

# Maryland Envirothon: Class Mammalia

KERRY WIXTED  
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.

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## Virginia Opossum (*Didelphis virginiana*)

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



Order: Didelphimorphia; Family: Didelphidae

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## 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

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Order: Rodentia

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## Semi-aquatic Rodents



**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**

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Order: Rodentia

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## Family Sciuridae

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



Woodchuck by Kerry Wixted

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Order: Rodentia; Family Sciuridae

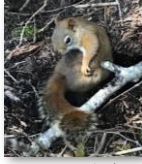
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### Red Squirrel (*Tamiasciurus hudsonicus*)



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

Order: **Rodentia**; Family **Sciuridae**

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### 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: **Rodentia**; Family **Sciuridae**

By Tracie Hall CC by SA 2.0

By Steve Drotter/Cheapeake Bay Program CC by NC 2.0

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### 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

Order: **Eulipotyphla**

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**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

Order: Eulipotyphla; Family Soricidae

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**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 kirokanje, CC BY-NC-ND 2.0



Order: Eulipotyphla; Family Talpidae

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**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

Order: Chiroptera; Family Vespertilionidae

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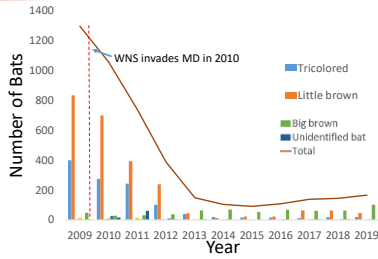
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## White-Nose Syndrome in MD

Dan Feller, MD DNR (2019)



Order: Chiroptera; Family Vespertilionidae

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## Order: Carnivora

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



Order: Carnivora

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## 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

Order: Carnivora; Family Canidae

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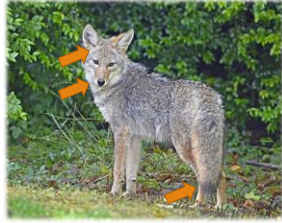
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### Eastern Coyote (*Canis latrans*)

- 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

Order: Carnivora; Family Canidae

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### 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

Order: Carnivora; Family Felidae

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### Mustelidae

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



American Mink (*Mustela vison*)

Order: Carnivora; Family Mustelidae

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### 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

Order: Carnivora; Family Mustelidae

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### 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

Order: Carnivora; Family Mustelidae

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### 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: Carnivora; Family Phocidae

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## Order: Artiodactyla

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



Order: Artiodactyla; Family Cervidae

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## 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 Aprilie 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

Order: Artiodactyla; Family Cervidae

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## 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			Laboratory Confirmed Rabies in Maryland by Species, 2020		
Species	Total	%	Species	Total	%
Bat	15	7%	Bat	31	4%
Cat	14	5%	Cat	13	23%
Deer	2	0%	Deer	0	0%
Dog	0	0%	Dog	0	0%
Fox	32	17%	Fox	13	9%
Groundhog	0	0%	Groundhog	2	3%
Raccoon	162	83%	Raccoon	53	71%
Skunk	13	4%	Skunk	2	3%
Sheep	1	0%	Coyote	0	0%
Porret	1	0%		0	0%
Squirrel	1	0%		0	0%
<b>Total</b>	<b>203</b>	<b>100%</b>	<b>Positive</b>	<b>130</b>	<b>100%</b>

Data through December 28, 2019. News through June 27, 2020.

<https://dhsa.health.maryland.gov/OIGIOP/CVWD/pages/Data-and-Statistics.aspx>

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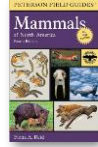


## For Additional Information

For more information on Maryland's mammals, please visit our webpage at: [dnr.maryland.gov/wildlife](http://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 Environment \(Wildlife and Heritage Service\)](#)
- [Mammals of Maryland \(MD DNR\)](#)
- [Maryland Biodiversity Project \(Mammals\)](#)



Larry Hogan, Governor      Jeanie Haddaway-Riccio, Secretary  
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