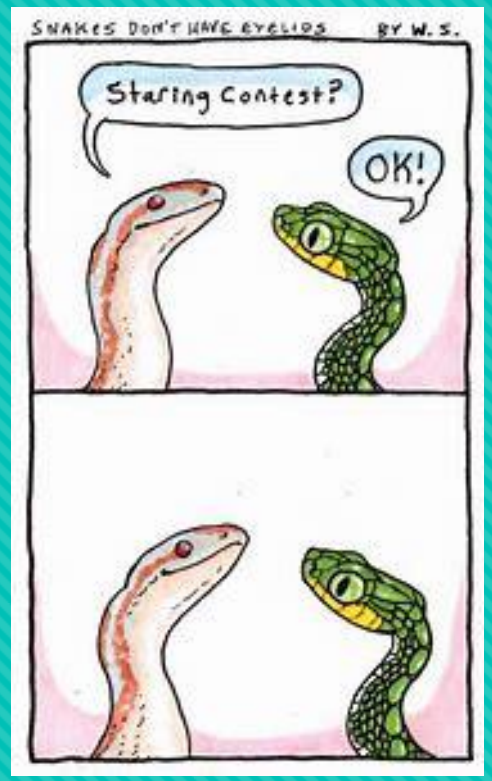


Snakes of Wisconsin

Presented by Alyssa Hoekstra

WISCONSIN DEPT. OF NATURAL RESOURCES

Reverence of Snakes in Many Cultures

Symbolizes rebirth, renovation, fertility, protection, death, or mortality

Asclepius, Greek god of healing, revered snakes, and Zeus took the form of a serpent to create Alexander the Great

In Fiji, a serpent god ruled the underworld and caused fruit trees to bloom

Ophidiophobia

Fear of snakes

Perpetuated by myths and learned behavior

Associated with mythologies and religious beliefs

2 studies in the1980s conducted human behavioral reactions to snakes on roads

State bounties and rattlesnake roundups










Reasons for Global Snake Population Declines

Habitat loss and degradation

Introduced invasive species

Environmental pollution

Disease

Unsustainable use

Climate change

Butler's Gartersnake

Thamnophis butleri

SPECIAL CONCERN

Smallest of the 5 gartersnake species

Looks similar to the Plains Gartersnake and hybridizes with it

Specializes almost exclusively on earthworms

Plains Gartersnake

Thamnophis radix

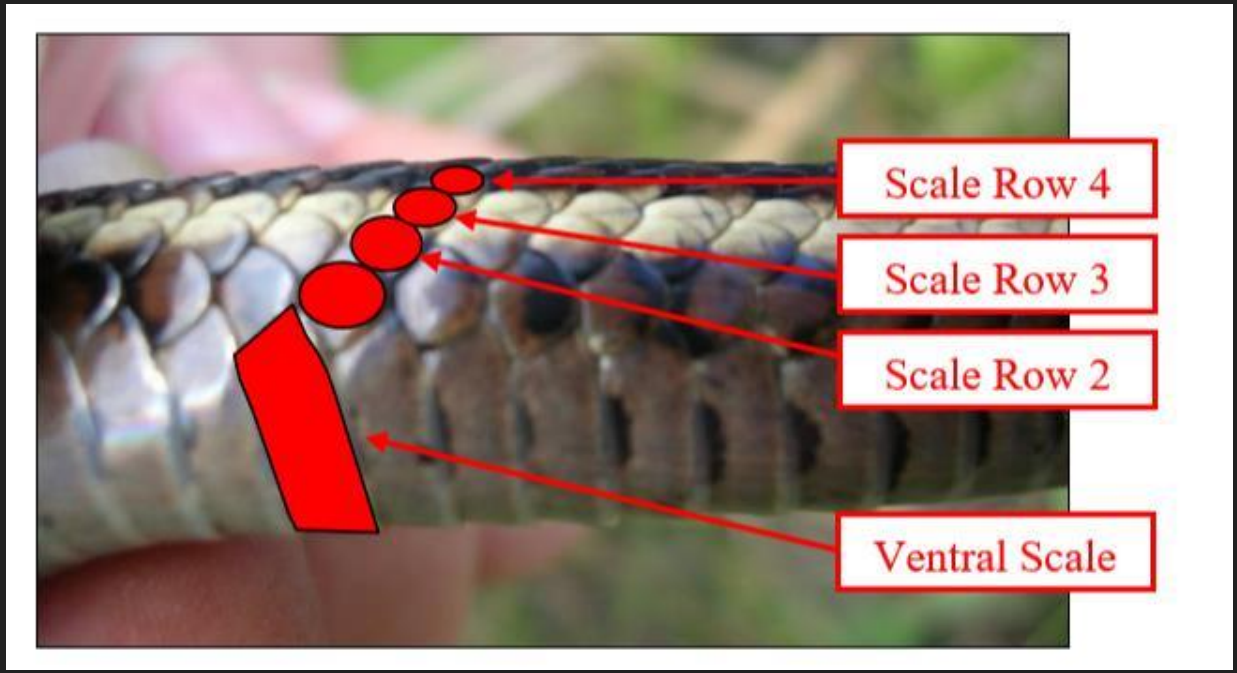
Associated with habitat along streams, and marsh and cattail ponds of wetlands

Feed on insects, earthworms, frogs, toads, small fish, and mammals

SPECIAL CONCERN

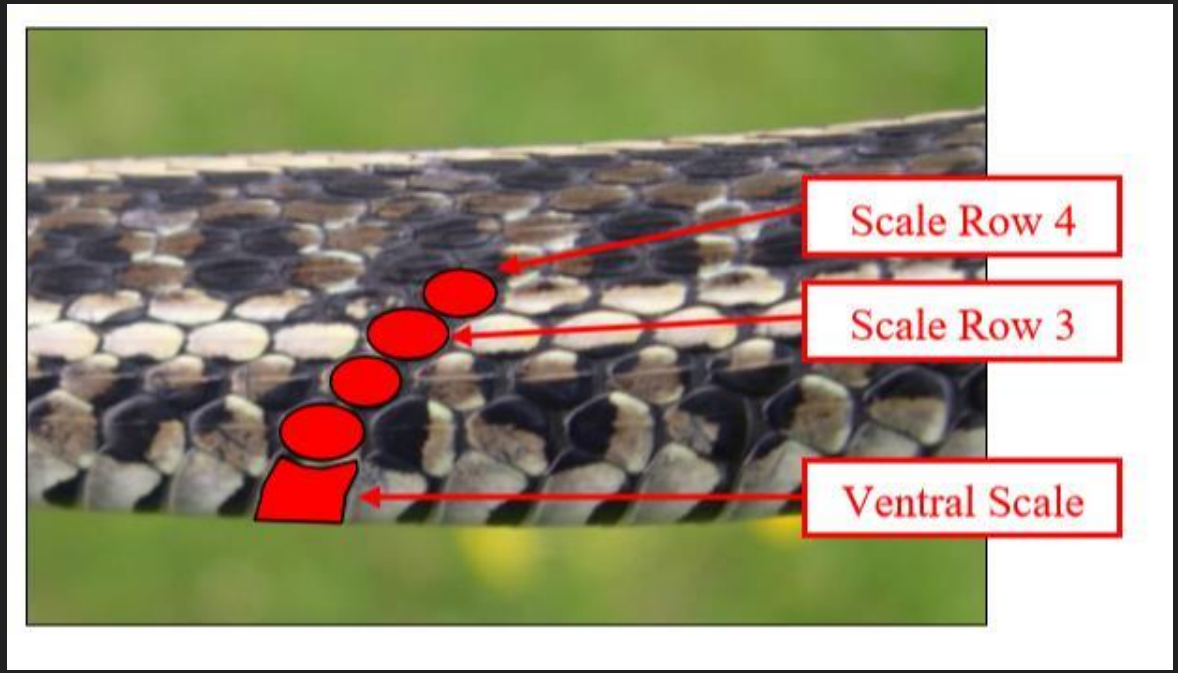
Butler's Gartersnake

Thamnophis butleri



Plains Gartersnake

Thamnophis radix



Eastern Ribbonsnake

Thamnophis sauritus

ENDANGERED

Western Ribbonsnake

Thamnophis proximus

Eastern Ribbonsnake

Thamnophis sauritus

ENDANGERED

Prefer vegetation bordering waterways, remaining within 10 m of wetlands and waterbodies throughout the summer

Known to overwinter in ant hills, cray fish burrows, and small mammal burrows

The tail makes up 1/3rd of body

Possible reasons for decline: hydrological alterations, habitat destruction and roadways, road contaminants, or possibility of road substrates interfering with pheromones for breeding

ENDANGERED

Western Ribbonsnake

Thamnophis proximus

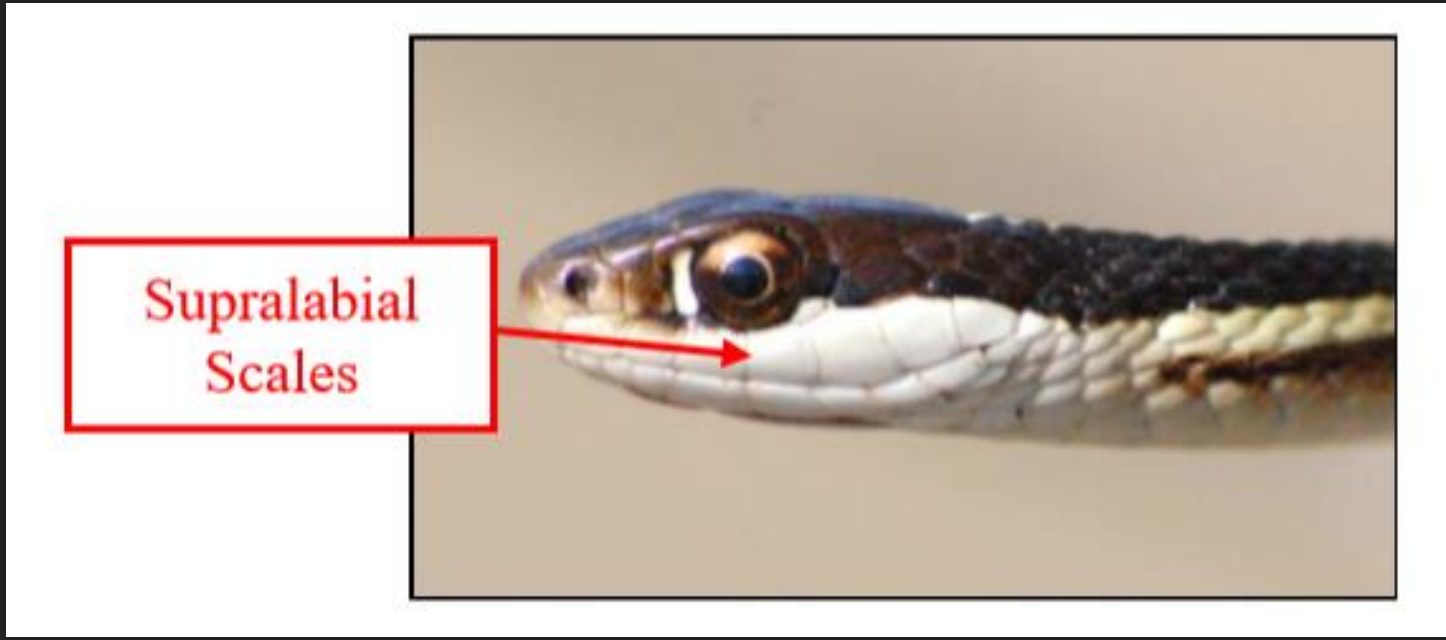
Strongly prefer brushy habitat near aquatic environments and bordering vegetation

Occur in relict populations throughout the state

Diet primarily consists of amphibians but also lizards, fish, and crayfish

Extremely sensitive to modification and habitat disturbance caused by humans

Is it a ribbonsnake or a gartersnake?



Is it an eastern ribbonsnake or a western ribbonsnake?

COMMON

Common Watersnake

Nerodia sipedon

Prefer clear rivers, found in Great Lakes region

Found in urban areas in close proximity to people

Found throughout the state

Studies have shown they persist in urban environments by using artificial structures to avoid direct contact with people

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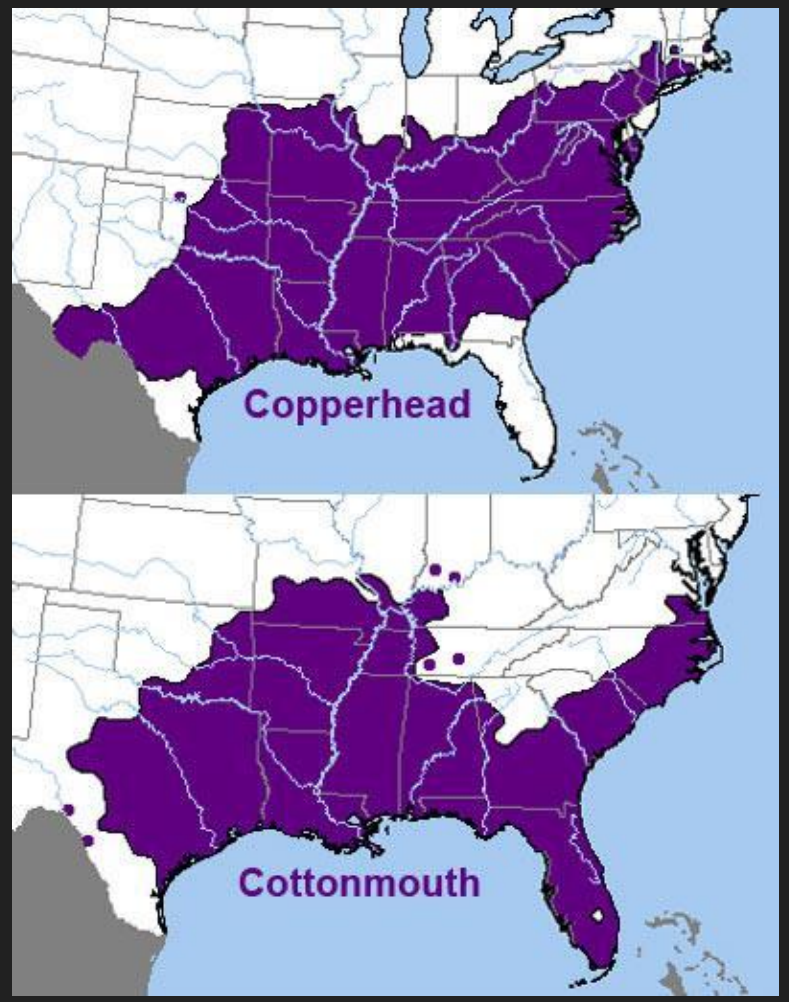
Can you tell the *difference*?

Northern watersnake or Common watersnake

Copperhead

Cottonmouth or Water moccasin



Copperhead

Cottonmouth or Water moccasin

Gray (Black) Ratsnake

Pantherophis spiloides

Occupies floodplains along 3rd order streams or higher

Mainly eats birds, eggs, and small rodents

SPECIAL CONCERN

Queensnake

Regina septemvittata

ENDANGERED

Prefer clear warm water streams and small rivers

Associated with moderate to fast water flows and rocky substrates

Crayfish specialist

Overwinters in crayfish burrows

Mercury accumulation threatens them indirectly by damaging crayfish populations

Possible implications from non-native Rusty Crayfish

COMMON

Red-bellied Snake

Storeria occipitomaculata

Size: 8 – 10 inches

Found throughout the state

Uses margins of small wetlands

Diet consists of slugs, earthworms, crickets, soft-bodied insects, larvae, and other invertebrates

Only 2 species of venomous snakes found in Wisconsin

Timber rattlesnake

Eastern massasauga rattlesnake

Timber rattlesnake

Eastern massasauga rattlesnake

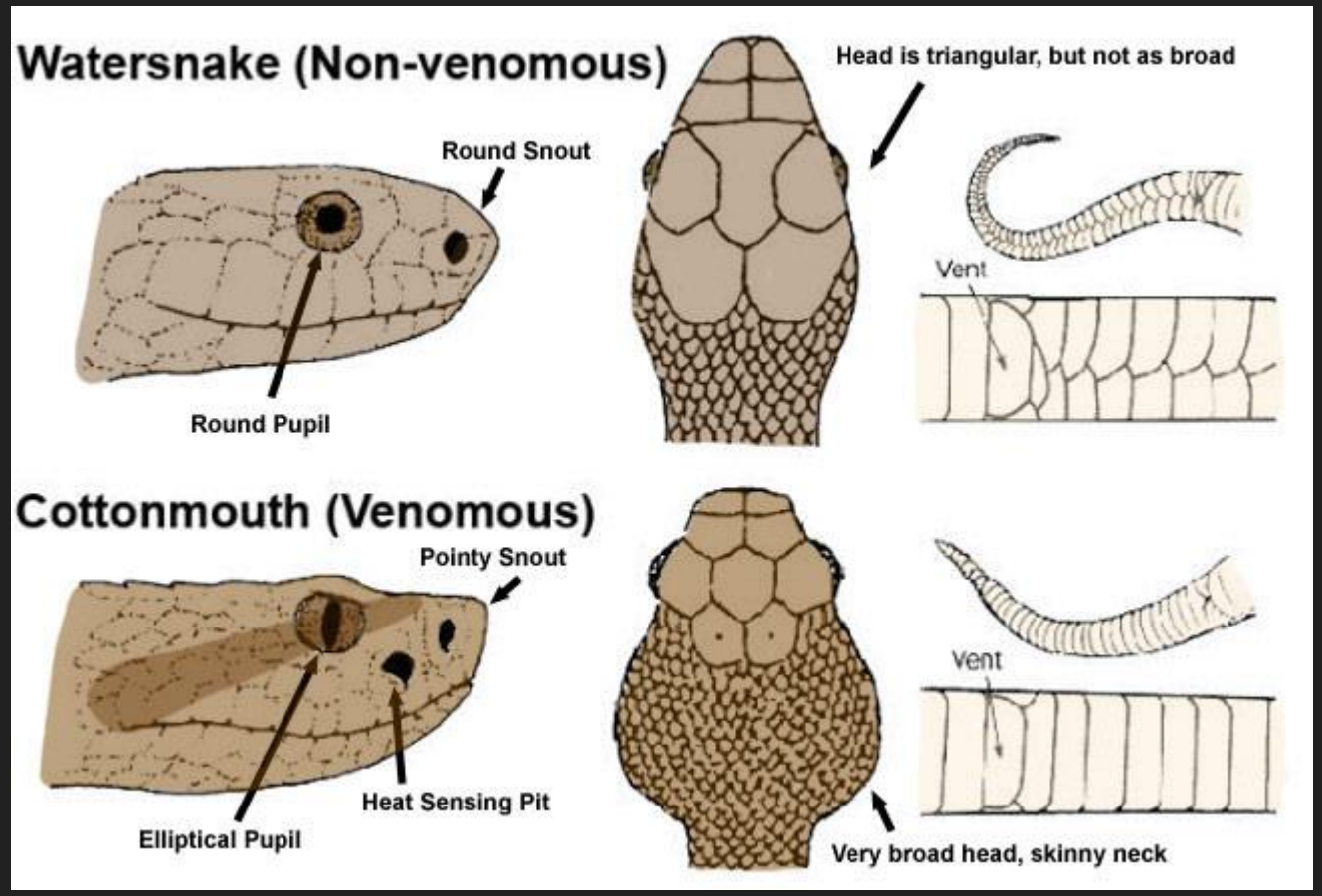
Not to be confused with:

Eastern milk snake

Eastern fox snake

Eastern hognose snake

Is the snake *harmful*?



Distinguishing Features

Pupil shape (except coral snakes)

Snout shape (except coral snakes)

Head shaped

Scale patterning

Rattle present on all rattlesnakes

Heat sensing pits – all rattlesnakes, cottonmouths, copperheads

Problems with recognizing distinguishing features

Defensive posturing of non-venomous snakes

Head flattening mimics triangle and broad shape of venomous species

Tail vibration mimics sound of rattle

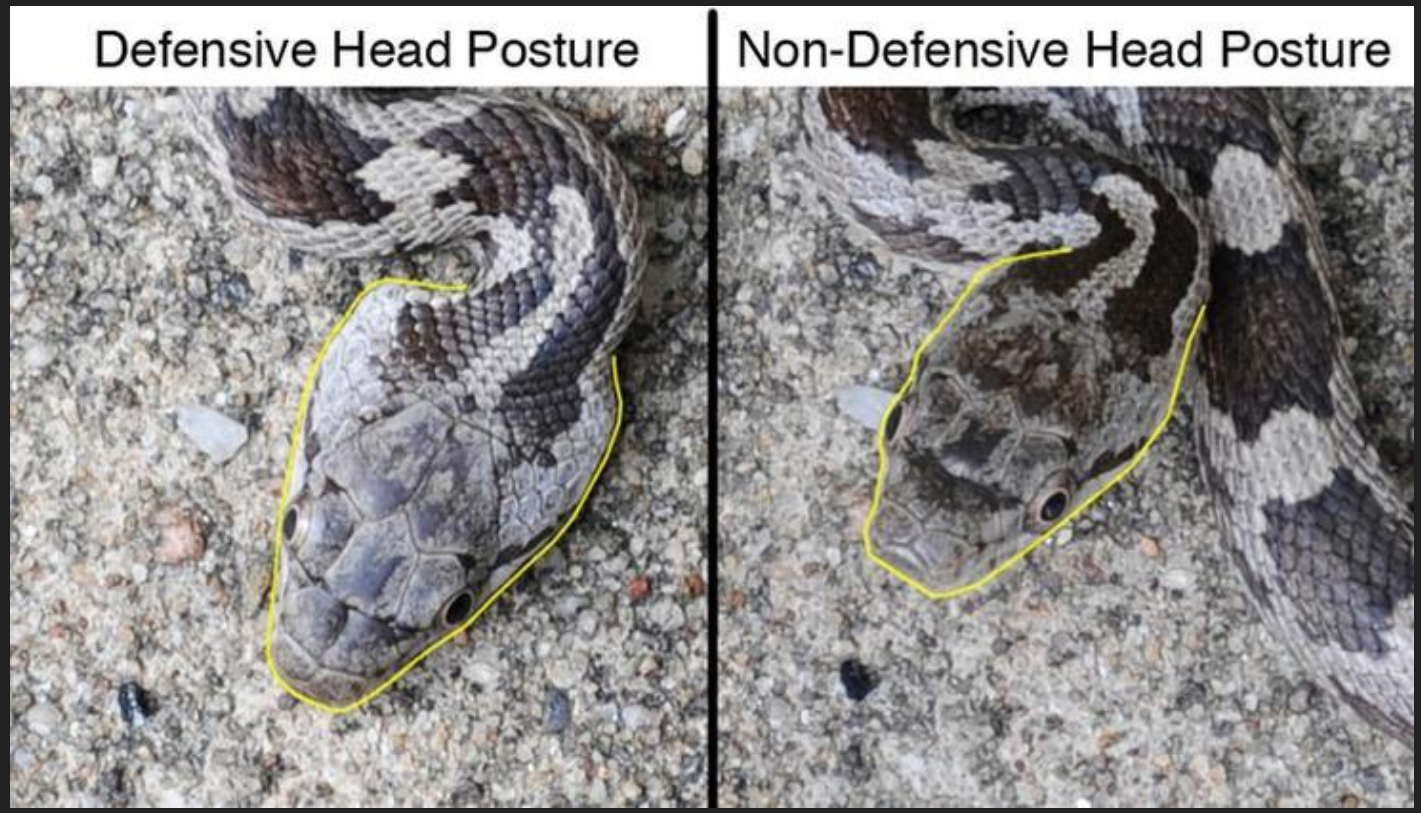
Problems with recognizing distinguishing features

Defensive posturing of non-venomous snakes

Head flattening mimics triangle and broad shape of venomous species

Northern watersnake or Common watersnake

Tail vibration mimics sound of rattle



Gray ratsnake

Problems with recognizing distinguishing features

Defensive posturing of non-venomous snakes

Head flattening mimics triangle and broad shape of venomous species

Tail vibration mimics sound of rattle

Eastern Massasauga Rattlesnake

Sistrurus catenatus

ENDANGERED

Size: 20 - 32 inches

Use open-canopy wetlands

Mainly eat small mammals

Relatively docile, rarely rattles

Threats: disease, human-induced mortality, raising of the water table due to damming of rivers and streams, increased flooding

SPECIAL CONCERN

Timber Rattlesnake

Crotalus horridus

Associated with floodplain forests

Mainly eats small mammals

Maryland study estimates they consume on average 2,500 – 4,500 ticks a year

Relatively docile, rarely rattles

Threats: disease, human-induced mortality, habitat fragmentation

Snake Fungal Disease

Ophidiomyces ophiodiicola

First detected in a timber rattlesnake population in New Hampshire in 2006

Since 2006, has been found in 30 species in 23 states

Appears as small lesions and nodules on head and along body

Wisconsin Documentation of Snake Fungal Disease

1990s — anecdotal reports of "hibernation scars" or "blisters"

2011 — first clinical signs found in snakes

2013 — first confirmed biopsy of *Ophidiomyces ophiodiicola* in a foxsnake from Outagamie County

2014 & 2015 — 10 counties were surveyed at overwintering locations of snake Species of Greatest Conservation Need

Wisconsin Documentation of Snake Fungal Disease

2015 surveys found 54 of 138 snakes to show clinical signs (39% prevalence rate)

Currently, 8 counties have confirmed Snake Fungal Disease with an additional 6 counties having snakes with clinical signs or suspected to have Snake Fungal Disease

11 species out of 22 snake species have been found with signs

Wisconsin Snake Fungal Disease Reports 2011 - present

"Pay It Forward" by helping report Snake Fungal Disease

Report a snake with signs of this disease

Citizens, researchers and biologists are encouraged to report all snakes with signs of this disease. If you see an infected animal, please note the following:

- date;
- exact location;
- species;
- symptoms; and
- photographs of lesions, bumps or scabs.

Help monitor the health of Wisconsin's wildlife by reporting your sightings of sick or dead snakes to your local DNR office or Email the Wisconsin DNR.

Submit a snake for testing

Follow these steps to submit a snake for diagnostic evaluation to confirm infection. Samples for diagnostic testing are accepted on a case-by-case basis.

1. Email the Wisconsin DNR for referral to the National Wildlife Health Center (NWHC)
2. After corresponding with the DNR and prior to submitting samples, email the NWHC

Visit https://dnr.wi.gov/topic/endangeredresources/snakefungal.html


Questions?