

**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

Division Six



Reference Guide
to
**Poisonous Snakes, Insects
& Plants**

Poisonous Snakes, Insects and Plants

This guide was designed to assist you in identifying the different types of poisonous snakes, insects and plants found in North Carolina. Like most accidents and injuries, prevention is the key to controlling hazards from poisonous snakes, insects and plants. Additional information can be found in SOP 10-17.

North Carolina Department of Transportation

SAFETY PHILOSOPHY

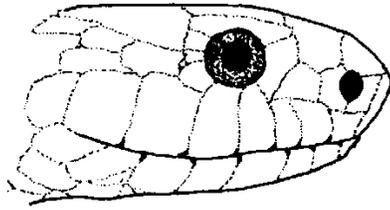
- All accidents and injuries can be prevented.
- Management/supervisors are responsible, and will be held accountable, for preventing injuries and occupational illnesses.
- Occupational safety and health is part of every employee's total job performance.
- Working safety is a condition of employment.
- All workplace hazards can be safeguarded.
- Training employees to work safely is essential and is the responsibility of management/supervision.
- Prevention of personal injuries and accidents is good business.

CARDINAL RULES

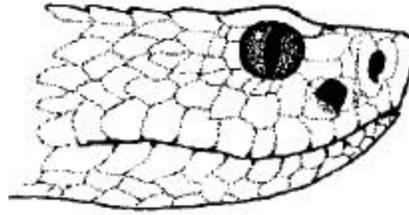
These offenses may be grounds for dismissal:

- Failure to report all incidents (accidents, injuries & near misses) immediately
- Possession or use of illicit drugs or alcohol
- Possession of firearms
- Malicious destruction of NCDOT property
- Fighting or horseplay
- Falsification of NCDOT safety documents

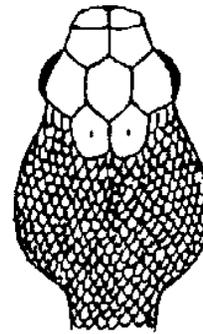
SNAKES



Nonpoisonous Snake
Round Pupil



Poisonous (Pit Viper) Snake
Vertically elliptical pupil
Pit below eye
Triangular Head



Snakes range in size from a few inches to more than 8 feet. Several poisonous snakes live in North Carolina. Copperheads have the widest distribution; rattlesnakes are found in most states but are not as common as copperheads. Cottonmouths may be common in some areas, while coral snakes have the most restricted distributions.

The pit vipers--which include copperheads, cottonmouths and rattlesnakes--are characterized by a pit between and slightly below the eye and nostril; long movable fangs; a vertically elliptical pupil; undivided scales on the underside of the tail; and a triangular head.

The coral snake, is the only poisonous snake in our region, that is not a pit viper. It is recognized by its distinctive pattern: red, yellow and black rings. A yellow ring separates each red and black ring.

What to Do if Bitten by a Venomous Snake

According to the American Red Cross, these steps should be taken:

- Wash the bite with soap and water.
- Immobilize the bitten area and keep it lower than the heart.
- Get medical help.

If a Victim is Unable to reach Medical Care within 30 Minutes.

1. Allow bite to bleed freely for 15-30 seconds.
2. Cleanse and rapidly disinfect area.
3. Wrap leg/arm rapidly with 3" to 6" Ace bandage past the knee or elbow joint. Leave fang marks open. Apply suction cup extractor (if available) immediately. Wrap bandage no tighter than one would for a sprain.
4. Apply Extractor until there is no more drainage from fang marks. Extractor can be left in place 30 minutes or more if necessary. It also aids in keeping the venom from spreading by applying a negative pressure against the tissue where the venom was initially deposited.
5. If an extractor is not available: Apply direct pressure over bite using a 4 x 4-gauze pad folded in half twice. Tape in place with adhesive tape.
6. Soak gauze pad in Betadine(tm) solution if available.
7. Strap gauze pad tightly in place with adhesive tape
8. Overwrap dressing above and below bite area with ACE or crepe bandage.
9. Wrap ACE bandage as tight as one would for a sprain. Not too tight.
10. Check for pulse above and below elastic wrap; if too tight. Unpin and loosen.
11. Immobilize bitten extremity, use splinting if available.
12. Go to nearest hospital or medical facility as soon as possible.
13. Try and identify, kill and bring (ONLY if safe to do so) offending snake.

What Not to Do if Bitten by a Venomous Snake

1. DO NOT permit removal of pressure dressings or ACE bandage until you are at a facility ready and able to administer antivenom. As soon as the dressings are released the venom will spread. The hospital at this time must be prepared to administer the antidote (antivenom).
2. Do not eat or drink anything unless Okayed by medical sources.
3. Do not engage in strenuous physical activity.
4. Do not apply oral (mouth) suction to bite.
5. Do not cut into or incise bite marks with a blade.
6. Do not drink any alcohol or use any medication.
7. Do not apply either hot or cold packs.
8. Do not apply a narrow, constrictive tourniquet such as a belt, necktie or cord.
9. Do not remove dressings until arrival at hospital and antivenom available.



photo credit: J.D. Willson, Eric Stine, and RW VanDevender

Copperhead

Warning: The Copperhead is the most common venomous snake in North Carolina. However, Copperheads are usually not aggressive and their bite is very rarely lethal.

Description: Like most members of the pit viper family, the Copperhead is a heavy-bodied snake. These snakes range between 24 and 36 in. (61-91) in length and they are covered in hour-glass shaped crossbands which vary in coloration among different populations. The crossbands may be copper, pinkish, reddish brown, or orange.

Habitat/Range: Copperheads are found state-wide in forests and sometimes in fields. The tips of young Copperheads' tails are yellow and they flick them back and forth in a manner that attracts prey.



photo credit: J. D. Willson, Eric Stine, RW VanDevender, and Mike Dorcas

Cottonmouth

Warning: Cottonmouths are dangerous (their bite can be fatal) and should be left alone.

Description: These are relatively large heavy-bodied snakes that reach lengths between 30 and 48 in. Their coloration ranges from olive to brown to black and the young have wide, dark crossbands. The adult's coloration is dark so the banding pattern is usually not apparent.

Habitat/Range: Cottonmouths occupy marshes, swamps, and most other aquatic environments in the Coastal Plain and eastern Piedmont.

Behavior: They closely resemble many of the water snakes but they behave differently when confronted. Like other members of the pit viper family, they may shake their tail when aggravated. They are likely to stand their ground while opening their mouth and exposing the light lining of their mouth.



photo credit: Michael Dorcas and J.D. Willson

Eastern Diamondback Rattlesnake

Caution: This is probably the most dangerous snake in North America. Its venom is highly destructive to cardiovascular tissue and its large size enables it to inject a lot of it. If it is confronted it will usually rattle and probably hold its ground.

Description: The Eastern Diamondback is the largest species of rattlesnake in the world. It is a heavy-bodied snake that reaches lengths between 3 and 7 ft. A sequence of large brown or black diamonds outlined with cream colored scales run down its back. This is the only rattlesnake species in North Carolina with two light lines running along its face and two light lines aligned vertically on its snout. The Eastern Diamondback Rattlesnake has a large rattle on the tip of its tail that makes a loud buzzing when the snake feels threatened.

Range/Habitat: These snakes inhabit flatwoods, abandoned farmland, and sandy woodlands in the southern Coastal Plain.



Kenneth Wray photo

Timber Rattlesnake

Warning: Timber Rattlesnakes are not aggressive and they are sometimes reluctant to bite. This attribute makes them the preferred species of venomous snake used during snake handling religious services. However, if you encounter this snake you should leave it alone. Its venom is highly toxic and people have died from its bites.

Description: Timber Rattlesnakes range in size between 3 and 5 ft. The coloration of this species is blackish, yellowish, pinkish, or grayish with dark, bent, cross bands aligned along the dorsal length of its body. A reddish dorsal stripe runs between the crossbands and it has a black tail.

Habitat/Range: Timber Rattlesnakes inhabit forest, nearby fields, swampy areas, and thickets in the Appalachians, upper Piedmont, and Coastal regions of the state.



Kenneth Krysko photo.

Pygmy Rattlesnake

Description: These are small, slender rattlesnakes that only reaches lengths between 15 and 21 in. Their coloration ranges from gray to reddish and they have a row of dark blotches along the middle of their back. Usually a reddish stripe also runs along the middle of the back. A row of spots is present on the ventrolateral sides of the snakes. This snake has a very small rattle and its buzzing can only be heard from a few feet away.

Range/Habitat: Pygmy Rattlesnakes inhabit sandhills with oak and pine flatwoods in the Coastal Plain with a few small populations present in the southern Piedmont.



Barry Mansell photo.

Coral Snake

Warning: This snake is the only representative of the family Elapidae in North Carolina. Included in this family are other notoriously venomous snakes such as the cobras, mambas, and sea snakes. The Coral Snake's neurotoxic venom makes it a very dangerous snake. Its teeth are usually unable to penetrate through thick materials such as jeans so people are rarely bitten by these snakes. However, this snake's bite can be lethal and it should not be handled.

Description: Coral Snakes range between 22 and 47 in. in length. It is encircled by wide red and black bands with a yellow stripe between these bands. The snout is blunt and its head is covered with a black band. Several non-venomous snakes mimic the Coral Snake. It can be distinguished from these other snakes by the fact that its **red band is directly against the yellow stripe**. No other snake in North America resembling the Coral Snake has a red band located directly next to a yellow stripe.

Range/Habitat: Small populations of this species inhabit the southern Coastal Plain. Due to its secretive nature this snake is encountered very rarely. It inhabits pine and scrub oak forests with sandy soils.

**Poisonous
Spiders
&
Ticks**



Brown Recluse Spider

DESCRIPTION: Brown recluse spiders belong to a group of spiders commonly known as violin spiders or fiddlebacks. This is because of a characteristic fiddle-shaped pattern they have on their head region. The spider is golden brown with the fiddle being dark brown or black. This spider is not hairy and the fiddle pattern is often shiny. They are about 1/4 to 3/4 inch long.

HABITAT: The spider commonly lives in basements and garages of houses and often hides behind boards and boxes. Bites often occur when the spiders hide in towels or old clothes left in those areas.

TYPE OF DAMAGE: The severity of the bite may vary from no harm at all to a reaction that is very severe. Often there is a systemic reaction within 24-36 hours characterized by restlessness, fever, chills, nausea, weakness, and joint pain. Where the bite occurs there is often tissue death and skin is sloughed off. In some severe cases, a wound may develop that lasts several months.

CONTROL: In all cases, a physician should be notified. If at all possible, kill and take the spider to the physician for positive identification.



Black Widow Spider

DESCRIPTION: The black widow spider is probably the most widely recognized poisonous spider in North Carolina. The adult female has a large, shiny black body and red "hourglass" markings on the abdomen. Young black widow spiders are tan-to-gray in color and have orange and white "racing stripes" on their abdomens. The male spider is smaller than the female and has red and white markings on the back of its abdomen.

HABITAT: Black widow spiders are found in protected places, such as under rocks, wooden boards and in dense plant growth. They frequently nest in electrical, water and telephone equipment boxes outdoors and other areas that are damp and dark.

TYPE OF DAMAGE: Black widow spider venom affects the nervous system. Because the bite itself is relatively mild, some people may not even realize immediately that they were bitten. The venom causes pain in the lymph nodes. Other symptoms of a severe bite include nausea, elevated blood pressure, sweating, tremors and increased white blood cell counts.

Both male and female spiders bite, but adult females produce the most severe bites. Antivenom serum is available, but it must be administered soon as possible after the bite occurs.



Ticks

Ticks are eight-legged, blood-feeding ectoparasites that are closely related to spiders, scorpions, and mites that feed off on mammals and birds. Wearing a hat, long sleeve shirts, pants and using an insect or tick repellent will help prevent tick bites.

Most ticks attach and feed for as long as 12 to 24 hours before they fall off. Tick bites can cause local reactions, including skin damage, irritation, inflammation, and hypersensitivity. All ticks can carry and transmit disease.

LYME DISEASE is caused by the bacteria *Borrelia burgdorferi* and is spread by the deer tick. It is one of the most common tick-transmitted diseases in the world. Its most common clinical symptoms are arthritis, anorexia, and depression. It can also cause cardiac, neurological, and kidney disease.

ROCKY MOUNTAIN SPOTTED FEVER is caused by the bacteria *Rickettsia rickettsii* and is spread by the American dog tick and the wood tick. Symptoms include fever, depression, anorexia, swelling, abnormal bleeding, breathing problems, and eye pain.

REMOVAL: If you find a tick on you, you should remove it by grasping the tick with fine-pointed tweezers and gently pulling it free. The more quickly the tick is removed, the lower the risk of disease transmission.

TREATMENT: Antibiotics are used to treat both Lyme Disease and Rocky Mountain Spotted fever. The prognosis is usually good if the victim receives prompt medical treatment

Poisonous Plants



Poison Sumac: Grows in standing water and swampy areas.
Each leaf has 7 to 13 leaflets.



Poison Ivy: Grows as a vine. Each leaf has three leaflets.



Poison Oak: In the East, grows as a shrub. Hair grows on its fruit, trunk and leaves, which have three leaflets.

Poison Sumac, Poison Ivy and Poison Oak - are the single most common causes of allergic reactions in the United States. These plants are most dangerous in the spring and summer. That's when there is plenty of sap and the plants easily bruise.

An allergic rash is caused by contact with an oil called urushiol, which is found in the sap of all three plants. It is a colorless or pale yellow oil that oozes from any cut or crushed part of the plant. After exposure to air, urushiol turns brownish-black, making it easier to spot.

The urushiol begins to penetrate in minutes once it touches the skin. A reaction appears usually within 12 to 48 hours. Redness and swelling occur, often followed by blisters and severe itching. The rash may take 10 days or longer to heal.

PREVENTION: Look out for these types of plants when outdoors and avoid them if possible. Wear long pants, long sleeve shirts, boots and gloves. Barrier creams offer some protection by preventing urushiol from penetrating the skin. Because urushiol can even travel in the wind, do not burn plants that look like ivy, oak or sumac.

TREATMENT: Wash all exposed areas with cold running water and *Tecnu* cleansing treatment as soon as possible. Soap and water are helpful and may keep the urushiol from penetrating your skin and spreading if used within the first 30 minutes.

If you bring the clothes into your house, be careful that you do not transfer the urushiol to rugs or furniture. Wash clothing in a washing machine with detergent.

To relieve itching for mild rashes, take cool showers and apply over-the-counter preparations like calamine lotion. Over-the-counter hydrocortisone is not strong enough to have any effect. Soaking in a lukewarm bath with an oatmeal or baking soda solution also may ease itching and dry oozing blisters..

In severe cases, prescription cortisone may halt the reaction if used early. If you know you have been exposed and have developed severe reactions in the past, consult your physician.

Notes



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