

**Howard County
Maryland Amphibian and Reptile Atlas (MARA) 2010-2014**

The species included in the following table have either been found in Howard County or are possible in this county in the judgment of experienced biologists. For more complete information, consult published references and websites described in the MARA handbook. To report sightings, to volunteer, or for further information contact Howard County Coordinator Sue Muller at smuller@howardcountymd.gov

Columns as follows: **Name** - common name, (asterisk follows if the species requires verification), Latin name, MARA-accepted common name(s) in parentheses, folk names in quotation marks, required abbreviation for reporting, size in inches (may not include all minimums and maximums); **Habitat & Habits**; **Identification**; **Breeding**; **Misc.** (Miscellaneous).

Refer to <http://www.howardbirds.org>, under Herps-MARA for Glossary, Verification Forms, atlas block maps, etc.

The following abbreviations are used.

M – male ad. – adult
F – female w/ - with
Y – Young

Name	Habitat & Habits	Identification	Breeding	Misc.
<i>Turtles - a shell covers at least part of the dorsal and ventral surfaces</i>				
Eastern Musk Turtle <i>Stemotherus odoratus</i> (Stinkpot; Common Musk Turtle) EMST 3 – 5 3/8"	Still or slow-moving mud-bottomed streams, rivers, ponds, lakes. Highly aquatic; patrols bottom. Occasionally leaves water to bask on fallen logs (a good climber); sometimes basks in shallows amid floating vegetation w/ center of carapace exposed. Chiefly nocturnal; also dawn and dusk.	Two light stripes on side of head; barbs on chin and throat; high-domed, smooth, olive-brown to black carapace, often algae-covered. Plastron small w/ a single hinge & 11 scutes. M – thick tail w/ blunt horny nail; large areas of skin between plastral scutes. F – tail small w/ or w/out nail.	1–9 eggs, off-white w/ stark white band; in shallow nest on land under rotting logs/stumps or in leaf litter; incubate 9–12 wks; hatch late summer-early fall. Y – carapace rough gray to black w/ middorsal keel (lost in ad.)	M. is aggressive and bites readily (has long neck). When disturbed emits foul-smelling yellowish fluid.
Eastern Mud Turtle <i>Kinostemon subrubrum subrubrum</i> EMDT 3 – 4 1/8"	Shallow, soft-bottomed slow-moving to still waterways w/ abundant vegetation; ditches, wet meadows Basks little; quite terrestrial (more so than E. Musk); frequently crosses roads; most often seen after rains in humid sites, esp. mornings & evenings. Coastal Plain species that has moved into e. Piedmont Omnivorous	Carapace olive to dark brown, smooth, patternless; no enlarged marginal scutes. Plastron yellow to brown, double-hinged w/ 11 scutes. M – blunt spine at end of tail; two patches of scales inside hind legs.	Active April–Oct. Eggs: 1-8 (mostly 2-4), elliptical, 1", white, hard-shelled, pinkish or bluish-white in a 3–5" cavity dug in vegetative debris or sandy loam; hatch late Aug–Sept.. Y – carapace rough, dark w/ middorsal keel, plastron yellow to red usually dark in center; bright spot on each marginal scute.	Some may bite.
Eastern Box Turtle <i>Terrapene carolina carolina</i> EBTU 4 – 8½"	Moist forests, wet meadows, pastures, floodplains. Essentially terrestrial. Often seen early in day after rains. Omnivorous	High domed carapace; pattern & color highly variable; four toes on each hind foot. Plastron has a hinge. Can close shell completely. M – plastron often concave at rear; often red eyes. F – plastron flat or slightly convex; eyes generally brown. Y – shell flatter w/ spot of yellow on each large scute.	Nests May–July. Eggs: 3-8 elliptical, thin-shelled, in a flask-shaped cavity.	

<p>Spotted Turtle <i>Clemmys guttata</i></p> <p>SPTU 3½ - 5"</p>	<p>Shallow wetlands, marshy meadows, beaver ponds, wet pastures, small woodland streams. Needs soft substrate w/ some aquatic vegetation.</p> <p>Basks early. Spends considerable time on land. Chiefly diurnal, few active in rainy weather. Omnivorous scavenger.</p>	<p>Carapace smooth, unkeeled, black w/ yellow spots (may be lacking in old, check neck & head for spots). Plastron: creamy yellow w/ large black border blotches. Skin on lower surface of limbs orange to red. M – tan chin, brown eyes. F – yellow chin, orange eyes. Y – blue/black; most w/ a yellow spot on each scute (or none) or spots on head.</p>	<p>Most active March – May. Egg-laying mostly June. Eggs: 1–8 (typ. 5) elliptical, white, flexible shells; hatch late Aug–Sept.</p>	<p>Rarely bite but may void bladder if held. Spotted carapace may imitate floating duckweed.</p>
<p>Wood Turtle <i>Glyptemys insculpta</i> "Redleg" or 'Ole Redlegs "</p> <p>WOTU 5 – 9"</p>	<p>Hard sand or gravel-bottomed cool streams in deciduous woods, red maple swamps, marshy meadows. Although usually near water, highly terrestrial, esp. summer Primarily diurnal. Fall Line west. Omnivorous.</p>	<p>Carapace scutes sculpted into irregular pyramids; brown, keeled, rough; notched upper jaw; skin of neck & forelegs reddish-orange. Plastron yellow w/ black marginal blotches on each scute; no hinge. M – concave plastron, thick tail. Y – broad, low, unkeeled brownish carapace; no orange on neck or legs; tail almost as long as carapace.</p>	<p>Active March–Nov. Eggs laid May-June in well-drained, moist sand or substrate free of rocks, thick vegetation, but not subject to flooding. 6–8, elliptical, flexible-shelled; hatch Aug–early Oct.</p>	<p>Excellent climbers. Most are inoffensive when captured; some large males may bite & scratch, others void bladders.</p>
<p>Eastern Painted Turtle <i>Chrysemys picta picta</i></p> <p>PATU 4 – 9 7/8"</p>	<p>Slow-moving shallow streams, rivers, lakes, oxbows, w/ soft muddy bottoms & vegetation or half-submerged logs. Basks frequently. Partly terrestrial. Diurnal. Omnivorous (Y. carnivorous).</p>	<p>Carapace olive to black, smooth, flattened, keelless; red bars or crescents on marginal scutes; notched upper jaw; yellow & red stripes on neck, legs, & tail; two bright yellow spots on each side of head. Plastron unpatterned yellow. In Eastern: vertebral & costal scutes aligned; alternate in Midland. M – elongated foreclaws; long thick tail.</p>	<p>Most active March -Oct. Lays eggs May–July; 2– 10, elliptical; incubate 10-11 weeks.</p>	<p>In basking turtles look for red & black shell margins. When handled, either passive or bites, kicks, scratches & voids bladder.</p>
<p>Red-eared Slider <i>Trachemys scripta elegans</i></p> <p>RESL 5 – 11 3/8"</p>	<p>Quiet waters w/ muddy bottoms & profusion of vegetation; rivers, streams, swamps, ponds; frequently travels overland between aquatic habitats. Basks (sometimes stacked) for significant part of day on logs projecting above water or on vegetation, seldom seen on banks. Primarily diurnal. Omnivorous (Y- carnivorous)</p>	<p>In this subspecies, broad reddish blotch behind eye is unique; melanism most developed in old males. Undersurface of chin rounded; v-shaped notch at front of upper jaw (not flanked by cusps). M – long curved claws; long thick tail. Y – carapace green, low keel; plastron has dark eyelike spots.</p>	<p>Most active April – Nov Nest unshaded in a non-muddy site (may be some distance from water). Lays eggs June-July; 4–23 oval; hatch in 2–2½ mo.; late summer/early fall.</p>	<p>Can be aggressive & will often bite, scratch, or void bladder when handled.</p>
<p>Eastern Snapping Turtle <i>Chelydra serpentina serpentina</i> (Common Snapping Turtle; Snapping Turtle)</p> <p>ESTU 8 – 18½"</p>	<p>Almost any body of freshwater; likes soft mud or sandy bottoms & abundant vegetation or submerged brush & tree trunks. Highly aquatic, but makes long overland treks Rarely basks. Some activity at all hours. Omnivorous.</p>	<p>Large head w/ powerful jaws (upper somewhat hooked), two barbels on chin, neck relatively long, powerful legs, webbed toes, heavy claws. Carapace black to light tan; each scute may have radiating lines; long tail saw-toothed on top. Small cross-shaped plastron (yellow, tan or unpatterned). Y – round, black/dark brown w/ light spot on each marginal scute, rough carapace w/ three longitudinal keels; tail as long as carapace or longer; plastron black w/ light mottling.</p>	<p>Emerges from hibernation in April. Nest site can be some distance from water in open area w/ loose sandy/soil. Peak egg-laying mid-May to mid-June; spherical, white, tough, 20-40 typ.; incubation 9-18 wks., hatch mid-Aug–early Oct.</p>	<p>Ugly in appearance & disposition; usually inoffensive under water; aggressive on land.</p>
<p>Northern Red-bellied Cooter <i>Pseudemys rubiventris</i> (Northern Red-bellied Turtle; Redbelly Turtle) [possible in Howard Co.]</p> <p>NRBC 10 - 15¾"</p>	<p>Relatively deep water bodies, moderate gradient rivers, floodplain marshes, oxbows w/ soft bottoms & many basking sites as well as aquatic plants. Much basking; vary. Mostly diurnal. Coastal Plain w/ movement into e. Piedmont Mostly herbivorous (Y – omnivorous).</p>	<p>Large w/ brown/black carapace w/ red or yellow markings on marginal scutes; prominent notch at tip of upper jaw w/ toothlike cusp on each side; arrow-shaped stripe atop head between eyes to snout; dark red plastron w/dark pattern. M – dark irregular markings, elongated straight claws on front feet. Y – light green, rounded, keeled carapace; reddish plastron w/ dark markings along seams</p>	<p>Active mid-April–mid-Nov Nests in sandy clay or loam, in full sun near water's edge. Peak egg-laying June. Eggs elliptical, white, smooth; usually 10–12; hatch in late summer after 70-80 days incubation.</p>	<p>May attempt to bite or voids bladder; most retreat into shells.</p>

Lizards – 1) covered with scales; 2) claws on toes

<p>Eastern Fence Lizard <i>Sceloporus undulatus</i></p> <p>EFLI 3½ - 7½"</p>	<p>Open woodlands, rock outcrops & boulders, rotting logs & stumps, rail fences, pine woods, dry sunny locations. Strongly arboreal; found on walls as well as in trees.</p> <p>Diurnal Chiefly insectivorous.</p>	<p>Dark band along rear of thigh; rough raised scales. M – nearly unicolored above; blue throat patch surrounded by black; brown, blue patches on belly. F – wavy dark lines or bands across back; gray; white belly; yellow to red at base of tail; small amount of pale blue at side of belly & throat. Y - patterned like F but darker.</p>	<p>3–13 eggs laid June–Sept.</p>	<p>When surprised on ground, usually dashes up tree, climbs a short distance and moves to back; if chased will move higher and again to opposite side of tree.</p>
<p>Common Five-lined Skink* <i>Plestiodon fasciatus</i></p> <p>CFLS 5 – 8 1/16"</p>	<p>Cutover woodlots (especially pine) w/ rotting stumps & logs, humid woods w/ thick leaf litter, rock piles, boulders, sawdust piles, habitat usually damp, frequently near streams.</p> <p>Terrestrial; occasionally climbs a short distance up trees or stumps to bask.</p> <p>Diurnal. Mostly insectivorous.</p>	<p>Highly variable—age & sex. Black or brown w five broad, light, five lengthwise stripes which fade w/ age; tail blue to gray. Can only definitely be separated from Broad-headed Skink by counting labial scales; C. Five-lined has four, Broad-headed five. M – when breeding has red-orange head. Y – bright striping & bright blue tail.</p>	<p>Female tends 4–15 eggs; laid May–June; hatch June–Aug.</p>	<p>HOWCO not known to have Broad-headed Skink which is v. similar. For all skinks, photograph both side of head & undersurface of base of tail.</p>

Snakes – 1) lack limbs; 2) scaled and elongated bodies

<p>Northern Watersnake <i>Nerodia sipedon sipedon</i> (Common Watersnake)</p> <p>NOWA 22 – 53"</p>	<p>Most aquatic situations—quiet waters preferred: lakes, ponds, marshes, ditches rivers; forages in shoreline vegetation.</p> <p>Basks frequently on rocks or stumps.</p> <p>Active day & night.</p>	<p>Reddish-brown, gray, or near black w/ dark crossbands on neck & alternating dark pattern on back & sides (back markings wider than spaces between them); scales keeled, 21–25 rows; no dark line from eye to corner of mouth. Belly white—some have half moons; anal plate divided. Y – more vividly colored black on gray/light brown.</p>	<p>Live-bearing, 15–30; Aug–Oct. Hatchlings: 7½- 9"</p>	<p>Normally flees; if cornered, strikes. Bite not poisonous, but anticoagulant causes profuse bleeding</p>
<p>Queen Snake <i>Regina septemvittata</i> (Queensnake) "willow snake"</p> <p>QUSN 16 – 36¾"</p>	<p>Streams and small rivers w/ rocky margins & bottoms; clear sandy-bottomed creeks; sphagnum bogs.</p> <p>Highly aquatic, ex. swimmer; not a frequent basker; found either swimming or under rocks, vegetation, or debris at water's edge.</p> <p>Active day & night. Chiefly Piedmont west. Feeds almost entirely on soft-bodied crayfish.</p>	<p>Tan thru olives, browns & black; scales keeled. Yellow stripe along entire lower side of body. Belly yellow w/ four distinct stripes (possibly faded); anal plate divided.</p>	<p>Live-bearing, 5–23; July–early Sept. Hatchlings: 7½- 9"</p>	<p>.</p>
<p>Eastern Smooth Earthsnake <i>Virginia valeriae valeriae</i> (Smooth Earth Snake)</p> <p>ESEA 7 – 13¾"</p>	<p>Damp deciduous forest; moist rocky wooded hillsides; seldom seen above ground except after heavy rains. Coastal Plain & e. Piedmont. Earthworms and soft-bodied insects.</p>	<p>No distinctive markings. Shades of brown/gray w/ scattered or four rows of dark flecks; six upper lip scales; scales smooth; 15 rows on neck & midbody; loreal scale horizontal & touching eye. Belly unmarked grayish-white or yellowish; anal plate divided.</p>	<p>Live-bearing, 2-14; Aug–Sept. Hatchlings: 3¼- 4½"; w/ out markings.</p>	<p>Often found w/ No. Ring-necked Snake, E. Wormsnake, & No. Rough Greensnake.</p>
<p>Northern Brownsnake <i>Storeria dekayi dekayi</i> (DeKay's Brownsnake, DeKay's Snake)</p> <p>NOBR 10 – 20¾"</p>	<p>Moist upland woods to lowland marshes & margins of swamps & ponds, vacant lots, gardens beneath flat rocks, logs, trash; usually near water or damp places.</p> <p>Diurnal, but nocturnal in warm weather. Earthworms, slugs, & snails.</p>	<p>Small; shades of brown or gray; two parallel rows of small dark spots bordering an indistinct wide light back stripe; dark diagonal streak on back of head behind eye; scales keeled; 15-17 rows. Belly pale yellow, brown or pinkish w/ small black dots at edges; anal plate divided Y – yellowish collar, dark body.</p>	<p>Live-bearing, 3–31; June– September Hatchlings: 3¼- 4½"</p>	<p></p>

<p>Northern Red-bellied Snake <i>Storeria occipitomaculata occipitomaculata</i> (Redbelly Snake)</p> <p>NRBS 8 – 16"</p>	<p>Hilly woodland; in or near sphagnum bogs; under lumber & debris around houses. Earthworms, slugs, insects.</p>	<p>Small; plain gray, brown or black; single broad light stripe (or four faint stripes) down back; three light spots on nape; light mark on upper labial bordered below by black; scales keeled; 15 rows. Belly red, orange, or yellow; anal plate divided.</p>	<p>Live-bearing, 1–21; June–September Hatchlings 2¾- 4"; darker than adults. Two years to mature.</p>	<p>When startled, curls up its upper lip on both sides. Sometimes w/ E. Smooth Earthsnake.</p>
<p>Eastern Gartersnake <i>Thamnophis sirtalis sirtalis</i></p> <p>EAGA 18 – 51 5/8"</p>	<p>Near water; wet meadows, marshes, woodlands, moist hillsides, streamsides, parks, drainage ditches. Able to tolerate cold weather. Diurnal. Frogs, toads, salamanders, earthworms.</p>	<p>Extremely variable in color & pattern; either stripes or spots may predominate (some lack stripes); lateral stripes confined to rows 2 & 3; usually a double row of black spots between stripes; scales keeled. Belly greenish or yellowish w two rows of indistinct black spots; anal plate single.</p>	<p>Live-bearing; 7– 5; late June–Aug. Hatchlings: 5–9"; mature in two years.</p>	<p>Ill-tempered when first captured; may bite or expel musk but soon becomes docile.</p>
<p>Common Ribbonsnake* <i>Thamnophis sauritus sauritus</i> (Eastern Ribbonsnake)</p> <p>CORI 18 – 40"</p>	<p>Streams, ponds, swamps, wet meadows; swims only at surface; avoids deep water; skirts shore thru vegetation when fleeing. Basks in bushes; agile & nervous. Semi-aquatic—seldom far from water. Salamanders, frogs, small fish.</p>	<p>Slim, trim, w/ three bright yellow stripes contrasting w/ dark back & sides; double row of black spots may be present; long slender tail 1/3 length of snake; scales keeled in 19 rows. A dark ventrolateral stripe (usually brown) on two lowest rows of scales & outer edge of belly. Belly plain greenish or yellowish; anal plate single.</p>	<p>Live-bearing; 3–26; born July–Aug. Hatchlings: 7–9"; mature in 2-3 years.</p>	
<p>Northern Ring-necked Snake <i>Diadophis punctatus edwardii</i></p> <p>RNSN 10 - 30"</p>	<p>Moist situations in forest, grassland, rocky wooded hillsides, cutover areas w/ debris; under rocks, logs, loose bark of dead trees. Secretive. Earthworms, slugs, small salamanders, snakes; partially constricts prey.</p>	<p>Small, slender. Gold neck ring on dark body; bright yellow to red belly. Loreal scale present; scales smooth, 15–17 rows. Anal plate divided. Compare w/ juvenile brownsnakes which have neck ring but have keeled scales (use lens).</p>	<p>Eggs: cluster of 1–10, white or yellowish, 1"; June/July in communal nest site. Hatchlings: 4–6"; mature in 2-3 yrs. Y – darker than ad.</p>	<p>Rarely attempts to bite, may void musk & foul-smelling cloacal contents.</p>
<p>Eastern Wormsnake <i>Carphophis amoenus amoenus</i></p> <p>EAWO 8 – 14¼"</p>	<p>Damp hilly woods, partly wooded grassy hills above streams; under rocks, logs, stumps, loose soil. Secretive; most likely to be seen in spring when habitat still moist; goes underground in dry weather. Earthworms.</p>	<p>Tiny, glossy, cylindrical, unpatterned brown to black; tail short tapering to a sharp tip; scales smooth, 13 rows. Bright pink belly; anal plate divided. Y – darker than ad.</p>	<p>Eggs laid June–July, 1–8 elongate, 7/8"; hatch in 7 wks. Hatchlings: 3–4"; mature in 3 yrs.</p>	<p>Does not bite when handled.</p>
<p>Northern Rough Greensnake <i>Ophedrys aestivus aestivus</i> (Rough Greensnake)</p> <p>NRGR 20 – 45 5/8"</p>	<p>Vines, bushes & trees near & overhanging water; swims well—may take to water when disturbed; almost invisible in dense vegetation. Arboreal. Diurnal Grasshoppers, crickets, caterpillars, spider.</p>	<p>Slender, uniform pea-green w/ long tapering tail; keeled scales, 17 rows (Smooth Greensnake in w. MD has smooth scales, & is mostly terrestrial). Belly white to yellowish-green; anal plate divided.</p>	<p>Lays 3–12 smooth, hard capsule-shaped eggs 1½" June to Aug; hatch in 5–12 wks. Hatchlings: 7–8 5/8", grayish-green; mature in 1–2 yrs.</p>	<p>Graceful, mild-tempered. Green color changes to blue shortly after death.</p>
<p>Eastern Hog-nosed Snake Heterodon platirhinos</p> <p>EHNS 20 – 45½"</p>	<p>Open, sandy areas; thinly wooded uplands, cultivated fields, woodland meadows. Diurnal. Toads primarily; will also eat frogs.</p>	<p>Stout body; wide neck; pointed, slightly upturned snout; color & pattern variable- yellow/ reddish/brown/gray; squarish dark blotches on back interspersed w/ round dark dorsolateral blotches; scales keeled, 23–25 rows. Belly mottled; underside of tail conspicuously lighter than belly; anal plate divided.</p>	<p>In shallow cavity in loose or sandy soil lays 4–61 elongate, thin-shelled eggs, 1¼"; June–July. Hatchlings: 6½-9"</p>	<p>When disturbed, "hoods" its neck, inflates body, hisses loudly & strikes—or may play dead. Rarely bites.</p>

<p>Northern Black Racer <i>Coluber constrictor constrictor</i></p> <p>NBRA 34 – 71”</p>	<p>Abandoned fields, grasslands, open woodlands, rocky wooded hillsides, grass-bordered streams; often seen streaking across roads.</p> <p>Mostly terrestrial (when pursued may retreat upward into low bushes or low tree branches).</p> <p>Diurnal.</p> <p>Large insects, frogs, lizards, snakes, small rodents, birds; despite Latin name is not a constrictor. When hunting holds head high & moves swiftly through cover.</p>	<p>Long, slender, fast-moving; black above and below except white on chin & throat; iris brown; round; scales smooth, 17 rows, 15 rows at vent; anal plate divided.</p> <p>Y – gray, marked w/ dark spots on sides.</p>	<p>Eggs laid in rotting tree stump, sawdust pile, under rocks; 5–28 soft, leathery w/ rough granular texture, 1-1 7/8”, mid-June-Aug; hatch 6–9 wks, July–Sept.</p> <p>Hatchlings: 8–13”</p>	<p>May vibrate tail tip in dead leaves imitating a rattlesnake (not found in Howard Co. Will bite repeatedly & thrash violently if grabbed.</p>
<p>Eastern Ratsnake <i>Pantherophis alleghaniensis</i></p> <p>EARA 34 – 101”</p>	<p>Hardwood forests, swamps, oldfields; from wet to arid situations.</p> <p>Terrestrial/arboreal: skilled climber; goes up trees & buildings.</p> <p>Diurnal spring & fall; nocturnal in summer.</p> <p>Birds, eggs, mice & small mammals, lizards.</p>	<p>Long, powerful constrictor; shiny black w/ traces of white between scales; scales weakly keeled; in cross-section shaped like a loaf of bread. Dark postocular stripe ends at mouth (not onto neck).</p> <p>Belly gray/brown on light background; chin & throat white or cream; anal plate divided.</p> <p>Y – vividly blotched w/ gray or brown on pale gray.</p>	<p>Eggs in rotten logs, leaf litter, under rocks; 5–30 smooth-shelled oblong 1½-2¼”, June-Aug, hatch Aug–Oct.</p> <p>Hatchlings: 11–16”</p>	<p>Sometimes resides in tree cavities.</p>
<p>Mole Kingsnake* <i>Lampropeltis calligaster rhombomaculata</i></p> <p>MOKI 30 – 52 1/8”</p>	<p>Open fields, barnyards, rocky hillsides, open woodland, thickets.</p> <p>Secretive; spends much of day underground (an accomplished burrower) or under rocks; most frequently seen crossing roads on warm nights during or after rains.</p> <p>Coastal Plain & e. Piedmont only.</p> <p>Small rodents, birds, frogs, lizards, snakes.</p>	<p>Shiny, slender, variably patterned; (often some shades of brown) w/ v-shaped arrowhead-like markings on top of head, back blotches well separated; scales smooth, 21 or 23 rows; may or may not be patterned, typically small dark-edged spots along sides & tail.</p> <p>Belly yellow w/ brown rectangular blotches; anal plate single.</p> <p>Y – boldly marked w/red & brown spots.</p>	<p>Lays 5–17 eggs, 1/3/4–2”, in earth cavity, June–July; hatch 7–11 wks, Aug–Sept.</p> <p>Hatchlings: 8–11”</p>	<p>Usually mild-tempered.</p>
<p>Eastern Kingsnake <i>Lampropeltis getula getula</i> “chain snake”</p> <p>EAKI 36 – 82”</p>	<p>Diverse. Dry, rocky wooded hillsides to river swamps & pine woods; streambanks are favorites.</p> <p>Secretive, hides under boards, logs, & debris; basks occasionally in open spring & fall.</p> <p>Primarily terrestrial; swims readily.</p> <p>Diurnal early a.m. & dusk; nocturnal summer.</p> <p>Snakes, lizards, mice, birds, & eggs; a strong constrictor.</p>	<p>Large; chocolate brown to black w/ bold narrow light chainlike pattern; scales smooth, 21 rows.</p> <p>Belly from light to dark; anal plate single.</p> <p>Y – patterned like ad.</p>	<p>3–24 creamy white to yellowish, elongated eggs, 1 ¼-2¾”; June–Aug; incubation 8½- 1½ wks.</p> <p>Hatchlings: 9–12”</p>	<p>Coastal Plain species that has moved into e. Piedmont.</p>
<p>Eastern Milksnake <i>Lampropeltis triangulum triangulum</i></p> <p>EAMI 14 – 78¼” “red adder”</p>	<p>Diverse. Pine forest, open deciduous woods, rocky hillsides, farmland, damp bottomland, suburbs, farm buildings entered in rodent search.</p> <p>Secretive. Hides under logs, rotting stumps, boards, stones, etc. Usually not seen in open except at night.</p> <p>Small rodents, birds, lizards, & snakes</p>	<p>Y or V-shaped patch on nape; saddle-shaped brownish black-bordered blotches across back extending on sides; or colorfully ringed or blotched w/red, orange, black, white; light rings widen near belly; scales smooth.</p> <p>Belly checkerboard black on white; anal plate single.</p> <p>Y – blotched w/ bright red giving rise to name “red adder”.</p>	<p>2–7 elliptical eggs, often laid in rotting log; June–July; hatch Aug–Sept.</p> <p>Hatchlings: 5½-11</p>	<p>Name comes from an erroneous folk belief that this species “milks” cows.</p>
<p>Northern Copperhead <i>Agkistrodon contortrix mokeson</i></p> <p>COPP 22 -53”</p>	<p>Wooded hillsides w/ rock outcrops above stream or ponds; edges of swamps.</p> <p>Basks during day in spring and fall; becomes nocturnal in warm weather favoring rotting logs, sawdust piles, debris piles, large flat stones near streams.</p> <p>Small rodents, also small birds, frogs, large insects.</p>	<p>Stout; coppery red head wider than neck; dark broad hour-glass-shaped bands wide on sides and narrow across back; small dark spots between bands; lighter brown background; top of head unmarked; vertical pupils; heat-sensing pit between eye & nostril; scales weakly keeled, 23 – 25 rows; anal plate single.</p>	<p>Live-bearing 1–14; Aug–early Oct.</p> <p>At birth 7– 10”; mature in 2–3 yrs.</p>	<p>Normally quiet, almost lethargic.</p> <p>Bite is painful, but rarely life-threatening.</p>
<p>Salamanders – 1) two pairs of relatively similar-sized limbs; 2) possess a tail; 3) costal grooves usually present</p>				
<p>Marbled Salamander <i>Ambystoma opacum</i></p> <p>MASA 3½ - 5”</p>	<p>Moist, sandy area; swamp lowlands; wooded hillsides above temporary pools; most of life is lived underground.</p> <p>Found under rocks, logs, other debris spring & fall.</p>	<p>Stout body; grayish (F) or white (M) crossbars on black body</p> <p>Belly & lower sides black</p>	<p>Breeds in autumn</p> <p>Eggs laid in depressions that will fill w/ rains; in a group but not attached. Guarded by female until hatching after water covers them.</p>	

Spotted Salamander <i>Ambystoma maculatum</i> SPSA 5½ - 9¼"	Woods, hillsides near woodland pools on floodplain during breeding; much time spent underground.	Two irregular rows of round yellow or orange spots along a dark back; stout body; four toes on front feet, five on hind feet. Belly slate gray.	Feb – April; congregates at night in woodland temporary pools during & after late winter/ early spring rains (when ground has thawed & temp at least 42F). Large clear to opaque white egg clusters completely contained in gelatinous mass, 3–5" diam.	
Red-spotted Newt <i>Notophthalmus viridescens</i> (Eastern Newt) RSNE 2 5/8 – 5½"	Ponds, lakes w/ dense submerged vegetation, swamps, streams, forest pools, moist woodlands. Adult: totally aquatic; eft (juvenile) mostly terrestrial; after several years transforms to ad. & returns to water. Worms, insects, small crustaceans.	Ad. – Rough skin; olive to brown above, many black dots on all surfaces; rows of black-edged red dots on back; yellow below. Lacks costal grooves. Eft – orange to red above, yellow-white to yellow-orange below; red markings usually like ad.	Feb – May, female lays 200–400 eggs singly on submerged vegetation; after hatching remain in water until late summer/early fall when transform to efts & move to forest floor. After 1-3 yrs. return to water & change to an adult.	
Eastern Red-back Salamander <i>Plethodon cinereus</i> (also a Lead-back phase) ERSA 2½ – 5"	Cool, moist mixed, deciduous, or coniferous forests. Terrestrial. Day: hides under stones, bark, or woody debris; night searches moist leaf litter; dry weather goes underground, re-surfaces after rains. Very difficult to find during summer months.	Slender body; wide, straight-edged reddish stripe along back (gray & black stripe in Lead-backed variety); usually 19 costal fold, 7–10 between appressed limbs. Belly: black & white mottling.	Every other year in June/July female suspends cluster of 6–12 eggs under stones or in rotten logs coiling around & attending eggs. Hatches in two months at 7/8". Omits aquatic stage. Matures in two years. Most ubiquitous salamander throughout most of range.	Usually slow-moving but can run through forest; jumps by slapping tail against ground.
Northern Slimy Salamander <i>Plethodon glutinosus</i> NLSL 4½ - 8"	Moist wooded ravines or hillsides; floodplains, shale banks. At surface in early spring (except when dry); under flat rocks, rotten logs; after shower roams forest floor; active until sub-freezing temperatures in fall. Does not occur on Coastal Plain. Nocturnal.	Shiny black body w/ large white or yellowish spots on sides & smaller spots on head, back, & tail; skin sticky; 16 costal grooves, 10 – 13 between limbs. Belly, chin, & throat dark.	Lays 6–36 eggs in underground retreat or in rotten log late May/early June; female guards nest; larvae hatch early autumn. No aquatic stage; mature in three yrs.	Sticky substance on skin difficult to remove from fingers. Seems to need a more moist habitat than Red-backed.
Northern Dusky Salamander <i>Desmognathus fuscus</i> NDSA 2½ - 5½"	Rocky woodland streams, seepages, springs, floodplains & mucky sites. Usually absent from large streams where fish predation occurs. Insect larvae, sowbugs, earthworms.	Light line from eye to angle of jaw; gray/brown w/ slightly darker markings (pattern changes w/ age); 14 costal grooves (2-3 between appressed legs); keeled tail triangular in cross-section; hind legs stout & longer than forelegs. Two-lined Salamander often confused w/ this species, especially in larval form.	Female lays grapelike cluster 12–26 eggs, June–Sept, in soft dirt or shallow excavation near water or under rocks or rotten logs & in stream cavities. Eggs usually found w/ female; hatch in 6–13 wks. at 5/8"; matures in 3–4 yrs. Newly hatched young may remain on land for several wks. before entering water & completing development.	Accomplished jumper. Often found w/ No. Red Salamander
Northern Red Salamander* <i>Pseudotriton ruber</i> NRSA 3¾ - 7"	Springs, seepages, cool clear brooks & adjacent woodlands & lowlands Although can range some distance from water, usually found in leaf litter of spring-fed brooks or under rocks or other debris. Earthworms.	Stout red body with short legs & tail w/ irregularly-shaped black spots; back & belly color blend gradually along sides; margin of chin often flecked w/ black; yellow eyes; costal grooves 16 17. Black/brown spots on ventral surface. Y – coral red- to reddish-orange.	Elaborate spring courtship; female stores sperm until fall, then lays 50–100 eggs under a submerged log or rock. Hatch at 7/8" in late fall; transform in 2½ yrs when 2½-4¼" long.	
Northern Two-lined Salamander <i>Eurycea bislineata</i> NTLS 2¼ - 4¾"	Rock-bottomed brooks, seepages, floodplains; locations where fish at a minimum hides under objects, often at water's edge, wanders into woodlands in wet weather; abundant streamside species. When discovered, runs or swims away vigorously.	Broad yellow band speckled and/or tinged w/ darker tints bordered by brown/black stripe from eye to tail; tail oval, keeled, compressed; tail more than twice length of body; 15–16 costal grooves. Belly yellow.	12–100 eggs on underside of rocks, logs, or submerged plants; female may guard; aquatic larvae hatch March–early April at ½", transform in 1–3 yrs.	Similar species: duskies have light line from eye to angle of jaw; skinks have scales & toes have claws.
Long-tailed Salamander <i>Eurycea longicauda</i> LTSA 4 – 7¼"	Springs, seepages, floodplains, caves. Mostly terrestrial. On warm rainy nights searches forest floor for invertebrates.	Yellow to orange w/ conspicuous black markings on tail; tail much longer than body (67%), costal grooves 13-14. Belly unmarked. Y – yellow; tail relatively short.	Eggs laid underground near springs, pools, & streams; larvae hatch in 6–8 wks. at ¾", transform in 3½-7 mo.	Does not occur on Coastal Plain.

Four-toed Salamander <i>Hemidactylium scutatum</i> FTSA 2 – 4”	Bogs, floodplains & associated hardwood forests near boggy areas, especially associated w/ sphagnum.	Hind foot w/ 4 toes; marked constriction at base of tail; reddish-brown above, grayish side, 13–14 costal grooves. Belly white w/ black spots.	March lays 2–3 dozen eggs singly attached to sphagnum (or other plants) close to water; female guards 6–8 wks. After hatching, ½” aquatic larvae transform in 1½ mo. at 7/8”	Grab carefully as tail breaks off easily.
Toads – 1) four limbs; 2) warty skin; 3) lack scales and claws				
Eastern Spadefoot <i>Scaphiopus holbrookii</i> EASP 1¾ - 3¼”	Forested or brushy areas w/ sandy or loose soil; can be found on roads after rains. Nocturnal.	Sickle-shaped spade on each hind foot; no boss between eyes; two light lines along back like a lyre or wavy hourglass; vertical pupils; stout; relatively smooth skin.	March – Sept Call carries long distance; may call from burrow. Gelatinous bands of eggs laid in temporary rain pools. Time from egg to frog can be as little as 2 wks, up to 8.	Low-pitched explosive grunt akin to young crows at about 2 second intervals.
American Toad <i>Anaxyrus americanus</i> (Common Toad) AMTO 2 – 4¼”	Moist forests, floodplains, gardens; more resistant to dehydration than most frogs so doesn't need to stay near water as long as food is plentiful. Primarily nocturnal.	Paratoid glands are elongated; usually separate from cranial crests; usually 1 or 2 orange to brown warts in each large dark spot; enlarged warts on thighs; may have light line down middle of back; color high variable. Belly usually spotted. M – dark throat.	Usually mid-March – April lays strings of eggs in temporary or fishless pools. Tiny black tadpoles	Sustained trill lasting 30–45 seconds or more. Compare to/ Fowler's Toad.
Fowler's Toad <i>Anaxyrus fowleri</i> (a subspecies of Woodhouse's Toad) FOTO 2½ - 5”	Sandy soil; marshes, yards, temporary pools. Usually a Coastal Plain species. Primarily nocturnal.	Three or more warts in each of 6 large dark spots; virtually unspotted chest & belly (occasionally a central breast spot); no enlarged warts on thighs; paratoid glands touch cranial ridges behind eyes; light stripe down back.	Usually breeds later than Am. Toad. May – July after rains heard in large choruses; calls from water. Strings of eggs in shallow water attached to vegetation.	A short nasal bleat (like a distant sheep), 1 second+, on one tone. Compare to American Toad.
Frogs – 1) four limbs; 2) moist glandular skin; 3) lack scales and claws				
Upland Chorus Frog* <i>Pseudacris feiarum feriarum</i> UCFR ¾ - 1¼”	Wet or moist grassy meadows; ponds, damp leaf litter in woods; cold tolerant. Ground dweller, climbs low plants only. Coastal Plain species. Primarily nocturnal.	Light line along upper lip; dark stripe from snout to groin passing thru eye; three longitudinal back stripes (may be thin, broken, or absent); rough warty skin. Feet have small or no toe pads; nearly webless. Shank is ½ body length.	Feb into April. Calls from weeds, water's surface; fairly open situations in or near shallow, often temporary bodies of water.	“Pr-e-e-p” or “cr-e-e-e-k” like running finger along teeth of a comb; very slowly ascends scale.
Spring Peeper <i>Pseudacris crucifer</i> (Northern Spring Peeper) SPPE ¾ - 1¼”	Low plants near temporary pools in thickets & woodlands [chorus frogs prefer open calling stations]. Mostly nocturnal, but sometimes found by day in wet woodlands.	Smooth skin; dark X on back; dark bar between eyes; color variable; toe pads rather small.	As early as mid-Feb–May; 800–1,300 eggs laid singly in water usually attached to aquatic plants; hatch in 5-15 days; 75–90 days to develop. Compare trilling call (pr-e-e-e-p) w/ Northern Chorus Frog.	A single shrill note lasting less than half a second, call once a second.
Eastern Cricket Frog <i>Acris crepitans</i> (Northern Cricket Frog) ECFR ½ - 1½”	Mudflats, edges sunny shallow ponds w/ vegetation, streams w/ sunny banks, floodplains. Diurnal; active, hard to catch in grass at water's edge. Coastal Plain species; uncommon above Fall Line.	Rough skin, snout blunt, color variable; dark ragged-edged stripe on back of thighs; dark triangle on top of head between eyes. Legs relatively short. Web on hind foot reaches tip of first toe & next-to-last joint of longest toe.	Mid-April – July One of last frogs to get into full chorus.	Gick, gick, gick – like two stones being clicked together; begins slowly then picks up speed for 20-30 beats.
Green Treefrog <i>Hyla cinerea</i> GRET 1¼ - 2½” [Possible in Howard Co.]	Swamps, lakes & stream edges; floating vegetation; vegetation near permanent water. Calls most vigorously in damp weather. Walks rather than jumps. Coastal Plain species.	Usually bright green but color variable; usually a yellowish stripe along sides of body & upper jaw; sometimes black-edged gold spots on back; enlarged toe tips are sticky pads.	Late April - July. Males call while clinging to vertical stems above water.	Bell-like “quank” up to 75 times a minute..

Gray Treefrog* <i>Hyla versicolor</i> GRAT 1¼ - 2¼"	Trees & shrubs near woodlands, usually near a permanent body of water. Shuns large permanent swamps. Mostly forages aloft.	Skin rough; dark-edged light mark below eye; inner surface of hind legs orange or yellow, mottled w/black; varied colors of gray & green; sizeable toepads. [All gray treefrogs require special recorded verification—see handbook.]	May – July, descend at night to breed. Whitish eggs attached or on surface; hatch in 4-5 days as ¼" tadpoles w/ red-orange tails & green-white bellies.	Short, slow trill 1-3 seconds from dusk to midnight when nights are warm.
Wood Frog <i>Lithobates sylvaticus</i> WOFR 1 3/8 – 2¼"	Woodland ponds & temporary floodplain pools outside of breeding season may be found far from water. Normally one of first frogs to be heard in spring; [may use same pools as Spotted Salamanders].	Dark "robber" mask; pale line along jaw & tympanium; color & pattern variable; ridges along back well-developed; toes half webbed.	Short explosive breeding season of not more than two wks, sometimes before ice completely melted (usually early to mid-March). Eggs in jelly coating, a large loose glob free or attached to vegetation; hatch in 4-24 days; develop in 44-85 days; tadpoles gray/brown w/bronze sheen.	Call is a quack (chorus may sound like distant Canada Geese).
Southern Leopard Frog <i>Lithobates spenocephalus utricularius</i> SLFR 2 - 3½"	Shallow, freshwater habitats. Ventures well away from water in summer among moist vegetation. Mostly a Coastal Plain species. Primarily nocturnal.	Often a light spot in middle of tympanium; long pointed head; only a few dark spots of sides of body between light-colored dorsolateral ridges (spots not light bordered); light line along borders of upper jaw.	Male calls from either water or land. Egg masses laid in shallow water.	Short, guttural trill like an old car that has not quite "caught".
Pickerel Frog <i>Lithobates palustris</i> PIFR 1¼ - 3¼"	Cool, clear slow-moving woodland stream, ponds, lakes w/ low, dense vegetation; adjacent wet meadows. Wanders well out in grassy field in summer. Leaps into water from shore when disturbed. Nocturnal	Smooth, tan, green or brown w/ squarish dark spots in two parallel rows down back; undersurfaces of hind legs near groin yellow/orange; light line along upper jaw; two conspicuous ridges down back. Y – have a metallic luster; lack bright colors under legs.	March – mid-May; males often call when submerged. Egg masses free or attached (egg mass smaller than Wood Frog's & eggs smaller); hatch 6–19 days; 70–96 days to develop.	Snores, about 1 second (reminiscent of Blue-winged Warbler but no inhale, exhale).
Northern Green Frog <i>Lithobates clamitans</i> NGFR 2¼ - 4"	Wetlands, ponds, stream, shallow edges. Primarily nocturnal.	Looks like a small Bullfrog (green or brown); prominent longitudinal ridges along back (do not reach groin); large tympanium; upper lip typically green. Belly white w/ dark flecks. M – yellow throat.	May – July Eggs laid in 3-4 small clutches attached to submerged vegetation; hatch in 3-5 days; tadpoles have green tails; transform in second year.	Single deep note sounds like a loose banjo string.
American Bullfrog <i>Lithobates catesbeianus</i> AMBU 3½ - 8"	Large permanent bodies of water w/ vegetation; when startled at water's edge, may make a cat-like meow while leaping into the water. Warm weather frog. Nocturnal.	Dorsal ridge only from eye to tympanium (not along back); smooth; large tympanium; webbing on hind foot does not extend to tip of longest toe; generally green above. Underside pale. M – yellow throat.	May – July Eggs attached to submerged vegetation; hatch in 4 days; tadpoles 4-6" olive-green & generally take 2 yrs. to transform.	Low, resonant "jug-o-rum".

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