Tonto

National Park Service
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Tonto National Monument

# DANGEROUS DESERT DWELLERS?

Gila Monsters and Rattlesnakes

Over the years, most of us have read books or seen movies and TV shows about the "real" West. In many of these stories, the villains are not men, but reptiles. Gila monsters attack innocent women and children; rattlesnakes lurk behind rocks, waiting to sink their fangs into the unsuspecting hero. Exciting as these tales are, the truth is much more interesting.

**Gila Monsters**

The Gila monster is one of only two venomous lizards in the world. Its Latin name, Heloderma suspectum, refers to the animal's textured skin and suspicions that it might be poisonous. "Gila" may refer to the fact that they are often seen around the Gila River, or it may be a corruption of Heloderma.

Gila monsters primarily live in the Sonoran Desert, ranging from sea level to about 5000'. They come out of their burrows between March and April, which coincides with the appearance of their preferred prey - bird eggs and baby animals. They conserve precious energy by spending more than 99% of their lives underground and, with their low metabolism, may only need to eat the equivalent of three dozen quail eggs each year.

At an average length of 14 - 16", and weighing about 1½ lbs, this is the largest lizard in the US. Gila monsters have an elongated body, heavy tail, large flat head, short neck and legs, and feet with five toes and claws. The tail stores fat and its circumference indicates the animal's condition. The teeth are grooved, and venom is produced in large glands in the lower jaw. The venom is used for defensive purposes, since the usual food sources cannot escape. The Gila monster is immune to its own venom and appears to be resistant to that of rattlesnakes, as well.

The skin is black to dark brown with orange, yellow, pink, or red "beads" which are produced by skin covering particles of bone. There are two subspecies – the most common is the reticulate, which has irregular blotches. The banded Gila monster has definite bands or rings. The reticulate is found at Tonto National Monument.

As might be expected, Gila monsters are usually rather slow animals, with an average speed of .15 mph; they only manage a top speed of about .5 mph. Their vision and hearing are good, they are efficient diggers, can climb well, and are adequate swimmers.

We think mating takes place in early summer, and a clutch of 2 - 12 eggs is laid in July or August. The young appear approximately 10 months later. They may hatch earlier and overwinter; we don't know much about this part of the life cycle. Hatchlings are about 6" long and weigh approximately one ounce. They reach maturity at 4 - 5 years, and can live to be 20 - 30. They do not have any definite predators; most literature says they "may" be preyed upon by coyotes and birds of prey.

The Gila monster's bite causes severe pain and a drop in blood pressure; death may result from respiratory failure or cardiac arrest. If unlucky enough to be bitten, get medical attention. The teeth are very brittle and may break off in the wound, so a tetanus shot is also a good idea. There are no documented cases of humans dying from a Gila monster bite.

Harassment and/or possession of Gila monsters are prohibited under state and federal law. Because of this, and the fact that they are venomous, they should be left alone. The Gila monster is not yet an endangered species, but protection of its desert home is essential to insure its continued presence.

**Rattlesnakes**

As a group, venomous snakes are some of nature's most efficient hunters. The use of venom to capture prey helps conserve energy that would otherwise be needed to capture and subdue an animal.

Like other reptiles, rattlesnakes are not actually cold-blooded, but are affected by outside temperatures. They are most active in the warmer months, but may be seen out sunning on warm winter days. Generally, they prefer temperatures between 70° - 90° F, regardless of the time of year. Contrary to popular belief, they cannot tolerate extreme heat, and may die if unable to find shade.

Rattlesnakes are members of a group of snakes called "pit vipers". The pits are part of a sensory system that no other vertebrate has. They are located between the eyes and nostrils, and can detect temperature differences of perhaps fractions of a degree. This "heat vision" is useful in locating prey even in total darkness. They also have chemoreceptors on their tongue to help locate prey.

Rattlesnakes have long, curved fangs that fold back when not in use. When the snake strikes, its fangs rotate forward. Since they are hollow, this allows the snake to inject venom directly into the victim. The venom is generally used to assist in capture and digestion of prey. Adult rattlesnakes are able to control their venom flow, and usually conserve it when biting for self-protection.

Rattlesnakes give birth to live young. Depending on the species, there may be as many as two dozen babies, which average 6 – 12" in length. The young are born fully equipped with fangs and venom, and are capable of inflicting painful bites. For years, it was assumed that rattlesnakes did not care for their young after birth. Research is showing that this may not be correct; most species appear to stay with their young for several weeks.

The snake is born with a non-functional rattle, or "prebutton", which will be lost at the first shedding, and replaced by a button. A new segment is added with each shed skin, as many as four per year. Segments vibrating at 60 or more times per second create the distinctive noise. Since rattles are easily broken, it is impossible to age a snake by counting the segments.

There may be four different species of rattlesnake at Tonto National Monument:

Western Diamondback (*Crotalus atrox*) – one of the most common snakes in Arizona, it has diamond-shaped or hexagonal markings along the center of the back and a light eye stripe from the eye to the upper lip. Because of the distinctive black and white bands on the tail, it is often called a "coontail".

Arizona Black (*Crotalus viridis cerberus*) – a subspecies of the western rattlesnake, they are normally found at higher elevations. At Tonto, they prefer more wooded or moister habitats. Adults may be dark gray or black to olive, with dark brown or black markings. Some individuals may be almost solid black.

Black-tailed (*Crotalus molossus*) – a large brightly patterned rattlesnake with dark coloring above the rattles and on the snout. They are often confused with Mojaves due to their green and yellowish coloration.

Mojave (*Crotalus scutulatus*) – often confused with western diamondbacks or blacktail rattlesnakes, they generally have a greenish cast, and the black tail bands are slightly narrower than the white. Herpetologists also look for 2 - 3 large scales between the eyes. Although the Monument is within this snake's range, it has not yet been confirmed here. Generally, Mojaves prefer flat desert areas without rocks.

What should you do if you encounter a snake? Maintain a safe distance. Rattlesnakes do not have to be coiled in order to strike. Never try to handle one, even if it is dead. If you are bitten, get to a hospital as quickly as possible. Most traditional first aid remedies are no longer recommended.