-white or yellowish in color and cross-shaped. Common Snapping Turtles have large heads and long necks. The dorsal surface of the tail has saw-toothed keels.

**Habitats and habits:** Common Snapping Turtles are found in all types of aquatic habitats, including ponds, marshes, lakes, creeks and rivers. In Erie County, Common Snapping Turtles may be active from late March through September. In June or early July up to 60 eggs are deposited in a flask-shaped nest dug in the ground. The young hatch from the eggs in August or September. Common Snapping Turtles feed on just about anything, including aquatic invertebrates, fish, amphibians, reptiles, birds, mammals, carrion, and plants, such as skunk cabbage. On land, Common Snapping Turtles can be very aggressive if cornered. If they feel threatened, they will repeatedly strike. Never pick up an adult Common Snapping Turtle by its tail; you could injure its vertebrae.

**Distribution:** In Pennsylvania Common Snapping Turtles are widespread and found throughout the commonwealth. In Erie County, they have been found in 13 of 21 townships, primarily in the western portion of the county (Map 15).

**Status and concerns:** In Pennsylvania Common Snapping Turtles may be harvested with a fishing license from July 1 through October 31. The daily limit is 15 and the possession limit is 30 (Pennsylvania Fish and Boat
Commission 2011). Long-lived species like Common Snapping Turtles, with low reproductive rates may not be able to recover from increased predation (or mortality due to automobiles) or hunting and trapping pressures. It is foreseeable that a small, localized population could easily be wiped out if 15 or more adults were harvested.

![Common Snapping Turtle habitat.](image)
Common Snapping Turtle, *Chelydra serpentina*. 
Common Musk Turtle, *Sternotherus odoratus*
Common Musk Turtle, *Sternotherus odoratus*

**Description**: Common Musk Turtles are small and may attain a carapace length of just over 5 inches. Males and females attain similar sizes. The carapace is high-domed and a dark green to brown color. The plastron is reduced and is yellowish or brown. The limbs, neck and head are dark gray to black. Usually each side of the head has two yellow to cream-colored stripes that converge near the snout.

**Habitats and habits**: Common Musk Turtles are highly aquatic and rarely seen out of water. They are found in marshes, ponds, lakes, and sluggish streams. In Erie County, Common Musk Turtles may be active from late April to October. In late May or June, up to 7 eggs are laid under a log or surface debris. The young hatch in August or September. Common Musk Turtles feed opportunistically on worms, snails, clams, crayfish, fish or carrion. If they feel threatened, these turtles may withdraw into their shells, or gape their mouth and attempt to bite.

**Distribution**: In Pennsylvania Common Musk Turtles are found in the extreme northwestern and southeastern portions of the state. In Erie County, the species is only known from Presque Isle State Park (Map 16).

**Status and concerns**: In Pennsylvania there is no closed season on Common Musk Turtles. The daily limit is 1 and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2011).
Spotted Turtle, *Clemmys guttata*
Spotted Turtle, *Clemmys guttata*

**Description:** Spotted Turtles are small turtles that may attain carapace lengths of up to 5 inches. On average females are larger than males. The carapace is black with numerous yellow spots. Adult males have a darkly pigmented lower jaw, while females have a yellowish or orange lower jaw.

**Habitats and habits:** Spotted Turtles prefer the shallow water of marshes, bogs, swamps, and ponds. Sometimes they may be found in small, shallow streams. In Erie County Spotted Turtles may be active from late February to July, and then from September to early October. In June, up to 5 eggs are laid in a flask-shaped nest dug in well-drained soil. In mid-August, approximately 75 days after being laid the eggs hatch. Spotted Turtles feed on aquatic invertebrates, tadpoles, and even carrion. Spotted Turtles will withdraw into their shells if picked up; very rarely will they attempt to bite.

**Distribution:** In Pennsylvania Spotted Turtles are distributed sporadically in the eastern and western portions of the commonwealth and absent from the mountainous regions. In Erie County, the species is known from Millcreek and Springfield Townships (Map 17).

**Status and concerns:** In Pennsylvania there is no open season on Spotted Turtles. The daily limit is 0 and the possession limit is 0 (Pennsylvania Fish and Boat Commission 2011). Habitat destruction, isolation and fragmentation, as well as natural succession may cause local declines. Illegal collection can also be detrimental to Spotted Turtle populations.
Northern Painted Turtle, *Chrysemys picta*

Adult (top); Juvenile (bottom).
Northern Painted Turtle, *Chrysemys picta*

**Description:** Northern Painted Turtles are small turtles that may attain a carapace length of just over 7.5 inches. On average females are larger than males. The carapace is dark olive-green to black with red concentric patterns on the marginal scutes. The plastron is yellowish with a dark central area. The neck contains yellow stripes.

**Habitats and habits:** Northern Painted Turtles are an aquatic species, found in ponds, marshes, swamps, and lakes. In Erie County, Northern Painted Turtles may be active in all months, although March through October is typical. In June or early July, up to 6 eggs are laid in a flask-shaped nest. Young may over-winter in the nest and emerge the following April or May. Northern Painted Turtles feed on aquatic insects, worms, crayfish, algae, and other plants. If threatened, Northern Painted Turtles will try to swim away. However, if caught, they usually withdraw into their shells, and occasionally will attempt to bite.

**Distribution:** In Pennsylvania Northern Painted Turtles occur throughout the commonwealth. In Erie County, they are common and have been found in most townships (Map 18).

**Status and concerns:** In Pennsylvania there is no closed season on Northern Painted Turtles. The daily limit is 1 and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2011).
Blanding’s Turtle, *Emydoidea blandingii*
Blanding’s Turtle, *Emydoidea blandingii*

**Description:** Blanding’s Turtles are moderate-sized turtles and may attain a maximum carapace length of up to 10.75 inches. Males and females attain similar sizes. The carapace is black with a plethora of yellow spots. The plastron is yellowish with black blotches toward the outer edges of the scutes. The neck of this turtle is long and the throat is bright yellow.

**Habitats and habits:** Blanding’s Turtles are found in marshes, shallow ponds, and slow-moving streams. In Erie County, Blanding’s Turtles may be active from April through September. Egg-laying likely occurs in June. Up to 16 eggs may be laid in a nest dug in sandy loam soil. The young hatch in about 90 days. Blanding’s Turtles feed on clams, snails, crayfish, and aquatic insects. Plants may be eaten incidentally. When they feel threatened, Blanding’s Turtles withdraw into their shells.

**Distribution:** In Pennsylvania Blanding’s Turtles are historically known from Crawford and Erie Counties. In Erie County, this species is found only at Presque Isle State Park (Map 19).

**Status and concerns:** In Pennsylvania there is no open season on Blanding’s Turtle, which are listed as a Candidate Species (Pennsylvania Fish and Boat Commission 2011). Throughout this species’ range, habitat destruction, alteration, and fragmentation are all threats to Blanding’s Turtles. A lack of site-specific life history data, such as preferred habitat and home range, and information regarding this species’ distribution in Pennsylvania may hinder efforts to conserving Blanding’s Turtles within the commonwealth (Hulse 2010).
Wood Turtle, *Glyptemys insculpta*
Wood Turtle, *Glyptemys insculpta*

**Description:** Wood Turtles are moderate-sized turtles and may attain a maximum carapace length of just over 9 inches. On average, males are larger than females. The brownish carapace has a sculptured appearance. The plastron is yellowish cream colored with dark blotches towards the outer margin of each scute. The limbs and neck are pigmented with orange.

**Habitats and habits:** Wood Turtles are semi-aquatic, and may be found either in streams or on land in adjacent fields and forests. Although no data exist for Erie County, elsewhere in Pennsylvania Wood Turtles are active from late March to early October. Nesting may occur in June with up to 13 eggs being laid in a nest dug in sandy soil. Wood Turtles eat berries, especially strawberries, mushrooms, earthworms, and rarely carrion. When they feel threatened, Wood Turtles withdraw into their shells.

**Distribution:** In Pennsylvania Wood Turtles are common and found in most counties. In Erie County, Wood Turtles are historically known only from Presque Isle State Park, but may be present in the French Creek Watershed in eastern Erie County (Map 20).

**Status and concerns:** In Pennsylvania there is no open season on Wood Turtles. The daily limit is 0 and the possession limit is 0 (Pennsylvania Fish and Boat Commission 2011). As with other turtles, habitat alteration, destruction and fragmentation may have negative effects on populations of Wood Turtles. Illegal collection is also a problem facing this colorful turtle.
Common Map Turtle, *Graptemys geographica*
Common Map Turtle, *Graptemys geographica*

**Description:** Common Map Turtles are moderate-sized turtles that may attain a maximum carapace length of 10.75 inches. Females attain a significantly larger size than males. The keeled carapace is greenish-brown with an irregular pattern of curving lines that resemble a topographic map. On the limbs, neck and head are numerous yellow to green lines.

**Habitats and habits:** Common Map Turtles are aquatic and usually found in rivers and lakes. In Erie County Common Map Turtles are active from March to November. In June or early July up to 16 eggs are laid in a nest dug in sandy soil. The young hatch approximately 60 days later, although in some instances the young may overwinter in the nest. Common Map Turtles feed on snails, mollusks (including Zebra Mussels), and occasionally fish as carrion. These turtles are excellent swimmers, and if threatened will take to the water to escape being captured.

**Distribution:** In Pennsylvania Common Map Turtles are found along the Lake Erie shoreline, and along the Susquehanna and Delaware Rivers and their tributaries. In Erie County, Common Map Turtles are found at Presque Isle State Park and along the Lake Erie shoreline, as well as in Edinboro Lake, where they are believed to have been introduced (Map 21).

**Status and concerns:** In Pennsylvania there is no closed season on Common Map Turtles. The daily limit is 1 and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2011). In Erie County, road mortality of females, as well as injuries sustained from boat traffic may prove detrimental to Common Map Turtle populations.
Eastern Box Turtle, *Terrapene carolina*
Eastern Box Turtle, *Terrapene carolina*

**Description:** Eastern Box Turtles are small turtles that may attain a maximum carapace length of just under 8 inches; most are around 5 inches. Males and females attain similar sizes. The high domed carapace is brownish with lighter yellow irregular lines, spots, and blotches. The limbs, neck and head may be yellow blotched as well. The plastron is yellowish-brown to black and is hinged, allowing it to be closed tight after the head, limbs and tail are withdrawn.

**Habitats and habits:** Eastern Box Turtles are terrestrial and found in deciduous forests, old fields, and ecotones. Although data are lacking for this species in Erie County, they may be active from April to late October. In June or early July up to 8 eggs are laid in a nest dug in loamy or sandy soil. The young hatch in late August or September. Eastern Box Turtles feed on a variety of food items, including snails, slugs, earthworms, mushrooms, and berries. Carrion is also occasionally eaten. An Eastern Box Turtle’s best defense is withdrawing into its shell.

**Distribution:** In Pennsylvania Eastern Box Turtles are found in the southern two-thirds, and northwestern portion of the commonwealth. In Erie County this species has been reported from Fairview and Millcreek Townships. All recent sightings of Eastern Box Turtles in Erie County have been of formerly captive animals. Eastern Box Turtles may have been extirpated from the county (Map 22).

**Status and concerns:** In Pennsylvania there is no open season on Eastern Box Turtles. The daily limit is 0 and the possession limit is 0 (Pennsylvania Fish and Boat Commission 2011). In Pennsylvania habitat loss is the greatest threat to Eastern Box Turtle populations (Wilson 2010c).
Spiny Softshell, *Apalone spinifera*
**Spiny Softshell, *Apalone spinifera***

**Description:** Spiny Softshells are large turtles that may attain a maximum carapace length of 17 inches. Females attain a greater size than do males. The carapace is soft and leathery, in males there are numerous eye-like spots, whereas in females there are olive or brownish blotches resembling camouflage. The plastron is also soft and leathery, but cream-colored.

**Habitats and habits:** Spiny Softshells inhabit creeks and lakes with a sandy or muddy substrate. In Erie County Spiny Softshells may be active from April to August, and possibly through September. In June or July, up to 32 eggs are laid in a nest dug in a muddy or sandy bank in proximity to water. The young may hatch in August or September. Spiny Softshells feed on crayfish, aquatic insects and their larvae, and fish. Spiny Softshells must be handled carefully as they can inflict a very painful and potentially serious bite.

**Distribution:** In Pennsylvania Spiny Softshells are known from along the Lake Erie shoreline and the Allegheny and Ohio Rivers and their tributaries. In Erie County they are found at Presque Isle State Park and Conneaut and French Creeks and their tributaries (Map 23).

**Status and concerns:** In Pennsylvania there is no closed season on Spiny Softshells. The daily limit is 1 and the possession limit is 1 (Pennsylvania Fish and Boat Commission 2011).
NONNATIVE SPECIES

Several nonnative reptile species have been observed in Erie County, Pennsylvania (Table 1). Most of these, however, are unlikely to establish reproducing populations here. The main factor in preventing the establishment of nonnative species in Erie County is the harsh winters and associated freezing temperatures that are experienced in northwestern Pennsylvania. The only exception are Red-eared Sliders (*Trachemys scripta elegans*), which are known to persist at Presque Isle State Park year after year. It is not known, however, whether they are reproducing there—hopefully not.

Green Anole.
### TABLE 1
Nonnative reptiles known to have been found in Erie County, Pennsylvania.

<table>
<thead>
<tr>
<th>Reptile</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three-toed Box Turtle</td>
<td><em>Terrapene carolina</em> triunguis</td>
</tr>
<tr>
<td>Ornate Box Turtle</td>
<td><em>T. ornata</em></td>
</tr>
<tr>
<td>Red-eared Slider</td>
<td><em>Trachemys scripta elegans</em></td>
</tr>
<tr>
<td>False Map Turtle</td>
<td><em>Graptemys pseudogeographica</em></td>
</tr>
<tr>
<td>Green Anole</td>
<td><em>Anolis carolinensis</em></td>
</tr>
<tr>
<td>Brahminy Blind</td>
<td><em>Rhamphotyphlops</em></td>
</tr>
<tr>
<td>Snake</td>
<td><em>braminus</em></td>
</tr>
<tr>
<td>Mole Kingsnake</td>
<td><em>Lampropeltis calligaster</em></td>
</tr>
<tr>
<td>Indian Python</td>
<td><em>Python molurus</em></td>
</tr>
<tr>
<td>American Alligator</td>
<td><em>Alligator mississippiensis</em></td>
</tr>
<tr>
<td>Spectacled Caiman</td>
<td><em>Caiman crocodilus</em></td>
</tr>
</tbody>
</table>

Red-eared Slider.
IDENTIFYING SHED SNAKESKINS

The following key is meant to aid those wishing to identify shed snakeskins found in Erie County, Pennsylvania. In some instances, you may only get one chance to visit a site and a shed snakeskin may be the only evidence of reptiles you find. Properly identifying the shed snakeskin with the following key will allow you to confidently conclude that a particular species is present at the site. Furthermore, shed snakeskins can be used as voucher material, thus preventing the need to sacrifice an actual snake, and can provide high-quality DNA for molecular studies (see Fontanella et al. 2008).

Before you begin you will need to cut the shed snakeskin so that it can be opened up and better examined. In some cases you may need to soak the shed snakeskin in alcohol to soften it and then spread it and tease out any parts that are adhered together. Once the shed snakeskin is opened up and lies flat you can blot it dry with paper towels and begin the identification process. (For those wishing a more thorough treatment of the subject of preparing, identifying and storing shed snakeskins, see Gray [2005]). A magnifying lens or stereo microscope may be needed to see some characters, such as the notched scale lobes of some species. In order to better observe the faint pattern on some shed snakeskins it may be necessary to place them on a white background.

To use the key, start at the first pair of statements (called a couplet) and read both; then choose the one that best fits the shed snakeskin in hand. At the end of the statement you choose will be either a number or a species name. If a number, go to that couplet and repeat the process until the statement that best fits ends with a species name. For example, if the shed
snakeskin you have in hand has keeled scales, you’d choose statement 1B and thus go to couplet 5 and read both 5A and B. At couplet 5, if the shed snakeskin you have has scales that have an apical notch, you’d choose 5A and go to couplet 6. Next you would read both 6A and B, and if your shed snakeskin has 21 dorsal scale rows and a pattern of bands and blotches, you have a shed skin from a Northern Water Snake.
KEY TO THE SHED SKINS OF ERIE COUNTY SNAKES

1A. Dorsal scales smooth (Figure 2)……2
1B. Dorsal scales keeled (Figure 3)……5

2A. Dorsal scale rows 15……3
2B. Dorsal scale rows 17–21……4

3A. A light collar on the neck area (Figure 4), single apical pits on scales distinct……Ringneck Snake, *Diadophis punctatus*
3B. No light collar on the neck area, single apical pits not visible, or if they are, not distinct (Figure 5)……Smooth Green Snake, *Liochlorophis vernalis*

Figure 2 (left). Smooth scales. Figure 3 (right) Keeled scales.
4A. Dorsal scale rows 17, shed skin uniformly pigmented (Figure 6)

......Eastern Racer, *Coluber constrictor*

4B. Dorsal scale rows 19–21, a faint blotched pattern on shed skin (Figure 7)

......Milk Snake, *Lampropeltis triangulum*
5A. Dorsal scales with an apical notch (Figure 8)……6
5B. Dorsal scales lack an apical notch (Figure 9)……15

Figure 8 (left). Scale with apical notch. Figure 9 (right). Apical notch lacking.

6A. Dorsal scale rows 19 or less, pattern is striped (Figure 10) or uniform……7
6B. Dorsal scale rows 21 or more, pattern of bands or blotches (Figure 11)
……Northern Water Snake, Nerodia sipedon

Figure 10 (left). Striped pattern. Figure 11 (right). Northern Water Snake.
7A. Dorsal pattern on shed skin uniform……8
7B. Dorsal pattern consists of a light vertebral stripe and or lateral stripes……11

8A. Dorsal scale rows 15, dorsal scale rows 5 and 6 darker than the others (Figure 12)……**Redbelly Snake, Storeria occipitomaculata**
8B. Dorsal scale rows 17–19, pattern not as above……9

![Image](image1.png)  ![Image](image2.png)

Figure 12 (left). Redbelly Snake. Figure 13 (right). Brown Snake.

9A. Dorsal scale rows 17, dorsal scale rows 6 and 7 darker than the others (Figure 13)……**Brown Snake, Storeria dekayi**
9B. Dorsal scale rows 19, pattern not as above……10

10A. Dorsal scale rows 1 and 2 unpigmented and lighter than those above; if present, anal plate divided (Figure 14)……**Queen Snake, Regina septemvittata**
10B. Dorsal scale rows 1–3 unpigmented and lighter than those above; if present, anal plate entire (Figure 15)……Common Garter Snake, 

*Thamnophis sirtalis*

Figure 15. Common Garter Snake: pattern (left); entire anal plate, AP (right).
11A. Vertebral stripe present……12
11B. Vertebral stripe absent……14

Figure 16 (left) Vertebral stripe of Shorthead Garter Snake.

12A. Dorsal scale rows 17, vertebral stripe dark bordered (Figure 16) ……Shorthead Garter Snake, *Thamnophis brachystoma*
12B. Dorsal scale rows 19, vertebral stripe not dark bordered (Figure 15) ……13

13A. Striped pattern faint, light lateral stripes on dorsal scale rows 2 and 3 (Figure 17)……Common Garter Snake, *Thamnophis sirtalis*
13B. Striped pattern vivid, light lateral stripes on dorsal scale rows 3 and 4 (Figure 18)……Eastern Ribbon Snake, *Thamnophis sauritus*

Figure 17 (left). Common Garter Snake.  Figure 18 (right) Eastern Ribbon Snake.
14A. Dorsal scale rows 1 and 2 unpigmented and lighter than those above; if present, anal plate divided (Figure 14)……**Queen Snake, Regina septemvittata**

14B. Dorsal scale rows 1–3 unpigmented and lighter than those above; if present, anal plate entire (Figure 15)……**Common Garter Snake, Thamnophis sirtalis**

15A. Shed skin is heavily pigmented, pattern uniform with median 7–9 scale rows darker than those below, dark pigment extends onto ventrals (Figure 19)……**Midland Rat Snake, Scotophis spiloides**

15B. Shed skin is lightly pigmented, with squarish alternating dark blotches, pigmentation doesn’t extend onto ventrals (Figure 20)……**Eastern Hognose Snake, Heterodon platirhinos**

Figure 19 (left). Midland Rat Snake. Figure 20 (right). Eastern Hognose Snake.
GLOSSARY

**Anal plate:** The scale that covers the opening to the cloaca; may be entire or divided.

**Apical lobe:** The posterior-most portion (the apex) of a dorsal scale; it usually overlaps with the subsequent scale. Apical lobes may contain a notch or not, in which case they are rounded.

**Apical notch:** A median indentation located on the scale lobe.

**Apical pit(s):** Apical pits are slight depressions on the posterior-most portion (the apex) of some scales. The may be single or double (paired).

**Autotomize:** Autotomy means to self cut. Autotomy is the ability of some snakes and lizards to “drop” portions of their body, such as the tail. When the tail is the appendage broken off it is called caudal autotomy.

**Carapace:** The upper shell of a turtle.

**Dorsal:** Refers to the top of the body.

**Dorsal scales:** Are the scales located on the top and sides of the body above the ventrals.

**Dorsal scale rows:** Dorsal scales occur in rows which are counted obliquely from one side to the other.
Ecotone: An ecotone is the area at the edge of two habitats, such as an old field and forest.

Keeled scales: Dorsal or lateral scales with a raised medial longitudinal ridge (known as a keel); the keel may be weak (shallow) or strong (prominent).

Lateral: Refers to the side of the body.

Lateral stripe: A light or dark colored stripe that extends along the length of the body on the side.

Nape: The back of the neck.

Pattern: The arrangement of pigmentation observed in actual specimens or, in the case of snakes, their shed skins. Pattern may be uniform, banded, blotched, or striped.

Plastron: The lower (or bottom) shell of a turtle.

Scute: A scute is an enlarged scale, such as those that make up a turtle shell.

Smooth scales: Scales lacking a keel.

Ventral: Refers to the bottom of an animal.
**Ventral(s):** In snakes, the large, widened scales of the belly.

**Vertebral scale row:** The median row of scales on the dorsal surface of the body.

**Vertebral stripe:** A longitudinal, light or dark stripe centered on the vertebral scale row.

Shorthead Garter Snake, *Thamnophis brachystoma.*
MAPS


Map 7. Queen Snake.


Map 9. Redbelly Snake.

Map 10. Shorthead Garter Snake.

Map 11. Eastern Ribbon Snake.


Map 15. Common Snapping Turtle.  

Map 17. Spotted Turtle.  
Map 18. Northern Painted Turtle.

Map 20. Wood Turtle.


Map 22. Eastern Box Turtle.

Map 23. Spiny Softshell.
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Brian S. Gray with Midland Rat Snake, *Scotophis spiloides*.
Back cover image of a melanistic Common Garter Snake, *Thamnophis sirtalis* by Brian S. Gray