

Maryland Envirothon: Class Amphibia & Reptilia

KERRY WIXTED
WILDLIFE AND HERITAGE
SERVICE



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Amphibia Overview

- >40 species in Maryland
- Anura (frogs & toads)
- Caudata (salamanders & newts)
- Lay soft, jelly-like eggs (no shell)
- Have larval state with gills
- Breathe & drink through skin



Gray treefrog by Kerry Wixted

Note: This guide is an overview of select species found in Maryland.

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Anura

- ~20 species in Maryland
- Frogs & toads
- Short-bodied & tailless (as adults)
- Typically lay eggs in water & hatch into aquatic larvae



Green treefrog by Kerry Wixted

Order: Anura

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Caudata

- > 20 species in Maryland
- North America has more salamander species than the rest of the world combined!
- Undergo metamorphosis

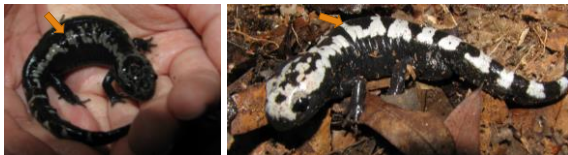


Marbled salamander by Kerry Wixted

Order: Caudata

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Family Ambystomidae (Mole Salamanders)



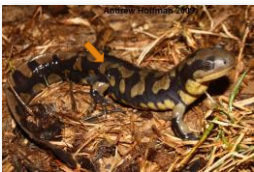
Marbled Salamander (*Ambystoma maculatum*)

3.5 – 5.5"; Has a stout body with light gray (female) or white (male) crossbars on dark gray to black body; breeds in the fall at the edge of small, shallow wetlands (vernal pools); lives in woodland habitat and spends most time underground

Order: Caudata; Family Ambystomidae

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Ambystomidae (Mole Salamanders)



Eastern Tiger Salamander (*Ambystoma tigrinum*)
7 – 8.25"; Dull black to deep brown with irregular light olive or yellowish brown spots extending down sides; breeds in winter; **State Endangered**



Spotted Salamander (*Ambystoma maculatum*)
4.5 - 8"; Black or dark gray with paired yellow spots; spots occasionally orange or absent; found in hardwood forests & breeds in early spring

Order: Caudata; Family Ambystomidae

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Family Cryptobranchidae

Eastern Hellbender

(*Cryptobranchus alleganiensis*)

- State Endangered
- Up to 29" in length
- Flat head, sides w/ wrinkled flesh folds
- Clear, flowing streams



Photos By Dave Kazzyak

Order: Caudata; Family Cryptobranchidae

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Family Plethodontidae

Eastern Red-backed Salamander

(*Plethodon cinereus*)

- 2.25 - 4" in length
- Salt & pepper pattern on belly
- Has striped (with reddish mid-dorsal stripe) & leadback variants (uniformly dark gray-black)
- One of most abundant vertebrates in North America



Redback (top) and Leadback (bottom & right) By Kerry Wixted

Order: Caudata; Family Plethodontidae

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Family Salamandridae

Red-spotted Newt

(*Notophthalmus viridescens viridescens*)

- 2.25 - 4.8" in length
- Aquatic or semi-aquatic adults olive green with red spots outlined in black
- Terrestrial juveniles (efts) orange-red or brownish with red spots outlined in black
- Skin is granular in appearance compared to other salamander species



Adult (top) and eft (bottom) By Kerry Wixted

Order: Caudata; Family Salamandridae

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Reptilia Overview

- >50 species in Maryland
- Testudines (turtles)
- Squamata (lizards & snakes)
- Lack aquatic larval stage
- Have scaly skin
- Lay eggs w/ shells or give live birth



Eastern Snapping turtle by Kerry Wixted

Note: This guide is an overview of select species found in Maryland.

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Testudines

- ~22 species in Maryland
- Upper part of shell= carapace
- Lower part of shell= plastron
- Scales= scutes
- Largest species= leatherback sea turtle



Order: Testudines

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Family: Chelydridae

Eastern Snapping Turtle (*Chelydra serpentina*)

- 8-19" carapace length
- Long neck and big head with powerful jaws
- Skin covered in many bumps and tubercles
- Long tail with three rows of spiky tubercles
- Rear of shell is saw-toothed



Juvenile & adult snapping turtle by Kerry Wixted

Order: Testudines; Family: Chelydridae

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Family Emydidae

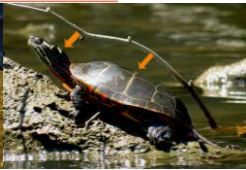
- ~12 species in Maryland
- Includes box turtle, sliders, terrapins, and more
- Many are adapted for swimming



Order: Testudines; Family Emydidae

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Pond Turtles



Red-eared Slider
(*Trachemys scripta elegans*)

5-8"; **Invasive**; plastron yellow with dark blotches; has broad reddish-stripe behind eye in most individuals

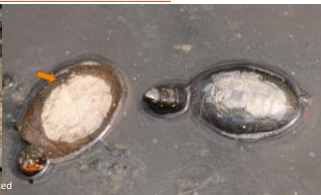
Eastern Painted Turtle
(*Chrysemys picta picta*)

4.5-8"; plastron yellow and lightly spotted; scutes on carapace almost in straight lines across back

Order: Testudines; Family Emydidae

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Spotted Turtle (*Clemmys guttata*)



By Kerry Wikted

- 3.5-4.5" carapace
- Yellow spots on shell
- Head & neck w/ yellow or orange spots
- Found in shallow, marshy meadows and bogs, swamps and small ponds

Order: Testudines; Family Emydidae

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Bog Turtle (*Glyptemys muhlenbergii*)

- Federally Threatened
- State Threatened
- 3-4" carapace
- Orange patches on sides of head
- Lives in sphagnum bogs and open swamps



By USFWS

Order: Testudines; Family Emydidae

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Eastern Box Turtle (*Terrapene carolina*)

- 4.5 - 6" carapace
- High, domelike shell
- Extremely variable in color & pattern
- 4 toes on hindlimbs
- Female:
 - Eyes normally brown
 - Flat plastron
- Male:
 - Eyes often red
 - Central concave on plastron
- Woodlands and thickets= habitat



By Kerry Wixted

Order: Testudines; Family Emydidae

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Northern Diamond-backed Terrapin (*Malaclemmys terrapin terrapin*)

- Female: 6 - 9.3" carapace
- Male: 4 - 5.5" carapace
- Concentric grooves and ridges or concentric dark and light markings on each carapace scute
- Skin coloration is cream or light silver to dark gray or black, often with dark spotting
- Light-colored beak, sometimes with dark "mustache"
- MD state reptile
- Coastal marsh habitat



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Order: Testudines; Family Emydidae

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Squamata

- ~33 species in Maryland
- "Scaled reptiles"
- Lizards & snakes
- Introduced=
 - Mediterranean Gecko



M. Gecko by Jim Brighton, Maryland Biodiversity Project

Order: Squamata

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Family Phrynosomatidae

Eastern Fence Lizard (*Sceloporus undulatus*)

- 4-7.25" in length
- Heavily keeled scales
- Dark, lateral cross bars (horizontal stripes)
- Females are gray with darker cross bars
- Males may be brownish with very faint crossbars (if present) and an iridescent blue and black patch at the base of the throat and on each side of the belly



Male Eastern Fence Lizard by Kerry Wixted

Order: Squamata; Family Phrynosomatidae

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Family Teiidae

Six-lined Racerunner (*Aspidoscelis sexlineatus*)

- 6-10.5" in length
- Slender body w/ very long tail
- Six light-colored stripes from the head through the tail
- Sandpaper-like scales on body; keeled scales on tail which appear rough
- Open areas with sand or loose soil= habitat



Six-lined Racerunner by Kerry Wixted

Order: Squamata; Family Teiidae

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Eastern Hog-nosed Snake (*Heterodon platirhinos*)

- 20-30" in length
- Coloration variable with yellow, brown, gray, orange or red on a dark splotch-patterned back
- Some are an un-patterned ebony black or dark grey
- Snout upturned
- Often will flatten out head, hiss, pretend to strike and/or play dead if disturbed



Photo by Andrew Hoffman CC by NC ND 2.0

Order: Squamata; Family Colubridae

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Family Natricidae

- Formerly in Colubridae
- Harmless, live-bearing snakes

DeKay's Brownsnake (*Storeria dekayi*)

Small, brownish/gray snake with small, paired black spots running down the back. A thin dark line extends from the back of the head behind the eye to the base of the jaw. Juveniles have a light band across their neck.



Photo by Mark Nenadov CC by 2.0

Order: Squamata; Family Natricidae

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Northern Watersnake (*Nerodia sipedon sipedon*)



Photo by Andrew Dalbert CC by NC 2.0



Photo by Leah Callagher CC by 2.0

22-42"; pattern highly variable with variations including bands that are thicker at the top and thinner at the bottom, incomplete bands or no bands. Has dark lip stripes. Often mistaken for cottonmouth (water moccasin) which does not occur in Maryland.

Order: Squamata; Family Natricidae

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Family Crotalinae

- All are venomous
- Heads are wider than the neck
- Possess facial pits between eye & nostrils
- Scales under tail are in a single row



Timber Rattlesnake by Kerry Wixted

Order: Squamata; Family Crotalinae

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Eastern Copperhead (*Agkistrodon contortrix*)

- 24-36"
- Has Hershey-kiss shaped markings that are skinny at the top and wider at the base
- Head is coppery in color with a contrasting upper lip
- Juveniles have bright yellow caudal lure



Adult photo (top) by Richard H. Leggett Jr.
Juvenile photo (bottom) by Andrew Hoffman CC BY-NC-ND 2.0

Order: Squamata; Family Crotalinae

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Timber Rattlesnake (*Crotalus horridus*)

- 36-60"
- Found in western Maryland
- Color variable from light and striped to almost dark black with jagged stripes
- Has distinct rattle at end of tail
- Found in wooded areas near rocky outcroppings



Photo by: Peter Paplanus CC by 2.0

Order: Squamata; Family Crotalinae

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For Additional Information

Special thanks to Rachel Gauza for assistance putting together this guide. For more information on Maryland's reptiles and amphibians, please visit our webpage at: dnr.maryland.gov/wildlife Additional information can be found in the following resources.

Book Resources:

- The Maryland Amphibian and Reptile Atlas
- Peterson Field Guide to Reptiles and Amphibians of Eastern and Central North America, 4th Ed

Online Resources:

- [Maryland Envirothon \(Wildlife and Heritage Service\)](#)
- [Maryland Biodiversity Project \(Amphibians\)](#)
- [Maryland Biodiversity Project \(Reptiles\)](#)
- [Virginia Herpetological Society](#)



Larry Hogan, Governor Jeanie Haddaway-Riccio, Secretary
 Wildlife and Heritage Service 1580 Taylor Ave., E-1* Annapolis, MD 21401
 410.760-8140
dnr.maryland.gov/wildlife
