

Maryland Envirothon: Class Mammalia

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WILDLIFE AND HERITAGE
SERVICE



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Mammalia Overview

- > 100 species in Maryland
- Extirpated species include:
 - American elk
 - American martin
 - Gray wolf



American elk by Kerry Wixted

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

Virginia Opossum (*Didelphis virginiana*)

- Omnivore
- Marsupial
 - Prehensile tail
- Low body temperature
- Immune to snake venom



Order: Rodentia

- Largest group of mammals
- 26 species in Maryland
 - Castoridae (beaver)
 - Erethizontidae (porcupine)
 - Muridae (mice and rats)
 - Myocastoridae (nutria)
 - Sciuridae (squirrels)
- Teeth never stop growing



Rodent skulls and gray squirrel by Kerry Wixted

Semi-aquatic Rodents

By Keith Williams CC by NC ND 2.0



Castoridae: American Beaver
(*Castor canadensis*)

Head & body= 2-3'; tail= 1'

Scaly, paddle-shaped tail; 1 hump visible when swimming (usual)



Muridae: Common Muskrat
(*Ondatra zibethicus*)

Head & body= 12"; tail= 9"

Flattened tail; 3 humps visible when swimming (usual)



Myocastoridae: Coypu (Nutria)
(*Myocastor coypus*)

Head & body= 22"; tail= 13"

Squared-off head w/ white whiskers; rounded tail; **invasive**

Family Sciuridae

- 7 species in Maryland
- Includes chipmunk, tree squirrels, flying squirrel, and woodchuck
- Largest= woodchuck (*Marmota monax*)



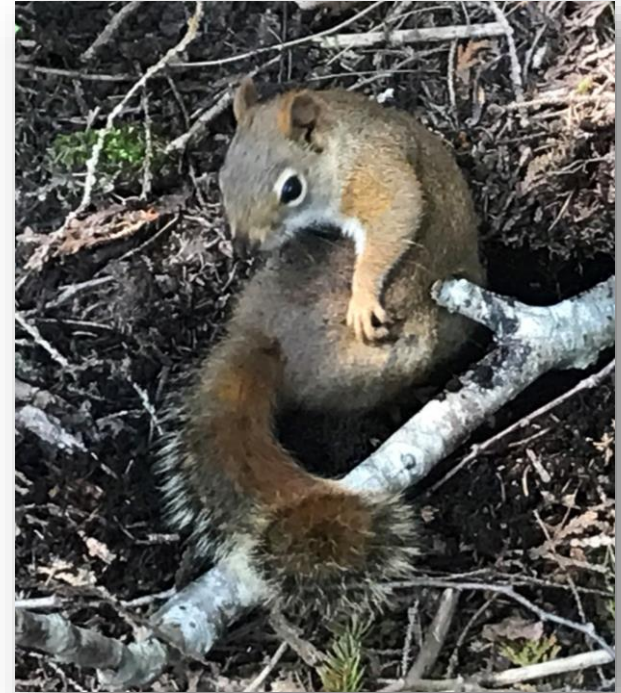
Woodchuck by Kerry Wixted

Red Squirrel (*Tamiasciurus hudsonicus*)



Photo by Matt Tillett CC by NC 2.0

- Head & body= 7" and tail = 5"
- Belly and eye ring white
- Ears tufted in winter
- Tail tipped in orange
- Prefers conifer forests



By Kerry Wixted

Sciurus- tree squirrels with diurnal habits



Eastern Gray Squirrel
(*Sciurus carolinensis*)

Head & body= 9-11.2"; tail= 6-10"

Upperparts gray with yellow-brown on back and head; eye ring white or pale orange; belly white



Eastern Fox Squirrel
(*Sciurus niger niger*)

Head & body= 10-14.5"; tail= 8-13"

Belly, cheeks, eye-ring, and feet orange to rusty brown



Delmarva Fox Squirrel
(*Sciurus niger cinereus*)

Head & body= 10-14.5"; tail= 8-13"

Gray above; belly white; cheeks and eye-ring cream; lower legs and feet white; rare

Order: Eulipotyphla

- Formerly Soricimorpha (and Insectivora!)
- 11 species
 - Soricidae (shrews)
 - Talpidae (moles)
- Small w/ long, narrow snouts
- Have 5 toes on front and hind feet



Mole By Mikiwikipikidikipedia at en.wikipedia, CC BY 2.5

Northern Short-tailed Shrew (*Blarina brevicauda*)

- Head & body= 4"; tail =1"
- Small eye, tiny ears, short tail
- Must eat 3x its weight/day
- Toxic saliva
- Echolocation



Shrews have pigmented teeth By Goran tek-en, CC BY-SA 4.0

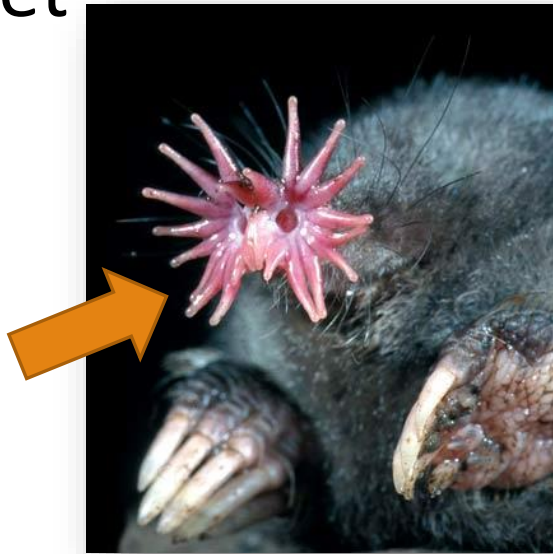
By Giles Gonthier, CC BY- 2.0



Talpidae: Moles

- 3 species
 - Eastern mole
 - Hairy-tailed mole
 - Star-nosed mole
- Large front feet
- Worms = ❤️

The star-nosed mole (*Condylura cristata*) is uncommon in Maryland. It has 22 finger-like appendages on its nose.



By kinskarije, CC BY-NC-ND 2.0



The eastern mole does not have a hairy tail. This is the most common species in Maryland.

Order: Chiroptera

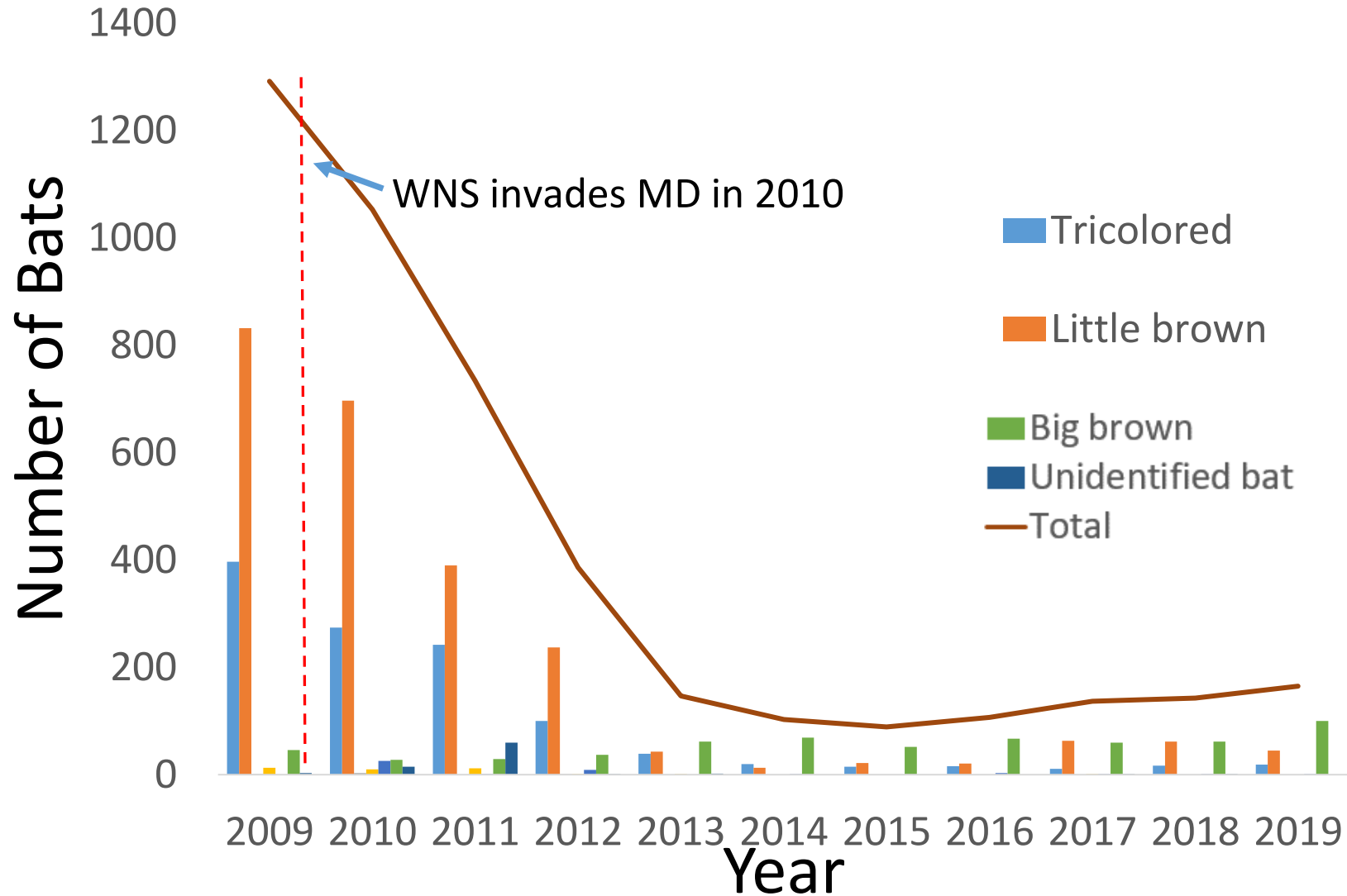
- Bats
 - Only flying mammals
- Family: Vespertilionidae
 - 10 species in Maryland
 - Insectivores
 - Some hibernate, some migrate
- Many declining due to white-nose syndrome



Eastern red bat By Billy Liar, CC BY NC SA- 2.0

White-Nose Syndrome in MD

Dan Feller, MD DNR (2019)



Order: Carnivora

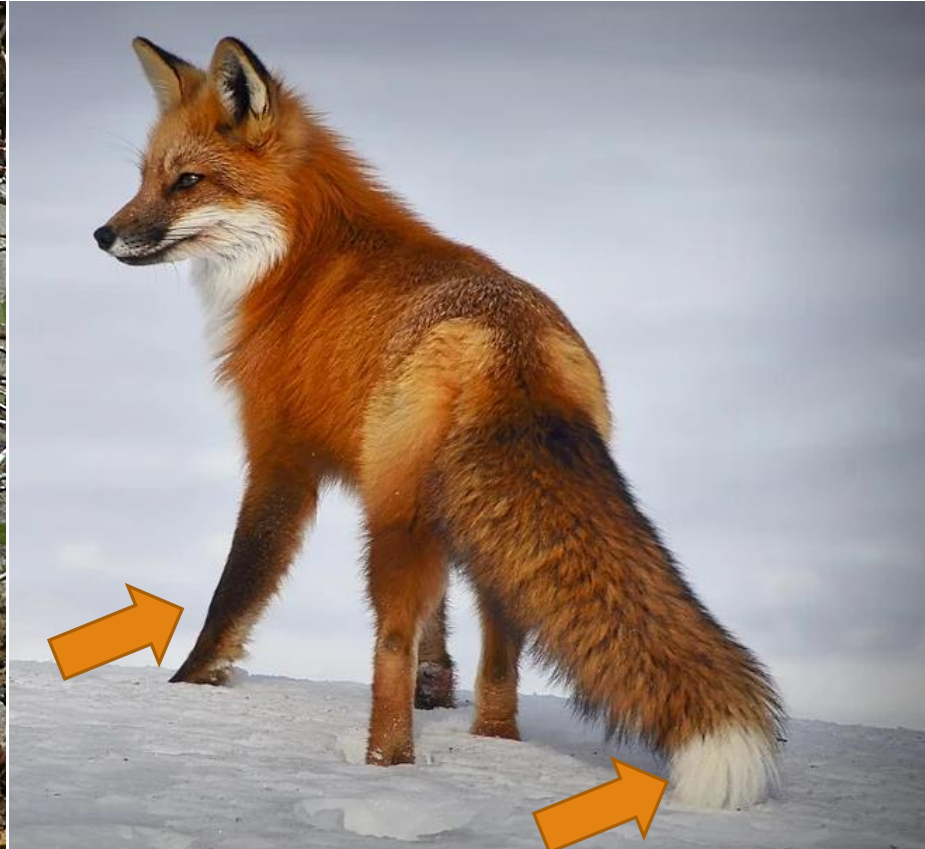
- 22 species in Maryland
 - Canidae (canines)
 - Felidae (cats)
 - Mephitidae (skunks)
 - Mustelidae (weasels)
 - Phocidae (seals)
 - Procyonidae (raccoon)
 - Ursidae (bears)



Canidae: Foxes



Gray fox (*Urocyon cinereoargenteus*)
Black tip on end of tail



Red fox (*Vulpes vulpes*)
White tip on end of tail; dark marks on legs and ear tips

Eastern Coyote (*Canis latrans*)

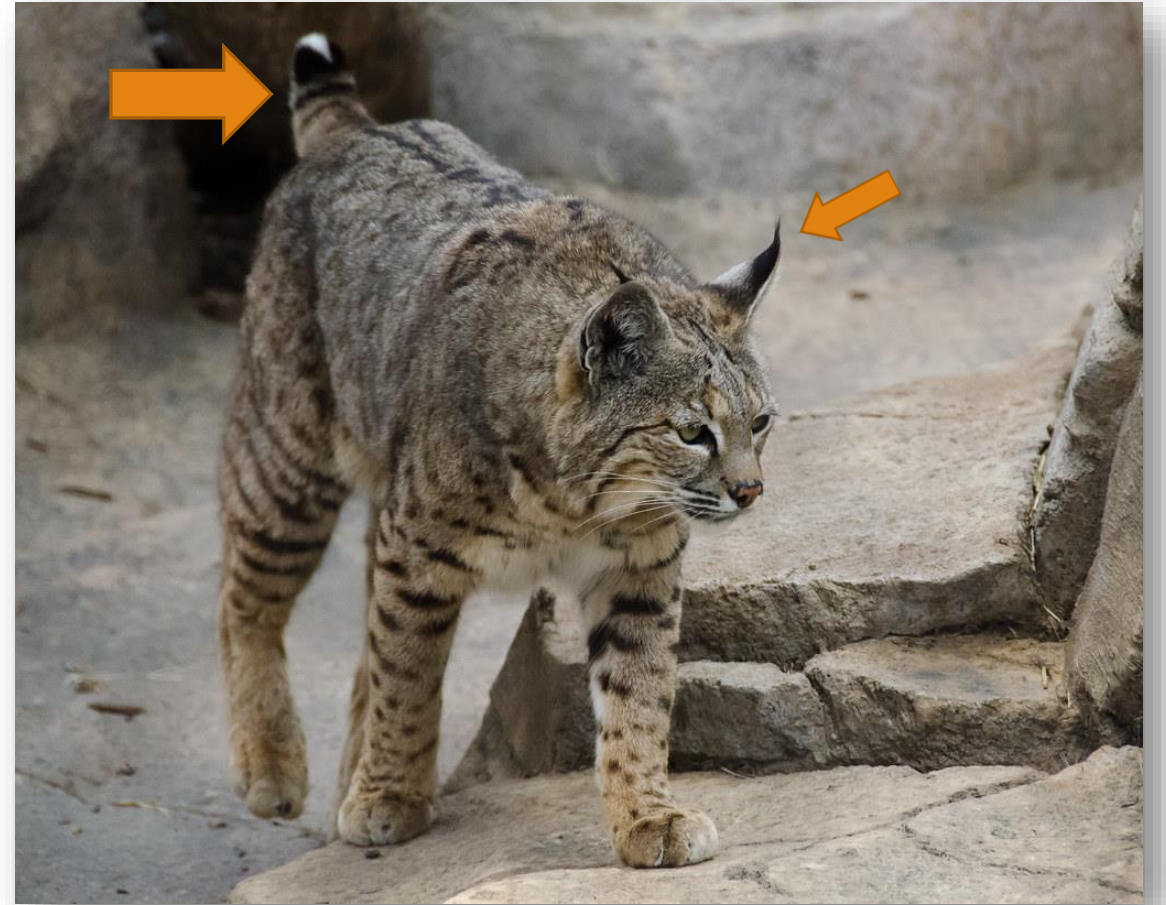
- First documented in MD in 1972
- Omnivore
- Identification:
 - Large ears and narrow muzzle
 - Color can be variable
 - Black tip on end of tail



By VJAnderson - Own work, CC BY-SA 4.0

Felidae

- Bobcat (*Lynx rufus*) only extant species in Maryland
 - Head & body ~ 3ft w/ 4-8" tail
 - Color and pattern variable
 - Has ear tufts and striped legs
 - Mainly nocturnal
- Eastern cougar (*Puma concolor cougar*) declared extinct



Bobcat by skepticalview CC by NC ND 2.0

Mustelidae

- 5 extant species in Maryland
- Long, slender bodies w/ short legs
- Well-developed anal scent glands



American Mink (*Mustela vison*)

Mustelids



American Mink (*Mustela vison*)

Head & body- 12-16", tail 5.5-8"; Dark brown with white on chin and chest; usually near water

By Nicole Beaulac CC BY-NC ND 2.0



Fisher (*Martes pennanti*)

Head & body- 17-31", tail 12-16"; Large and dark; head and shoulders grizzled; prefers coniferous or deciduous- conifer forests

By Forest Wander CC BY-SA 2.0

Northern River Otter (*Lontra canadensis*)

- Head & body= 26-31" w/ 12-20" tail
- Feet broad and webbed
- Upperparts brown and belly silvery
- Strong swimmer
- Eats fish, crayfish, frogs, etc



By Maureen Lemire MD DNR Photo Contest

Phocidae

- 4 species in Maryland
- Lack external ears
- Hind flippers face back & front flippers are small
- Mostly found along Atlantic coast in Maryland but can travel up Bay
- Protected under the Marine Mammal Protection Act



Juvenile Harp Seal (*Pagophilus groenlandicus*)

Adult males have black face and black horseshoe-shaped patch on back. Adult females have similar markings though lighter.

Order: Artiodactyla

- Even-toed ungulates
- 2 species in Maryland
- Cervidae:
 - White-tailed deer
 - Sika deer



Cervids



Sika Deer (*Cervus nippon*)

Coat usually reddish-brown and spotted in summer, dark brown in winter; midline of back black; white rump patch; **introduced**

By Stephen Aprile MD DNR Photo Contest



White-tailed Deer (*Odocoileus virginianus*)

Coat usually grayish in winter and reddish-brown in summer; adults lack spots; tail long with white underside

By Dechun Feng MD DNR Photo Contest

Rabies

- Top 5 species: Raccoons, cats, foxes, skunks, bats
- Passed through saliva
- Disorientation, incoordination and staggering, paralysis of the hind legs
- Do not approach; secure people & pets; call animal control
- Contact Health Dept if exposure suspected



Laboratory Confirmed Rabies in Maryland by Species, 2019		
Species	Total	%
Bat	19	7%
Cat	14	5%
Cow	1	0%
Dog	0	0%
Fox	32	12%
Groundhog	3	1%
Raccoon	182	69%
Skunk	11	4%
Sheep	1	0%
Ferret	1	0%
Goat	1	0%
Total	265	100%

Data through December 28, 2019

Laboratory Confirmed Rabies in Maryland by Species, 2020		
Species	Total	%
Bat	5	4%
Cat	17	13%
Cow	0	0%
Dog	0	0%
Fox	12	9%
Groundhog	2	2%
Raccoon	92	71%
Skunk	1	1%
Coyote	1	1%
	0	0%
	0	0%
Positive	130	100%

Data through June 22, 2020

For Additional Information

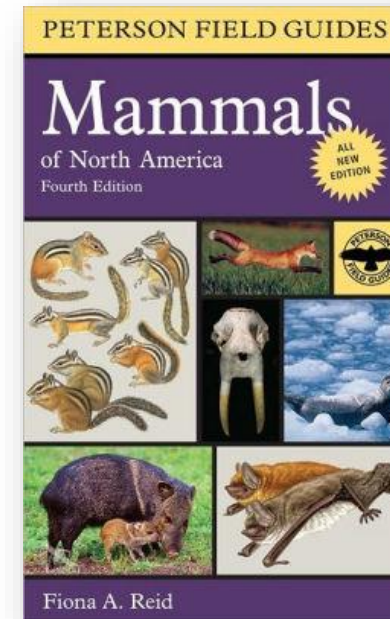
For more information on Maryland's mammals, please visit our webpage at: dnr.maryland.gov/wildlife Additional information can be found in the following resources.

Book Resources:

- Peterson Field Guide to Mammals of North America, 4th Ed

Online Resources:

- [Maryland Envirothon \(Wildlife and Heritage Service\)](#)
- [Mammals of Maryland \(MD DNR\)](#)
- [Maryland Biodiversity Project \(Mammals\)](#)



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