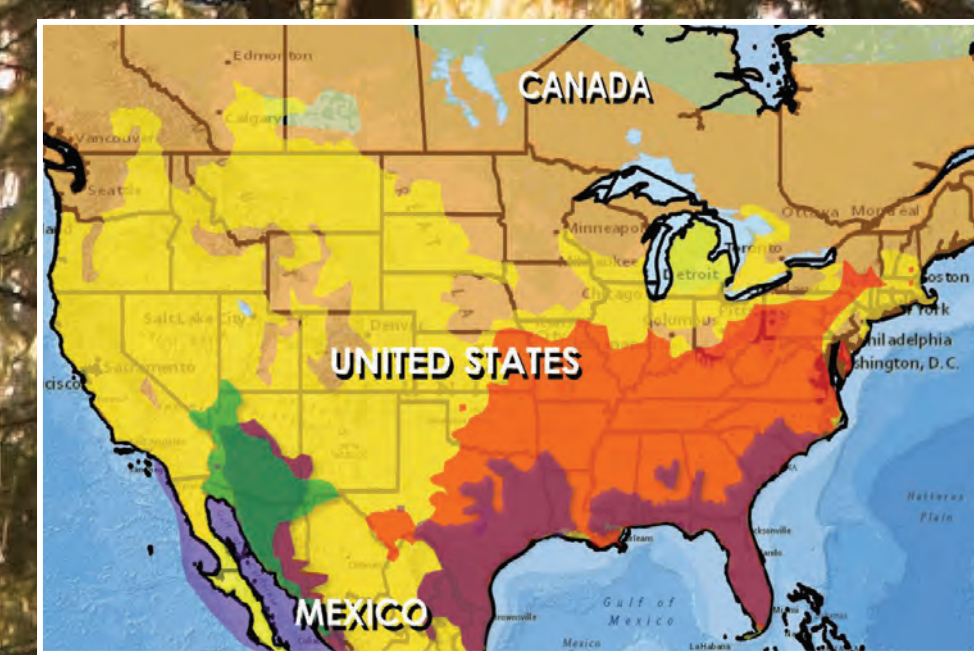


VENOMOUS REPTILES

of the United States & Canada



RATTLESNAKES



HABITATS

Rattlesnakes can be encountered in many types of terrain including coastal sand dunes, forests, savannas, deserts, as well as rocky hills and mountainsides.

BEHAVIOR

- Sit-and-wait predators during the day; remain coiled next to a regularly used animal path, and wait silently for prey to come within striking distance.
- Active hunters at night and during rainy, overcast days; most active on calm warm nights.
- Tail rattle is shaken vigorously to warn off intruders.
- Some species are relatively docile while others are quite aggressive when approached.
- Common in areas with abundant rodents; often found near farms and towns.
- During the winter months, rattlesnakes hibernate in groups in rocky outcroppings, tree stumps or animal burrows.

COPPERHEADS AND COTTONMOUTHS



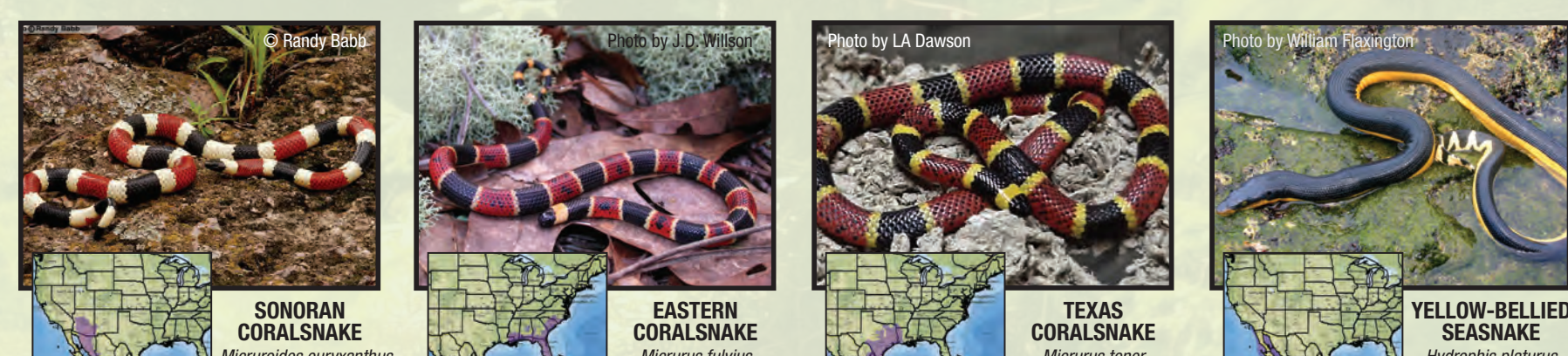
HABITATS

- Copperhead snakes are most commonly found in wooded areas containing rocky canyons with springs and streams. Active from April to October and nocturnal during the hot summer months.
- Cottonmouth snakes live near streams or creeks, swamps, marshes, or shores of ponds or lakes, and can be encountered in cypress swamps, pine, palmetto, and deciduous forests, as well as dune and beach areas.

BEHAVIOR

- When cornered or provoked copperheads will thrash tails, display an open mouth, and strike repeatedly.
- If threatened, cottonmouths will stand their ground when approached, and may gape their mouths widely, revealing the pale or cottony-white interior in a threat display.

CORALSNAKES AND SEASNAKES



HABITATS

- Coralsnakes live in rocky areas in thorn-scrub deserts, pine and scrub oak woodlands, grasslands and farmlands, in flat terrain and on mountain slopes from sea level to 5,800 feet elevation.
- Seasnakes are encountered along Pacific Ocean shorelines when strong winds or currents cause beach strandings.

BEHAVIOR

- Coralsnakes are active at night, and during the day after rains or if the sky is overcast.
- If threatened, coralsnakes will swing and move their tails to mimic their heads in an attempt to confuse predators.
- Seasnakes are helpless on land, and cannot crawl.

GILA MONSTER



HABITATS

- Gila monsters prefer to live in rocky areas in desert scrublands, especially in dry river or creek streambeds, at elevations up to 5,500 feet.

BEHAVIOR

- Active at dawn, dusk, and on overcast days. Will climb small trees and shrubs in search of prey.
- Spend the majority of their time underground or in close proximity to burrow entrances.
- May appear sluggish and tame, but can turn very quickly to bite.
- Aggressive only when cornered or an attempt is made to capture them.
- Their bite is extremely strong; most serious bites occur when they secure a firm hold on the victim that can last for several minutes.

Species	Head	Pupils	Fangs	Scales	Anal Plate	Length
Rattlesnake <i>Crotalus</i> spp.	Broad Head, Narrow Neck, Only Small Scales Between the Eyes	Vertically Elliptical Pupils	Hinged Front Fangs, Pit Between Eye and Nostril	Keel Scales	Anal Plate Single: Single Scales Under Tail	Rattle on the End of Tail, Up to 9 Feet in Length
Pygmy Rattlesnake <i>Sistrurus</i> spp.	Smaller Broad Head, Narrow Neck, Nine Large Plates Between the Eyes	Vertically Elliptical Pupils	Hinged Front Fangs, Pit Between Eye and Nostril	Keel Scales	Anal Plate Single: Single Scales Under Tail	Rattle on the End of Tail, Small, 16-24 Inches in Length
Copperhead and Cottonmouth <i>Agkistrodon</i> spp.	Broad Head, Narrow Neck, Nine Large Plates Between the Eyes	Vertically Elliptical Pupils	Hinged Front Fangs, Pit Between Eye and Nostril	Keel Scales	Anal Plate Single: Single Scales Under Tail	Thick Bodied, Up to 4 Feet in Length
Coralsnake <i>Micruroides euryxanthus</i> and <i>Micurus</i> spp.	Short Head, Barely Distinct from Neck, Body Ringed in Black, Yellow and Red	Round Pupils	Fixed Front Fangs	Smooth Scales	Anal Plate Divided: Double Row of Scales Under Tail	Slender and Small, 18-20 Inches in Length
Seasnake <i>Hydrophis platyrus</i>	Narrow and Flattened Head	Round Pupils	Fixed Front Fangs	Smooth Scales	Oar-Like Tail for Swimming	Thin Body, Up to 3 Feet in Length
Colubrid <i>Heterodon</i> spp., <i>Thamnophis</i> spp., <i>Diadophis</i> spp., <i>Hypsigenia</i> spp. and others.	Head Medium Sized and Oval-Shaped	Predominately Round Pupils or Vertically Elliptical	Black Teeth of Upper Jaw are Enlarged and Grooved	Smooth or Keel Scales	Anal Plate Single or Divided: Double Scales Under Tail	Length Ranges from Inches Up to 8 Feet

SNAKEBITE PREVENTION

- LEAVE ALL SNAKES ALONE!** Venomous snakes are found throughout the United States and Canada. Treat all snakes you encounter as venomous and deadly. Many people are bitten because they try to kill a snake or get a closer look at it.
- Snakebites occur most often:
 - After rainstorms that follow long dry spells or after rain in desert areas.
 - During the half-hour before total darkness and the first two hours after dark.
- As tactical situations permit, avoid high-risk snake habitats. Locate bivouacs away from brush piles, rocks, or other debris. Swim only at approved beaches.
- Eliminate things that can hide or attract snakes:
 - Remove wood and rock piles, construction debris, dumps, high grass and dense undergrowth.
 - Practice good sanitation removing clutter/trash and store supplies elevated off the ground.
 - Control rodents and other prey animals that will attract snakes into your area.
- To keep snakes out of dining/living/work areas, keep windows and doors closed whenever possible and make sure window screens fit tightly and are in good repair. Also seal or block openings or holes in walls, foundations, crawlspaces and roofs.
- Practice "SNAKE-SMART" behavior:
 - Shake out bedding and clothes before use and avoid sleeping on the ground. Using a zipped pop-up bed net will provide protection in open outdoor areas.
 - Wear thick leather boots for the best foot protection. Never walk barefoot or in shower shoes outside.
 - Avoid walking alone and keep to clear paths. Always use a flashlight at night.
 - Watch where you put your hands and where you step, especially in natural environments.
 - Don't reach or step into places you cannot directly see into.
 - Be alert to and avoid areas where snakes may be hiding or sunning.
- If a snake is encountered at close quarters, try to remain calm and stand still. Do not make threatening gestures toward the snake. Move backward slowly.
- Do not pick up a "dead" snake; it may only be injured, stunned or playing dead. Even a recently killed snake can bite by reflex action.
- ONLY IF NECESSARY**, use a stick or shovel and place dead snake in a hard-sided container. Never handle the head if transporting a dead snake that needs to be identified.

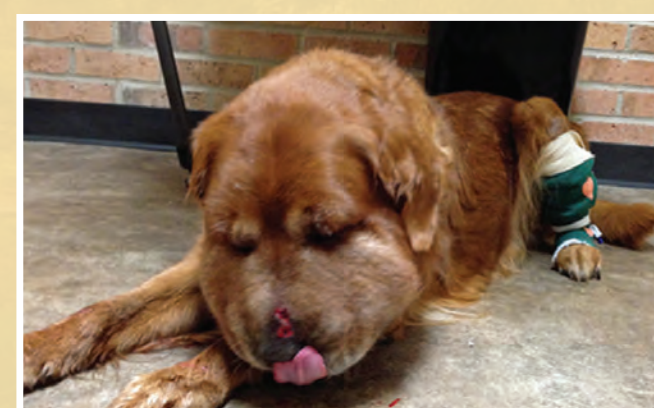


SNAKEBITE FIRST AID

- Stay calm and move victim and any onlookers away from the snake. If possible, close off area where snake was seen and restrict access until area is cleared by preventive medicine, vector-control or other appropriate personnel.
- Have the victim lie down immediately; reassure and calm the victim.
- Remove constrictive items (jewelry, watches, rings, clothing or shoes). Lightly immobilize the injured part of body and place in a comfortable position. DO NOT apply tourniquet or try to cut and draw out venom.
- Take the victim to a medical facility as soon as possible. Venomous snakebites cannot be treated in the field, don't waste valuable time trying.
- Record the appearance and progress of symptoms in as much detail as possible.
- Safely try to note the appearance of the snake (shape of head, body color, shape and length, etc.)
- Antivenin (antivenom) is available for some snake species; consult with the local medical care facility to determine their capabilities and availability of antivenin.

WORKING DOG AND PET SAFETY

- EFFECTS OF SNAKE VENOMS ON WORKING DOGS AND PETS:** The bite of a venomous snake can cause serious illness and death if not treated immediately. Recognize the symptoms: local or general swelling, bleeding, intense pain, low blood pressure, dead tissue around the wound, shortness of breath, weakness, renal failure.
- PET FIRST AID:** If a dog is bitten by a venomous snake, keep the dog quiet and calm and request veterinary assistance or move it as quickly as possible to a treatment facility. Panic or exertion causes snake venom to move more rapidly through the bloodstream. Many bites occur on the face or neck of the dog. When this happens, remove the choke chain and loosen or remove the collar and muzzle. Swelling occurs rapidly after a snakebite, and this equipment may restrict breathing. Position the dog's head extended from its body to allow the dog to get maximum airflow.



Facial swelling and injuries in a dog from a venomous snake bite to the nose.

REPTILE VENOMS AND THEIR EFFECTS

RATTLESNAKES, COPPERHEADS, and COTTONMOUTHS

- Aggressive, will strike quickly if stepped on or threatened.
- These snakes have long, hollow, hinged fangs in front of the mouth able to deliver large amounts of venom.
- Hemotoxic venom—causes widespread tissue destruction, external and internal bleeding.
- Intense pain felt immediately after venom is injected.
- Symptoms of a serious bite include fall in blood pressure, weakness, rapid pulse, nausea, shortness of breath, vomiting, shock and kidney failure. Death can result if not treated promptly.
- Of the roughly 8,000 people that are bitten each year in the United States by venomous snakes, the majority of these bites are from rattlesnakes and copperheads.
- Most fatalities in the United States are attributed to the eastern and western Diamondback rattlesnakes.

CORALSNAKES and SEASNAKES

- Coralsnakes and seasnakes are not aggressive, but will bite if handled or stepped on.
- Venom is delivered by a small pair of fixed, hollow, front fangs, often by a chewing motion.
- Neurotoxic venom—affects the brain and nerves, can interfere with the function of the heart and can paralyze the lungs.
- Little to no swelling or discoloration at the bite site.
- Symptoms of a serious bite include blurred vision, drooping eyelids, slurred speech, drowsiness, nausea, and increased salivation and sweating. Difficulty breathing, paralysis, convulsions, coma and death can result if the bite is not treated promptly.

COLUBRID SNAKES

- The saliva of some non-venomous colubrids has, in rare instances, produced medically significant bites.
- In the United States, people have had reactions to bites of the black-striped snake (*Crotaphytus imperialis*), ringneck snake (*Diadophis punctatus*), western hognose snake (*Heterodon nasicus*), cat-eyed snake (*Leptodeira septentrionalis*), Mexican vine snake (*Oxybelis aeneus*), western terrestrial gartersnake (*Thamnophis elegans*), common gartersnake (*Thamnophis sirtalis*), and lyre snake (*Trimorphodon biscutatus*).
- Enlarged back teeth not very efficient at subduing prey or delivering toxin, most must chew for a prolonged period of time to deliver enough of the toxic saliva into the wound to cause a reaction.
- Reactions appear in fewer than 1% of gartersnake bites, though such bites are common among people who handle these snakes. It is possible that all colubrid saliva has a toxic component.

GILA MONSTER

- Venom glands are located in the lower jaw; there is a grooved pit at the base of each tooth for venom delivery.
- Venom is delivered by a chewing motion; the lizard's jaws are strong and their bite is not easily broken.
- Symptoms of envenomation are excruciating pain, swelling, faintness, perspiration, low blood pressure, rapid heart beat, respiratory distress, paralysis, convulsions, nausea and vomiting.
- There is no antivenom available for the treatment of Gila monster bites.



SNAKE VENOMS are complex mixtures of many toxins and enzymes. Snakes use their venom to subdue and digest their prey. The effects of a snakebite can range from a simple puncture wound to death. The severity and types of symptoms depend on the species of snake and how much venom is injected. It is possible to be bitten by a venomous snake and not be envenomated (called a "dry bite") since the snake does not always inject venom.

EFFECTS OF SNAKE VENOMS ON HUMANS

Depending on the species of snake, the venom either has hemotoxins (affect the blood system), neurotoxins (affect the nervous system) or some venoms may contain both.

- Venoms of rattlesnakes, copperheads and cottonmouths are made up mainly of hemotoxins. Their venom attacks blood cells and destroys muscles and blood vessels. Hemotoxins cause blood to leak into surrounding tissues, causing severe swelling, pain, and discoloration at the site of the snakebite.
- Venom of coralsnakes and seasnakes are made up mainly of neurotoxins. Their venom attacks the brain and nerves, and can destroy or paralyze the nerves that control the heart and breathing.

GILA MONSTER VENOM is a complex mixture of toxins and enzymes. Its toxicity is comparable to that of rattlesnakes.

Venomous snakes are found in every state in the United States, except Alaska, and in the southern provinces of Canada from sea level to 11,000 feet. The only venomous lizard, the Gila monster, is restricted to the southwestern United States.

- Rattlesnakes
- Colubrids
- Coralsnakes
- Gila monster
- Copperhead/Cottonmouth
- Seasnakes

COLUBRIDS (non-venomous but medically important)

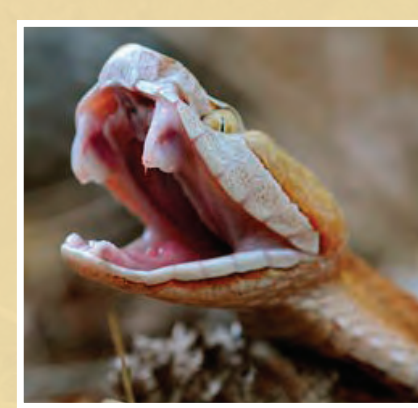


HABITATS

- Colubrids have adapted to a wide variety of habitats to include forests, farms, scrublands, deserts, and mountainous drylands.

BEHAVIOR

- Active both day and night.
- Large group with a wide variety of behaviors. Some like the hognose snakes are modified for burrowing. Vine and cat-eyed snakes are extremely slender and adapted to climbing.
- Feed on a wide range of prey, some prefer small warm-blooded mammals such as mice and kill their prey by constriction. Other species subsist entirely on cold-blooded vertebrates, like toads, frogs, lizards, other snakes, fishes, and invertebrates like crustaceans, insects and other arthropods.



Large, hollow front fangs deliver venom.



Small, hollow front fangs deliver venom.



Enlarged back teeth of a western hognose snake.



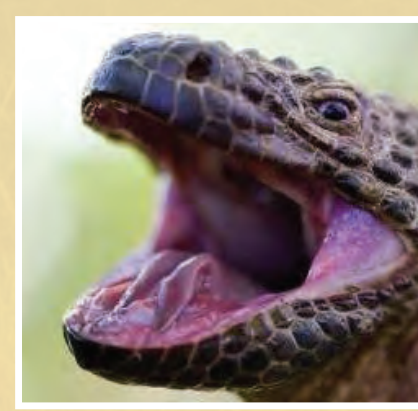
Grooved teeth in lower jaw deliver venom.



Swelling and bruising seen after a bite from a Gila monster.



Swelling as a result of the toxic saliva from a colubrid snake bite.



Swelling and bruising seen after a bite from a Gila monster.



Swelling and bruising seen after a bite from a Gila monster.