

## **Rattlesnakes: Friend or Enemy – or just a primal fear?**

By Peter Kilkus

Above the Berryessa Highlands we've regularly had close encounters with rattlesnakes in spring and summer. We had an adventure getting one out of our kitchen a couple of years ago. One just slithered between our friends on our shooting range last weekend. There's nothing quite like walking down a trail and coming upon a coiled rattlesnake looking you in the eye – the cold flash of adrenaline you feel.

I once chased a 3-footer off our road and it did something I've never seen. When I threw a rock at it, it gave a loud (kind of scary) rattle, then jumped into the lower branches of some tightly packed bushes and zipped away without touching the ground as far as I could follow it.

Rattlers have good vision to at least 15 feet away under moderate illumination. The eyes are set so far to the sides of the head that they have only a limited field of binocular (stereo) vision. This may result in their moving their head from side to side as they try to get a good picture of something. Rattlers are too slow to outrun or dodge even the slowest of their enemies, thus the need for good long-range vision.

Though rattlesnakes are dangerous if provoked, they are generally not aggressive, and they also provide humans with a tremendous service - they eat rodents, other reptiles, and insects, and are in turn eaten by other predators.

A friend sent me a photo of a king snake eating a rattlesnake on the deck of neighbor's house in Wragg Canyon. The king snake was tightly coiled around the rattler and half the rattlesnake was already inside the king snake.

The California Poison Control Center notes that rattlesnakes account for more than 800 bites each year with only one to two deaths. About 25 percent of the bites are "dry," meaning no venom was injected, but the bites still require medical treatment.

### Do's and don'ts in snake country:

Be aware that startled rattlesnakes may not rattle before striking defensively. There are several safety measures that can be taken to reduce the likelihood of startling a rattlesnake.

Never go barefoot or wear sandals when walking through wild areas. Wear hiking boots.

When hiking, stick to well-used trails and wear over-the-ankle boots and loose-fitting long pants.

Avoid tall grass, weeds and heavy underbrush where snakes may hide during the day.

Don't move planks, rocks or logs by hand - use a stick or crowbar until you can see under it. Do not step or put your hands where you cannot see, and avoid wandering around in the dark. Don't reach into holes in the ground, rocks or trees, woodpiles, even abandoned buckets and tires.

Step ON logs and rocks, never over them, and be especially careful when climbing rocks or gathering firewood. Check out stumps or logs before sitting down, and shake out sleeping bags before use.

Never grab "sticks" or "branches" while swimming in lakes and rivers. Rattlesnakes can swim.

Be careful when stepping over the doorstep as well. Snakes like to crawl along the edge of buildings where they are protected on one side.

When you hear a rattle or loud hiss, freeze until you identify where the sound is coming from; you don't want to accidentally step on it when trying to flee. Once you have spotted it, give it time to move away. If it doesn't, move slowly straight away from it; don't walk to one side or the other as that could be perceived as threatening. Look behind you before you start to walk backwards - you don't want to trip over a rock, or another snake.

Don't handle a dead or injured snake. Dead snakes may not really be dead. Muscle contractions can still cause wounds, even when handling the decapitated head of a rattler.

### **Is it a rattlesnake?**

Many a useful and non-threatening snake has suffered a quick death from a frantic human who has mistakenly identified a gopher snake, garter, racer or other as a rattlesnake.

This usually happens when a snake assumes an instinctual defensive position used to bluff adversaries. A gopher snake has the added unfortunate trait of imitating a rattlesnake by flattening its head and body, vibrating its tail, hissing and actually striking if approached too closely.



A rattlesnake is a heavy-bodied, blunt-tailed snake with one or more rattles on the tail. It has a triangular-shaped head, much broader at the back than at the front, and a distinct “neck” region. The rattlesnake also has openings between the nostrils and eyes, which is a heat-sensing pit. The eyes are hooded with elliptical pupils.



Additional identifying characteristics include a series of dark and light bands near the tail, just before the rattles, which are different from the markings on the rest of the body. Also note that rattles may not always be present, as they are often lost through breakage and are not always developed on the young.

Encouraging and protecting natural competitors like gopher snakes, kingsnakes, and racers will reduce the rattlesnake population in the immediate area. And, kingsnakes actually kill and eat rattlesnakes.





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Gopher Snake above



King Snake above

**What to do if bitten.**

Though uncommon, rattlesnake bites do occur, so have a plan in place for responding to any situation. Carry a portable phone, hike with a companion who can assist in an emergency, and make sure that family or friends know where you are going and when you will be checking in.

The first thing to do if bitten is to stay calm. Generally, the most serious effect of a rattlesnake bite to an adult is local tissue damage which needs to be treated. Children, because they are smaller, are in more danger if they are bitten.

Get to a doctor as soon as possible, but stay calm. Frenetic, high-speed driving places the victim at greater risk of an accident and increased heart rate. If the doctor is more than 30 minutes away, keep the bite below the heart, and then get to the doctor as quickly as possible.

Do not try to cut the bite wound open or suck out the poison. Wash the bite area gently with soap and water

Remove watches, rings, etc, which may constrict swelling. Immobilize the affected area

Most bites to dogs occur on the face or extremities. The rattlesnake bite is generally "hemotoxic" which means that it exerts its toxin by disrupting the integrity of the blood vessels. The swelling is often dramatic with up to 1/3 of the total blood circulation being lost into the tissues in a matter of hours. The toxin further disrupts normal blood clotting mechanisms leading to uncontrolled bleeding. This kind of blood loss induces shock and finally death. Facial bites are often more lethal as the swelling may occlude the throat or impair ability to breathe.

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Effects depend on the amount of venom injected. Approximately 20-25% of bites are "dry" meaning no venom has been injected, 30% of bites are mild meaning they cause local pain and swelling in the bite area and no systemic symptoms, 40% of bites are severe with approximately 5% actually being fatal.

Rattlers tend to bask near an escape hole - a rocky crevice or animal burrow - to which they can go when they feel threatened. Their other methods of defense, in order of general preference, includes procrypsis (their protective coloring enables them to blend into the background especially when the snake is absolutely motionless); rattling; flight - escaping down its bolt hole or just away from the disturbance; withdrawing its body into a flat (along the ground) coil, hissing and rattling; drawing up into a striking coil, hissing and rattling; striking.

Spring is the period of greatest activity. Emerging from winter hibernation, they are hungry and looking for mates, as this is also the breeding season. During this time they will eat prodigiously, look for females to court, and will battle competing males. During these times of stress, and when trying to eat and when in their opaque stage several days before they are ready to shed, they are most likely to act in an aggressive manner when disturbed.

Snakes migrate to and from their winter denning site, so aggregations of them may be found during a short period of time during the spring and fall. Dens are usually in rocky outcroppings in the hills, or in deep animal burrows.

It is mistakenly believed that rattlers are active only during the heat of the day. Not only do they rest during the heat of the day, sheltered from the sun, they are adept hunters in the dark, their heat pits and sense of smell guiding them to prey. During periods of excessive heat during the day, many diurnal animals become crepuscular (active at dawn and dusk) or partially nocturnal. Thus rattlers are more nocturnal in summer than during the spring or fall, and adults are more nocturnal than juveniles.

When out walking, hiking or camping, precautions should be taken from early morning to late evening, as temperature, season and humidity can all affect just when rattlers will be active.

Rattlers cannot move fast enough to overtake a person who wants to get out of its way. The only danger is that the person falls or trips in getting away, thus disturbing another snake, or falls towards the rattler rather than away.