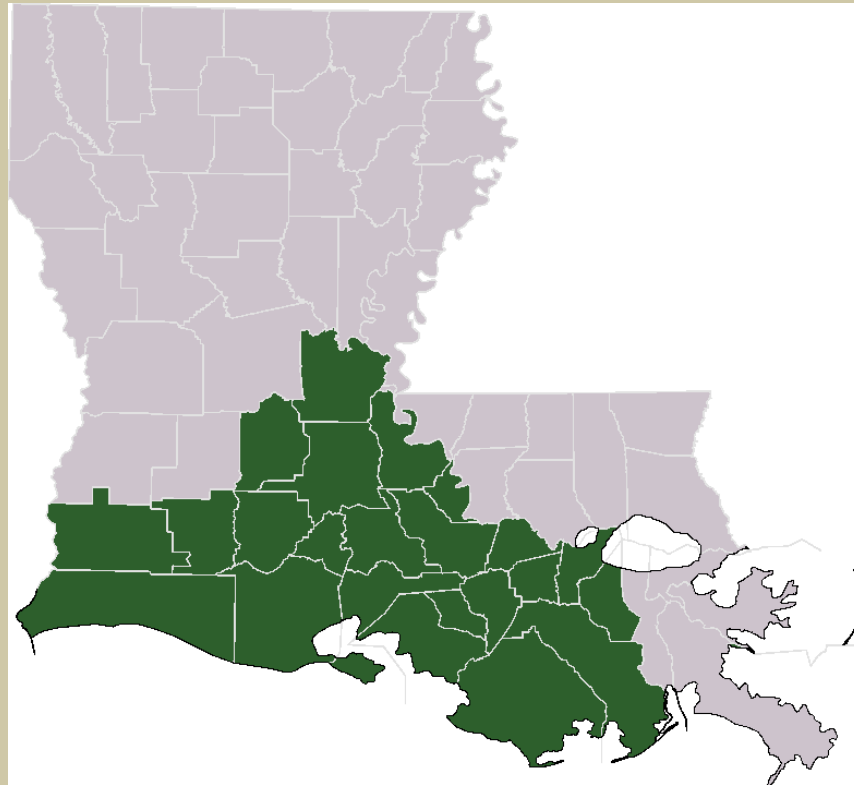


Identification and Natural History of Snakes of Acadiana

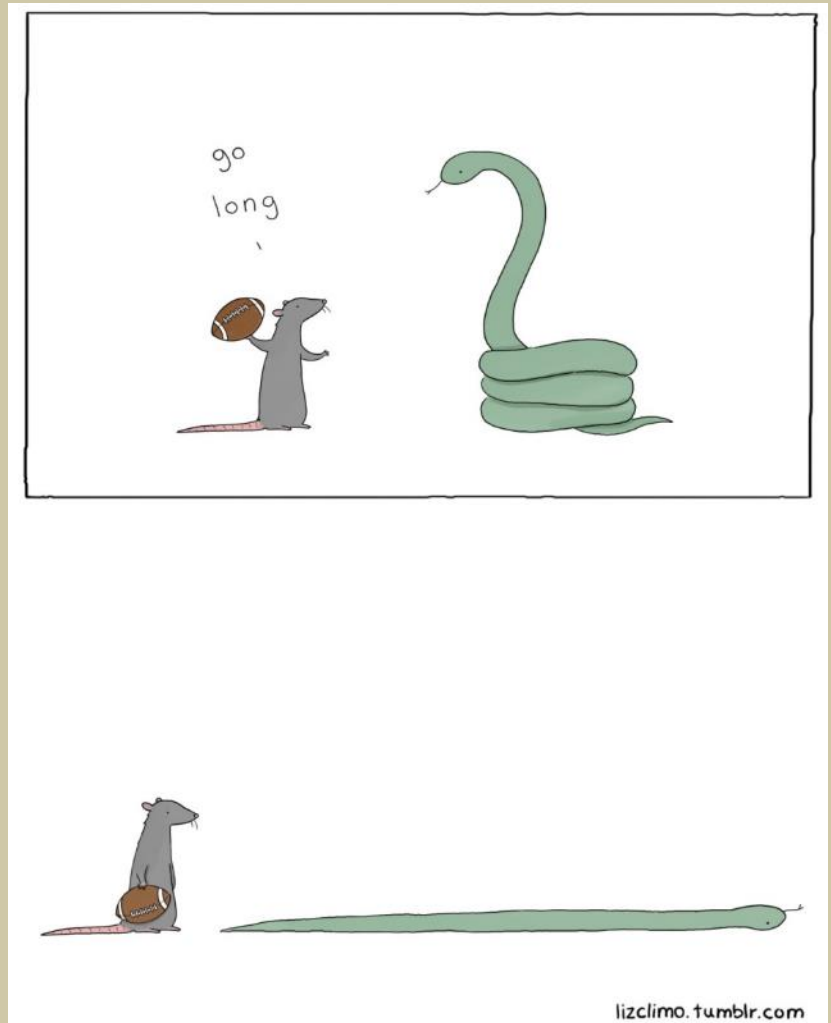
with comments on benefits of snakes, myths and misconceptions,
snakebite and snakebite prevention, and reducing snake encounters



Brad “Bones” Glorioso

Acknowledgments

- The blog of a friend and herpetologist, Lisa Powers



Pre-quiz!



Is this snake venomous?

ANSWER:
NO!



Is this snake venomous?

ANSWER:
NO!

Objectives

- To better understand roles snakes play in nature
- To dispel common myths and misconceptions about these important creatures
- To help identify snakes common to area that you may come across
- To help distinguish between venomous and nonvenomous snakes
- To educate on snakebite and prevention

Poisonous vs. Venomous



Poisonous vs. Venomous

POISONOUS



POISON DART FROGS



SEA SLUGS



TOADS



SALAMANDERS



SOME GRASSHOPPERS



PUFFER FISH



CUBAN LAND SNAILS



PITOHUI BIRDS



SOME BUTTERFLIES

VENOMOUS



WASPS



SCORPIONS



GILA MONSTERS



SPIDERS



VIPERS



CENTIPEDES



JELLYFISH



CONE SNAILS



MALE PLATYPUSES

Fun Fact

- The Asian Tiger Snake, *Rhabdophis tigrinus*, (AKA Yamakagashi, Tiger Keelback Snake) sequesters toxins from the toads it eats, and can secrete them special glands on the neck.
- The Asian Tiger Snake is also a rear-fanged venomous snake, and is therefore both poisonous and venomous.
- Asian Tiger Snakes that live in toad-free environments lack the poison.
- This species is the only known example of a poisonous and venomous snake, though other members of *Rhabdophis* are being investigated for this trait.



Good Snakes are Dead Snakes?

- The 'only good snake is a dead snake' line is a tired and uninformed view of these important animals.
- If we were to replace 'snake' with something like a dog, cat, horse, panda, or manatee, how would your reaction be?
- Many people, including myself, are passionate about these animals, as much as you may be to one of the above, and to hear that line all too often is so incredibly saddening and frustrating.

What good is a snake?

- If you need specific examples of benefits to you (i.e. humans) of why we should conserve a part of the natural environment...
- Eptifibatide & Tirofiban – halts heart attacks if given within first 3 hrs of symptoms
 - Developed from the venom of the African Saw-scaled Viper



What good is a snake?

- Ancrod helps prevent deadly stroke-causing clots during difficult surgeries.
 - Developed from the venom of the Malayan Pit Viper
- A protein, contortrostatin, found in the venom of Copperheads is showing much promise in treating breast cancer.
- Black Mamba venom is being studied for the treatment of brain injuries, strokes, and diseases such as Alzheimer's and Parkinson's.



What good is a snake?

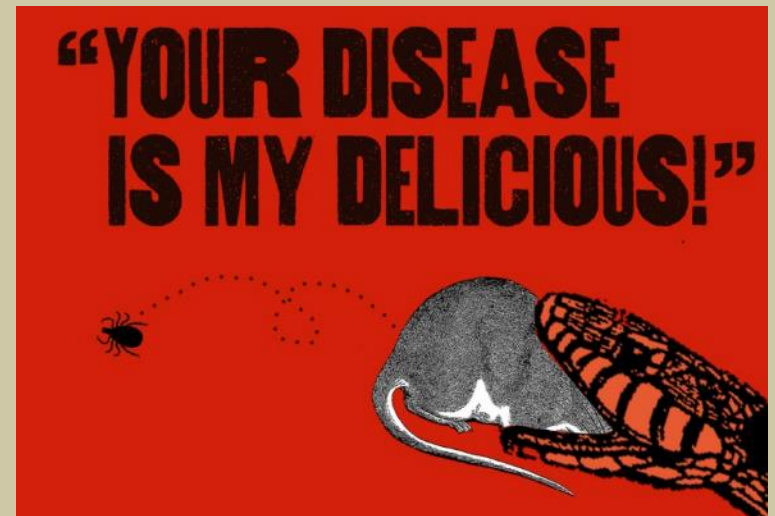
- Pest Control
 - Food Security
 - Best form of rodent control, can go where rodents go
 - Crop loss and ruination of stored grain by rodents and their excrement can range upwards to 100%
 - Meat animals rely on these crops
 - Grow your own food?
 - Many of our native smaller snakes feed on slugs, snails, and other garden pests (non-toxic and free pest control)

What good is a snake?

- Snakes could help protect your home from fire and other damage.
 - About 20% of house fires in U.S. of unknown origin can be attributed to damage caused by rodents chewing on wiring and other electrical components
 - Rodents may also cause structural and other damage to your home
- Rodent poison is toxic and not something you may want around children and pets.

What good is a snake?

- Hanta Virus
 - Fatal without prompt medical attention
 - Main host is rodents
- Rodents carry many other diseases that can be transmitted to humans
 - Rabies, plague, lymphocytic choriomeningitis virus, leptospirosis, salmonellosis, tuberculosis
 - Tick-borne diseases as well, like Lyme Disease and Rocky Mountain Spotted Fever



What good is a snake?

- Hunt or Fish?
 - Snakes affect the quality and numbers of game animals available.
 - Ex. Large Timber Rattlesnakes like to eat squirrels, which bury nuts, seeds, and acorns in preparation for winter. Deer and turkey are then deprived of much of these foods.
 - They help to prevent diseases in game animals and promote stronger stock by weeding out, weak, diseased or old individuals.

What good is a snake?

- Nature is a system of checks and balances.
 - If you remove one component, the balance shifts in favor of another.
- In the U.S., it is easy to learn the venomous snakes from the nonvenomous ones and how to reduce human-snake encounters.
- There is no good reason to kill a snake in my opinion, and it is certainly unnecessary, and illegal in many cases, to kill one in our protected parks and natural habitats.

Myths and Misconceptions

- Snakes chase people
- Snakes go blind during heat of summer or 'the dog days of August'
- Snakes make nests
- Rattlesnakes always rattle to give a warning
- Rattlesnakes add one rattle per year
- Snakes drink milk
- Snakes travel in pairs, the survivor seeking revenge if one is killed
- A snake must coil before it can strike
- A 'hoop snake' will put its tail in its mouth and roll after a person
- Snakes cannot strike underwater
- All venomous snakes have triangular heads
- Snakes will not cross a horse hair rope, because the rope's hairs will scratch the snake's belly uncomfortably
- Venomous snakes will mate with nonvenomous snakes and make babies that look nonvenomous but are actually venomous
- Snakes will not eat dead food
- Some snakes can sting with their tails

How many species?

- There are 28 snake species that are known from Lafayette Parish or an adjoining parish.
 - 23 Nonvenomous
 - 5 Venomous
- Of these, less than half are encountered with any frequency even by those searching for them.
- Only about 10 are likely to ever be encountered by someone in urban or suburban areas

Snake Species in Lafayette & Adjoining Parishes

➤ **Nonvenomous Snakes**

- **North American Racer**
- Prairie Kingsnake
- Western Milksnake
- **Speckled Kingsnake**
- **Rough Greensnake**
- Red Cornsnake
- **Western Ratsnake**
- Ring-necked Snake
- Red-bellied Mudsnake
- Eastern Hog-nosed Snake
- **Rough Earthsnake**
- Glossy Swampsnake
- Saltmarsh Watersnake
- Mississippi Green Watersnake

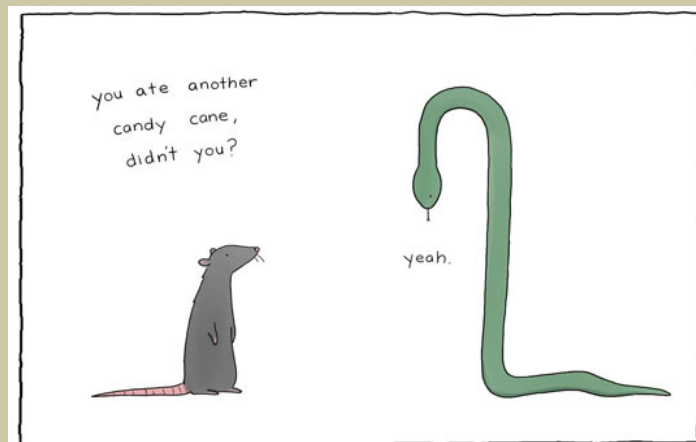
- **Plain-bellied Watersnake**
- **Broad-banded Watersnake**
- **Diamond-backed Watersnake**
- Graham's Crayfish Snake
- **Dekay's Brownsnake**
- Red-bellied Snake
- **Western Ribbonsnake**
- Common Gartersnake
- Brahminy Blindsnake (Exotic)

➤ **Venomous Snakes**

- Texas Coralsnake
- **Copperhead**
- **Cottonmouth**
- Timber Rattlesnake
- Pygmy Rattlesnake

At Home in Urban and Suburban Areas

- North American Racer - *Coluber constrictor*
- Speckled Kingsnake - *Lampropeltis holbrooki*
- Western Ratsnake - *Pantherophis obsoletus*
- Rough Earthsnake - *Haldea striatula*
- Dekay's Brownsnake - *Storeria dekayi*





Racer

- AKA Blue Runner
- 5'+, but typically less
- Fast, diurnal
- Head high in grass
- Smooth scales
- Juveniles look different





Speckled Kingsnake

- Up to 6', typically smaller
- Black and yellow
- Smooth scales, shiny
- Eats other snakes, even venomous ones



Western Ratsnake

- AKA Chicken Snake or Egg Snake
- 7'+ but typically smaller
- Weakly keeled scales
- Agile climber (trees, barns, attics)
- Affinity for rodents, birds, and bird eggs



Rough Earthsnake

- Up to 1'
- Nondescript, brownish or grayish
- Rough scales
- Common in gardens, cracks of your yard, etc.



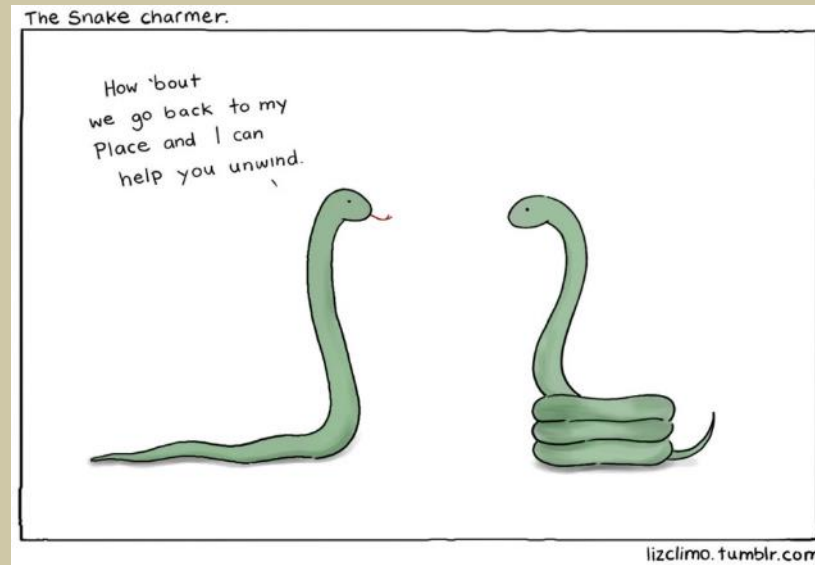
Dekay's Brownsnake

- Less than 1.5'
- Brownish, middorsal stripe
- Rough scales
- Live-bearer
- Common in gardens, but eats slugs and snails
- Not a 'ground rattler'!



Nonvenomous Snakes with Particular Affinities to Water

- Western Ribbonsnake - *Thamnophis proximus*
- Plain-bellied Watersnake - *Nerodia erythrogaster*
- Southern Watersnake - *Nerodia fasciata*
- Diamond-backed Watersnake - *Nerodia rhombifer*



Western Ribbonsnake

- 3'+
- Three stripes
- Rough, keeled scales
- Live-bearer
- Creamy plain bellies
- Common in and around vegetated waters
- One of our most common snakes in LA





Plain-bellied Watersnake

- AKA Yellow-bellied or Blotched Watersnake
- Up to 5'
- Will roam further away from water than other watersnakes
- Fairly plain undersides
- Rough, keeled scales
- Live-bearer
- Juveniles may look different than adults



Broad-banded Watersnake

- Less than 4'
- Orangish bands, variable
- Beautiful reddish blotched bellies
- Rough, keeled scales
- Live-bearer
- One of most common snakes in LA



Diamond-backed Watersnake

- AKA Fish Snake
- 5'+ (females)
- Reddish eyes
- Rough, keeled scales
- Live-bearer
- Generally prefers bigger waters
- Females much larger than males, mating balls common, usually on basking logs



Acadiana's Venomous Species

- Texas Coralsnake - *Micrurus tener*
- **Copperhead** - *Agkistrodon contortrix*
- **Cottonmouth** - *Agkistrodon piscivorus*
- Timber Rattlesnake - *Crotalus horridus*
- Pygmy Rattlesnake - *Sistrurus miliaris*



Copperhead

- 4'+ but typically smaller
- Tan and brown
- Hourglass markings
- Rough, keeled scales
- Live-bearer
- Prefers drier habitats than Cottonmouth
- Young have yellow tails



Cottonmouth

- AKA Water Moccasin
- 5'+ but typically much smaller
- Brown to black
- Rough, keeled scales
- Live-bearer
- Prefers wetter habitats than Copperhead
- Young have yellow tails

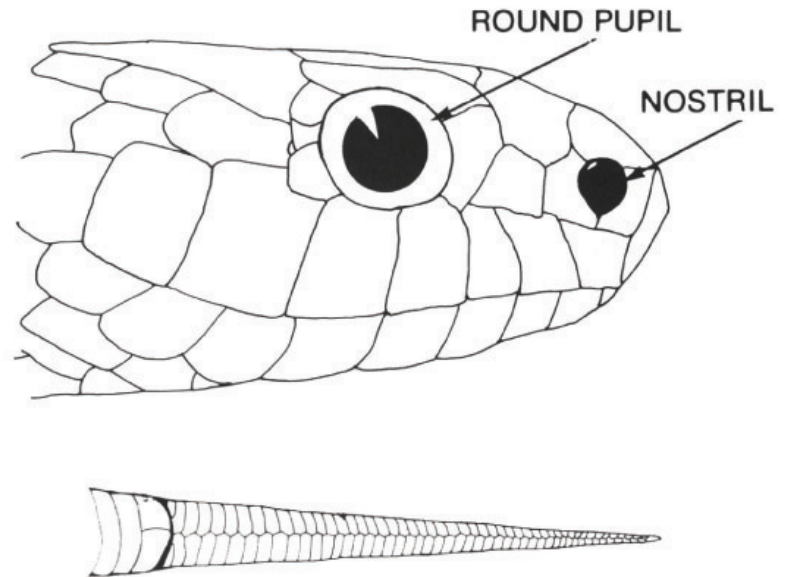
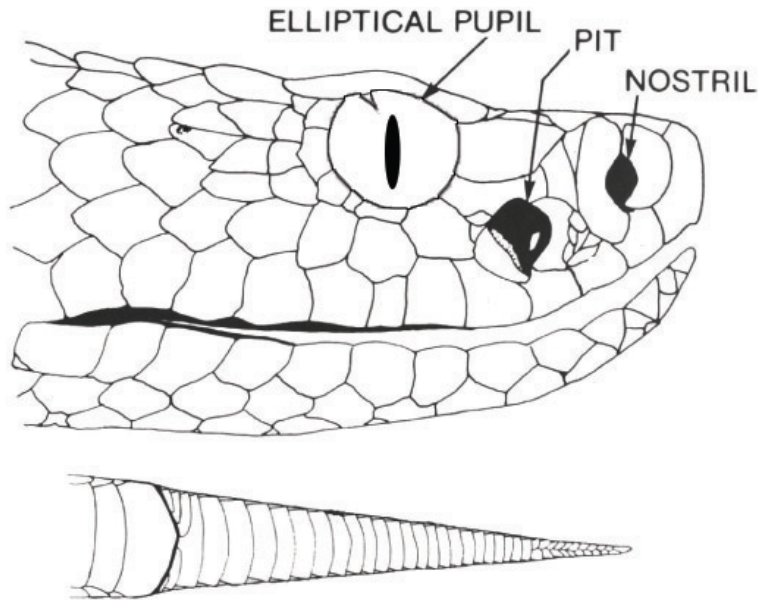


Telling Venomous vs Nonvenomous

- Pit-vipers – Venomous

Nonvenomous

(except Coralsnake)



Drawing by Edmund D. Keiser

Telling Venomous vs Nonvenomous



Telling Venomous vs Nonvenomous

Cottonmouth

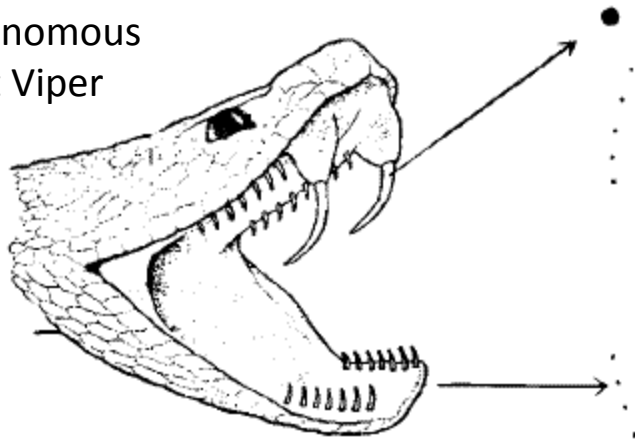
Broad-banded Watersnake



Photos by Brad 'Bones' Glorioso

Nonvenomous vs Venomous Snakebite

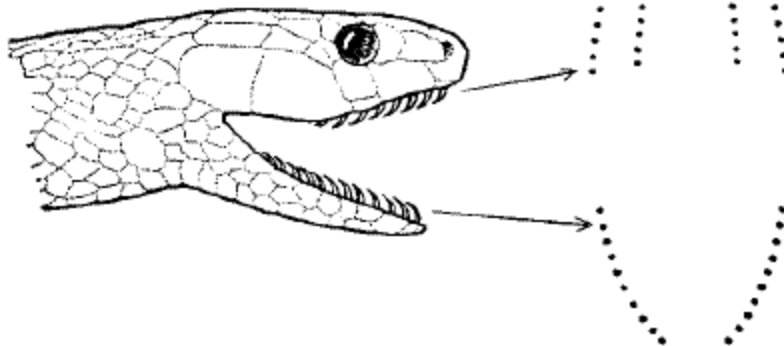
Venomous
Pit Viper



fang marks

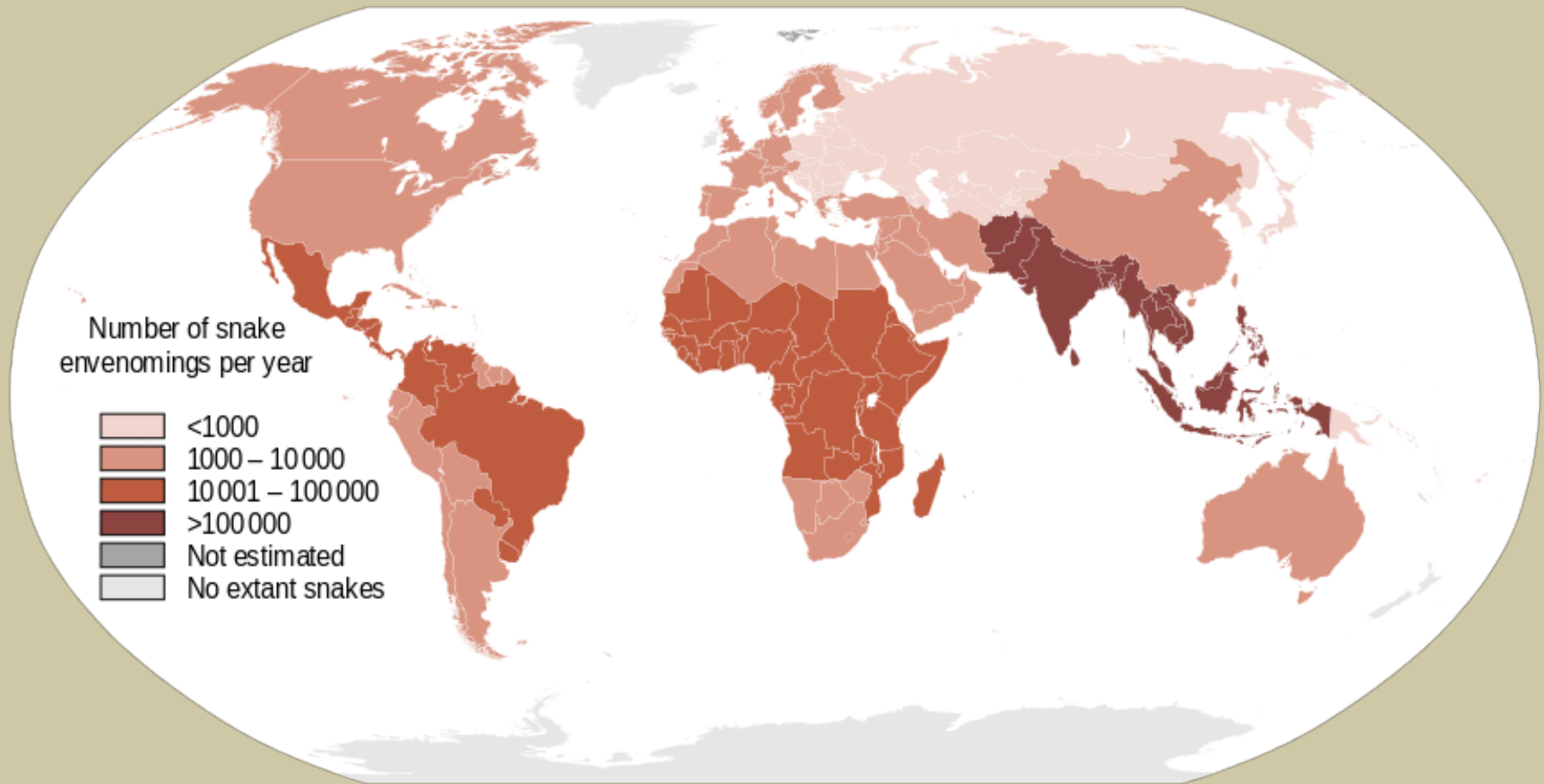
The bite of most **venomous** snakes leaves marks of the 2 fangs (and sometimes, little marks made by the other teeth).

Nonvenomous
Snake



The bite of a snake that is not **venomous** leaves only 2 rows of teeth marks, but no fang marks.

Snakebite



Snakebite

- About 20-25% of all pit viper bites are 'dry' containing no venom, and about 50% of coralsnake bites are dry.
- Since advent of antivenom to treat venomous snakebite, death rate from pit viper bites have dropped to 0.5% from up to 25% in the 19th century.
- About 6 people die of venomous snakebite in the U.S. each year, which is similar to spider bites (7).
 - Dog attacks – 21, Hornet, bee or wasps – 53, lightning - 54
- In the U.S. >40% of snakebites were to people who were handling the snake, be it wild or captive.
 - 40% of that number had a BAC of 0.1 or more

Snakebite Do's

- Call 911 immediately.
- Keep the victim calm and still.
 - Movement can cause venom to move faster through body.
 - Consider a splint to restrict movement of bite area.
- Remove constricting clothing or jewelry as the bite area will likely swell.
- Carry or otherwise transport the victim to hospital.
 - The victim should not be allowed to walk.
- Knowing the snake's identity is helpful, but do not waste time trying to find or kill it. A quick picture may suffice.

Snakebite Don'ts

- Do NOT use a tourniquet.
- Do NOT cut into the snakebite.
- Do NOT use a cold compress on the bite.
- Do NOT give the victim any medication unless directed by a doctor.
- Do NOT give the person anything to eat or drink.
- Do NOT raise the area of the bite above the victim's head.
- Do NOT attempt to suck the venom out by mouth.
- Do NOT use a pump suction device.
 - Now believed to likely do more harm than good.

Snakebite Outcome

- Dependent on many factors
 - Species, size, physical condition, and temperature of the snake
 - Age and physical condition of the person
 - Area and tissue envenomated
 - Amount of venom injected
 - Time it takes to begin receiving treatment
 - Quality of the treatment

Snakebite Prevention

- Snakes are most likely to bite when they feel threatened, startled, cornered, or provoked.
- Refrain from approaching or handling snakes in the wild.
- Avoid areas of tall grass, piled leaves, and rock/wood piles where snakes hide.
- Step on and over logs in the woods.

Snakebite Prevention

- Do not reach blindly into hollow logs, or put your fingers under logs or rocks to lift them.
- When working outside, wear tall boots, long pants, and leather gloves.
- A venomous snake's detached head can act by reflex and still bite, possibly injecting even more venom than if it were live as it is now incapable of regulating the amount they inject.

Reducing Snake Encounters Around Your Home and Yard

- Snake Deterrents & Repellants
 - Granules/Powders, etc.
 - Many claim naphthalene (moth balls) or sulphur works
 - Oils/Sprays
 - Ultrasonic sound emitters
 - Deemed fraudulent by FTC
- None really work and some smell badly and poison the environment and possibly you
- Snake Glue Boards/Traps
 - Indiscriminant, killing a wide variety of wildlife in a slow inhumane way

Reducing Snake Encounters Around Your Home and Yard

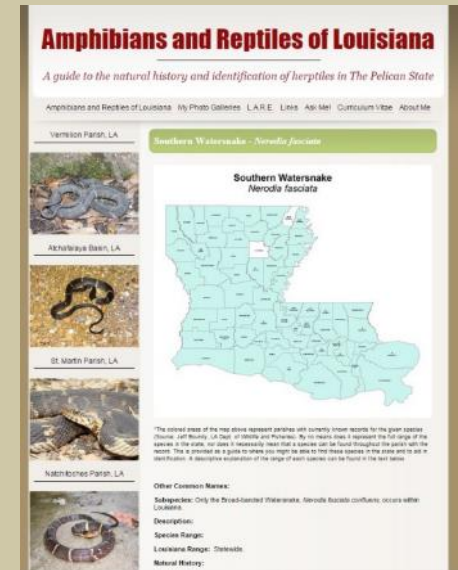
- Home
 - Make sure there are no open entrances to your home, particularly where there are vents and pipes, or gaps in your foundation
- Yard
 - Keep tidy and mowed, and free of thick vegetation, debris, wood/rock piles, or other places where snakes, or their prey, may like to hide

I see a snake...what should I do?

- A snake in your yard
 - Will likely move through on its own, unless your yard provides its basic needs of shelter and food
 - If you need to get snake to move on simply spray a water hose at the snake to get it on its way.
- A snake in your home
 - If certain it is nonvenomous, try to collect it into a bucket or garbage can with a lid, and then release it outside.
 - If it is venomous, remove pets and people, and call a professional.
 - Do not try to capture or kill the snake. This is how bites often happen and can prove lethal.

Resources

- Amphibians and Reptiles of Louisiana
 - www.louisianaherps.com
- On Facebook, you could join the Louisiana Amphibian and Reptile Enthusiasts (L.A.R.E.)
 - <https://www.facebook.com/groups/LouisianaHerps/>
 - Focuses solely on wild amphibians and reptiles
- The Amphibians and Reptile of Louisiana – Dundee and Rossman (1989)
- Snakes of Louisiana – Boundy (1996)
- Peterson Field Guide to Reptiles and Amphibians of Eastern and Central North America – Powell, Conant and Collins (2016)
- Amphibians and Reptiles of Louisiana – Boundy and Carr (2017)



Venomous Snakes of the Southeastern U.S.

VENOMOUS SNAKE IDENTIFICATION

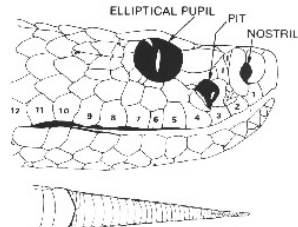
As a resident of the southeastern United States, it is important that you learn to identify those regional species that may pose a threat to humans. Then, by process of elimination, all others can be recognized as harmless (nonvenomous). Knowing the following characteristics is helpful.

CORALSNAKE - Red and yellow rings touch (every other ring yellow). Similar non-venomous species have red and black rings or blotches touching (every other ring black).

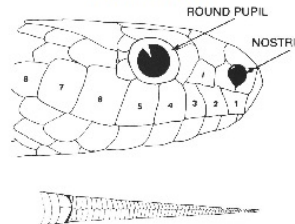
RATTLESNAKES, COTTONMOUTH, AND COPPERHEAD - Pupils elliptical, sensory pit present between nostril and eye, most scales on underside of tail single like belly scales, not divided. **DON'T RELY ON TRIANGULAR HEAD.**

The easiest way to recognize the six venomous species is to learn their patterns and coloration, much as you do common birds.

PIT VIPERS - VENOMOUS



NONVENOMOUS (except coral snake)



Pygmy Rattlesnake
Sistrurus miliarius



Eastern Diamond-backed Rattlesnake
Crotalus adamanteus



Timber (Canebrake) Rattlesnake
Crotalus horridus

TO AVOID BEING BITTEN

1. Don't put your hands or feet in places you cannot see or have not examined. Do not turn over rocks, logs, or trash with your hands.
2. Don't crawl under fences, buildings, or other objects without carefully looking under them.
3. In the wild, don't sit, stand or walk without looking.
4. Don't wear low-cut shoes or swim in areas known to be infested with venomous snakes.
5. Don't gather firewood after dark or without looking carefully.
6. Don't sleep on the ground near woodpiles, cave entrances, or swampy areas.
7. Don't be careless when moving boats left on shore for several hours.
8. Don't disturb snakes, or unnecessarily try to kill them.
9. Don't handle 'dead' snakes with your hands.
10. Don't attempt to capture snakes unless you are skilled.
11. Don't get within a snake's striking distance while trying to identify it.
12. Don't travel alone in snake-infested areas.
13. Don't stay near a snake if it bites you.
14. Don't forget that venomous snakes can climb trees, can bite under water, do occur in high altitudes, and may enter saltwater.

EMERGENCY TREATMENT

1. Calm and reassure the victim; don't panic.
2. Remove all rings, bracelets, or other constricting items.
3. Immobilize the bitten area as much as circumstances allow. Keep the bitten area at or below heart level.
4. Take victim to medical facility as quickly as possible. **CALL AHEAD TO ALERT EMERGENCY ROOM YOU ARE ON YOUR WAY.** This is a medical emergency, and they need to prepare.

NOTE:

Do not give victim any drink or food by mouth.

Do not use a constriction band or tourniquet in the absence of an obviously severe envenomation.

Do not place ice on bitten extremity, and don't use electric shock.

Do not make any cuts. Instead, use THE EXTRACTOR®, manufactured by Sawyer, and recommended by some physicians skilled in venomous snakebite treatment. This instrument may remove venom by suction without the use of incisions.

Only a physician should administer antivenom.

If feasible, bring dead snake for positive identification (use caution - don't get bitten again!).

Authors: Robert A. Thomas, Ph.D. and James A. Davis
School of Mass Communication and Department of
Biological Sciences
Center for Environmental Communication
Loyola University, New Orleans, Louisiana 70118-6195
ralthomas@loyno.edu www.loyno.edu/lucec



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July 7, 2011 2nd edition



Cottonmouth
Agkistrodon piscivorus
Juvenile pictured to the left



Both young
cottonmouths and
copperheads have a
yellow-tipped tail that
is used as a lure for
prey.



Copperhead
Agkistrodon contortrix



Coralsnake

Texas Coralsnake, *Micrurus tener*, above,
west of the Mississippi River
Harlequin Coralsnake, *Micrurus fulvius*,
east of the Mississippi River

SNAKEBITE STATISTICS

Most snakebites are by non-venomous species. Of all the bites by venomous snakes, 25-50% do not inject any venom. **MORE IMPORTANT, MORTALITY IS LESS THAN 1% FOR PHYSICIAN TREATED VENOMOUS SNAKEBITES IN THE UNITED STATES.**

IDENTIFICATION AID

Snakes pictured are generally typical; however, some variation in color and markings does occur. If in doubt, consult an identification expert.

Herpetologist, Loyola University	(504) 865-2107
Reptile Curator, Audubon Zoo (New Orleans)	(504) 212-5240
Museum of Natural Science, LSU (Baton Rouge)	(225) 578-2855
Museum of Natural Science, LSU (Shreveport)	(318) 797-5338
Acadiana Park Nature Station (Lafayette)	(337) 291-8448
Walter B. Jacobs Nature Park (Shreveport)	(318) 929-2806
Louisiana Purchase Gardens & Zoo (Monroe)	(318) 329-2400
Bluebonnet Swamp Nature Center (Baton Rouge)	(225) 757-8905

VENOMOUS SNAKEBITE MANAGEMENT CONSULTATION

Check with your local emergency rooms to ensure that they have medical experience with venomous snakebites.

Ochsner Hospital Emergency Room (New Orleans)	(504) 842-3460
West Jefferson Medical Center (Marrero)	(504) 349-1533
Ochsner Hospital Emergency Room (Baton Rouge)	(225) 358-1000
East Jefferson General Hospital (Metairie)	(504) 454-4000
Slidell Memorial Hospital (Slidell)	(985) 649-8542
St. Tammany Parish Hospital (Covington)	(985) 898-4000

INFORMATION ABOUT AVAILABLE ANTIVENOMS (including exotic species)

Arizona Poison Center (Clearinghouse)	(520) 626-6016
Alabama Regional Poison Control Center	(205) 939-9201
Florida Poison Information Center	(813) 253-4444
Georgia Poison Center	(404) 616-9000
Louisiana Poison Control Center	(318) 342-3648
Texas State Poison Center	(214) 589-0911

QUIZ

- Test your knowledge!
- 30 Snakes
 - Nonvenomous or venomous
 - Identify the species
- Some duplicated and some that were not discussed in detail, but do occur in the area

Nonvenomous

Broad-banded Watersnake



Venomous

Cottonmouth



Nonvenomous

Western Ratsnake



Nonvenomous

Speckled Kingsnake



Nonvenomous

Dekay's Brownsnake



Nonvenomous

Western Ribbonsnake



Nonvenomous

Broad-banded Watersnake



Nonvenomous

Black-masked Racer



Nonvenomous

Plain-bellied Watersnake



Venomous

Copperhead



Venomous

Cottonmouth



Nonvenomous

Mississippi Green Watersnake



Nonvenomous

Rough Earthsnake



Venomous

Copperhead



Nonvenomous

Western Ratsnake



Nonvenomous

Red-bellied Mudsnake



Nonvenomous

Eastern Hog-nosed Snake



Venomous

Cottonmouth



Nonvenomous

Diamond-backed Watersnake



Venomous

Texas Coralsnake



Nonvenomous

Rough Greensnake



Venomous

Timber Rattlesnake



Nonvenomous

Black-masked Racer



Nonvenomous

Western Milksnake



Nonvenomous

Diamond-backed Watersnake



Nonvenomous

Western Ratsnake



Venomous

Copperhead



Nonvenomous

Plain-bellied Watersnake



Venomous

Cottonmouth



Nonvenomous

Plain-bellied Watersnake



How did you do?

- Were you able to correctly identify all of them as venomous or nonvenomous?
- Were you able to identify some or all of them to species?
- It is not hard to tell apart venomous snakes from nonvenomous snakes, but it takes the 'want' to learn how to do it!

Questions?



**“In the end we will conserve only what we love.
We will love only what we understand.
We will understand only what we are taught.”
- Baba Dioum, Senegalese Conservationist**