

# 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

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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



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# Family Bufonidae (Toads)



American Toad (Anoxyrus americanus) 2-3-5"; typically 1-2 spots/ wart; parotoid gland is separated from the cranial crest or connected narrowly by a spur; enlarged warts on tibia; Call: an elongated trill or whir lasting 5-30 seconds and resembles a simultaneous whistle and hum

er: Anura; Family Bufonidae



Fowler's Toad (Anaxyrus fowleri) 2-3"; typically 3+ spots/ wart; parotoid gland is in contact w/ the cranial crest; Call: a short, brash and whiny call lasting 2-4 seconds

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# Family Hylidae (Treefrogs)





Spring Peeper (*seudacris crucifer*) 0.75 - 1.25"; Brown, tan, or yellowish with dark X-shaped mark on back; Dark bar between eye; Mask from nose through eye and tympanum, often extending down side **Call**: Clear, shrill, high-pitched whistle or peep

Anura; Family Hylidae

Gray Treefrog & Cope's Gray Treefrog (Hyla versicolor & Hyla chrysoscelis) 125 - 2" (Identical in appearance) (Gray to white with darker streaking, resembling a tree knot; Cream square below each eye; Inner thigh yellow or orange, enlarged toe pads; Gall (H: versicolor); Musical, biref-like trill Gall (H: chrysocelis); Bapdi, more reitcher-like trill

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# Family Ranidae (True Frogs)



Northern Green Frog (Lithobattes clamitans) 2.25 - 3.5"; Underside white (or yellow in breeding males); dorsolateral ridges on the back end before reaching the groin Call: Short and accented multi-part call, bursts of sound akin to the plucking of a banjo string

a; Family Ra



Bullfrog (Lithobates catesbeianus) 3.5 - 64"; Underside white with mottling (or yellow in breeding males); no dorsolateral ridge; Call: Deep pitched, resembling the bellow of a bull

# Caudata

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



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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; breds in the fall at the edge of small, shallow wetlands (vernal pools); lives in woodland habitat and spends most time underground

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ta; Family Amby

# 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

ta; Family Ambystor



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

# Family Cryptobranchidae

Eastern Hellbender

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

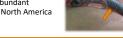


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# Family Plethodontidae

Eastern Red-backed Salamander (Plethodon cinereus)

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



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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

Order: Caudata; Family Salaman



# **Reptilia** Overview

•>50 species in Maryland •Testudines (turtles) •Squamata (lizards & snakes) Lack aquatic larval stage •Have scaly skin



Eastern Snapping turtle by Kerry Wixted

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

#### Testudines

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



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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

Order: Testudines; Family: Chelydridae



Juvenile & adult snapping turtle by Kerry Wixted

# Family Emydidae

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





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# **Pond Turtles**

Order: Testudines; Family Emydidae



Red-eared Slider (Trachemys scripta elegans) 5-8"; invasive; plastron yellow with dark blotches; has broad reddish-stripe behind eye in most individuals

ler: Testudines; Family Emydidae

Eastern Painted Turtle (Chrysemys picta picta) 4.5-8"; plastron yellow and lightly spotted; scutes on carapace almost in straight lines across back

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# Spotted Turtle (Clemmys guttata)



• 3.5-4.5" carapace

Yellow spots on shell

Order: Testudines; Family Emydidae

Head & neck w/ yellow or orange spots
Found in shallow, marshy meadows and bogs, swamps and small ponds



# Bog Turtle (Glyptemys muhlenbergii)

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



#### 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
- <u>Male</u>:
- Eyes often red
- Central concave on plastron
- Woodlands and thickets= habitat

#### 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

Order: Testudines; Family Emydidae



#### 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

ler: Squamata; Family Phrynos

- (Sceloporus undulatus) 4-7.25" in length Heavily keeled scales Dark, lateral cross bars (horizontal stripes)
- Females are gray with darker cross bars
- 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

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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

#### Snakes of Maryland

Two species, the Eastern Copperhead and the Timber Rattlesnake, are pit vipers (Subfamily Crotalinae) and possess medically significant venom. Pit vipers are named for the heat-seeking pit between each oper and nostri. Both of Maryland's pit vipers should be treated with carlotion and should not be approached of handled. The graphic on the fit, and the associated table below characteristics of pit vipers in Maryland versus other Maryland snake. These characteristics do not work for venomous snakes outside of Maryland. For more information on snakes, please with <u>circuman vita do vitability</u>. Other Maryland Snake ID Characters Pit Viper ID Cha Ċ nd pu 1. Elliptical pu . No ser . Ser 3. Head slightly wider than neck 3. Head much wider that 4. Single anal p le row of scales on the de of tail \*\* Single scales on of tail\*\* pit vipers. \*\* These ch tics are helpful when e ning shed snake skins

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# Family Colubridae

- Egg-laying snakes
- Includes ratsnakes, racers, green snakes, and more



Order: Squamata; Family Colubri

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# Eastern Ratsnake (Pantherophis alleghaniensis)





Juvenile: Grayish with dark blotches along back. Has dark bar between eyes that continues past the eye to corner of mouth. <u>Adult</u>: 42-72"; Uniform black on top or with faint traces of a spotted pattern. Throat and underside light colored. Adept climber.

Order: Squamata; Family Colubridae

# Northern Black Racer (Coluber constrictor constrictor)



Juvenile: Strongly patterned, like watersnakes and ratsnakes, but have more blotches down the back, a set of blotches along the centerline and proportionally larger eyes, an adaptation for open field hunting.

Adult: 36 - 60"; Sleek in appearance. Plain black babove and steely gray to black below. Often white coloration seen on the chin. Large prominent eye.

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# Family Dipsadidae

Squamata; Family Colubridae

- Formerly in Colubridae
- Rear-fanged snakes

Squamata; Family Di

Small to moderately sized

Eastern Wormsnake (Carphophis amoenus amoenus)  $7.5\mathchar`-100\mathchar`-$ 



By Kerry Wixted

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# Family Dipsadidae: Ring-necked Snakes

Northern Ring-necked Snake (Diadophis punctatus edwardsii)

10-15"; Back is a uniform dark gray, bluish black or brown. Has cream-to-yellow or orange neck collar and yellow belly, which may grade to red towards the tail. Has complete neck ring and belly has no or small black spots down the midline.

Southern Ring-necked Snake (Diadophis punctatus punctatus)

10-15"; Back is a uniform dark gray, bluish black or 10-13 jeacks a unitorm dark gray, bluish black or brown. Has cream-to-yellow or orange neck collar and yellow belly, which may grade to red towards the tail. Has broken or notched neck ring behind head and belly has large, black half-moon shaped spots down the midline.



### 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,
- Orten will flatten out head, hiss, pretend to strike and/or play dead if disturbed



#### Order: Squamata; Family Colubridae

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# Family Natricidae

Squamata; Family Natr

- Formerly in Colubridae
- Harmless, live-bearing snakes

DeKay's Brownsnake (Storeria dekayi)





Photo by: Mark Nenadov CC by 2.0

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#### Northern Watersnake (Nerodia sipedon sipedon)





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

# 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



#### 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

Squamata; Family Cro



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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

# Juvenile Snake Comparisons



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### **Preventing Snake Bites**

Snake bites are not common, but it is important to be aware they can occur and how to deal with them. Below are some tips on how to avoid being bitten:

Learn how to identify the <u>copperhead</u> and the <u>timber rattlesnake</u>.
 When hiking or camping, watch where you put your hands and feet. Be mindful of where you sit and where you place your sleeping bag.

six and write you prace your seeping dag. 3 Wear suitable clothing when hiking, especially through tall grass or heavy brush. Long pants and heavy boots are usually best in tall grass and heavy brush.

4. Avoid rock piles and stacks of old boards or wood in forested areas as snakes use these areas frequently, especially sunny areas with canopy gaps.

5. Be careful working around brush piles or other debris. Use a rake or long handled tool to move brush, debris, or other material before picking it up.

6.Never handle venomous snakes, alive or dead.

7 Leave snakes alone. Many bites occur when people attempt to capture or kill venomous snakes If bitten by a venomous snake, immediately contact the Manjand Poison Center at 800-222-222. The Manjane Poison Center is open at Navira a day and is stated by pharmacits or not apply ice, a tourniquet, or make an incision around the wound as these methods do not work and may cause complications.



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#### Ranavirus

- •Viruses that impact cold-blooded animals •Larval wood frogs, spotted salamanders and marbled salamanders have experienced the most
- mortality •1<sup>st</sup> significant box turtle die-off in Maryland in 2008

2008 •Disinfection of equipment (boots, waders, etc)

before entering wetlands is recommended

• Protocol: http://northeastparc.org/disinfection-protocol/



Eastern box turtle w/ Ranavirus by Scott Farnsworth

# For Additional Information

