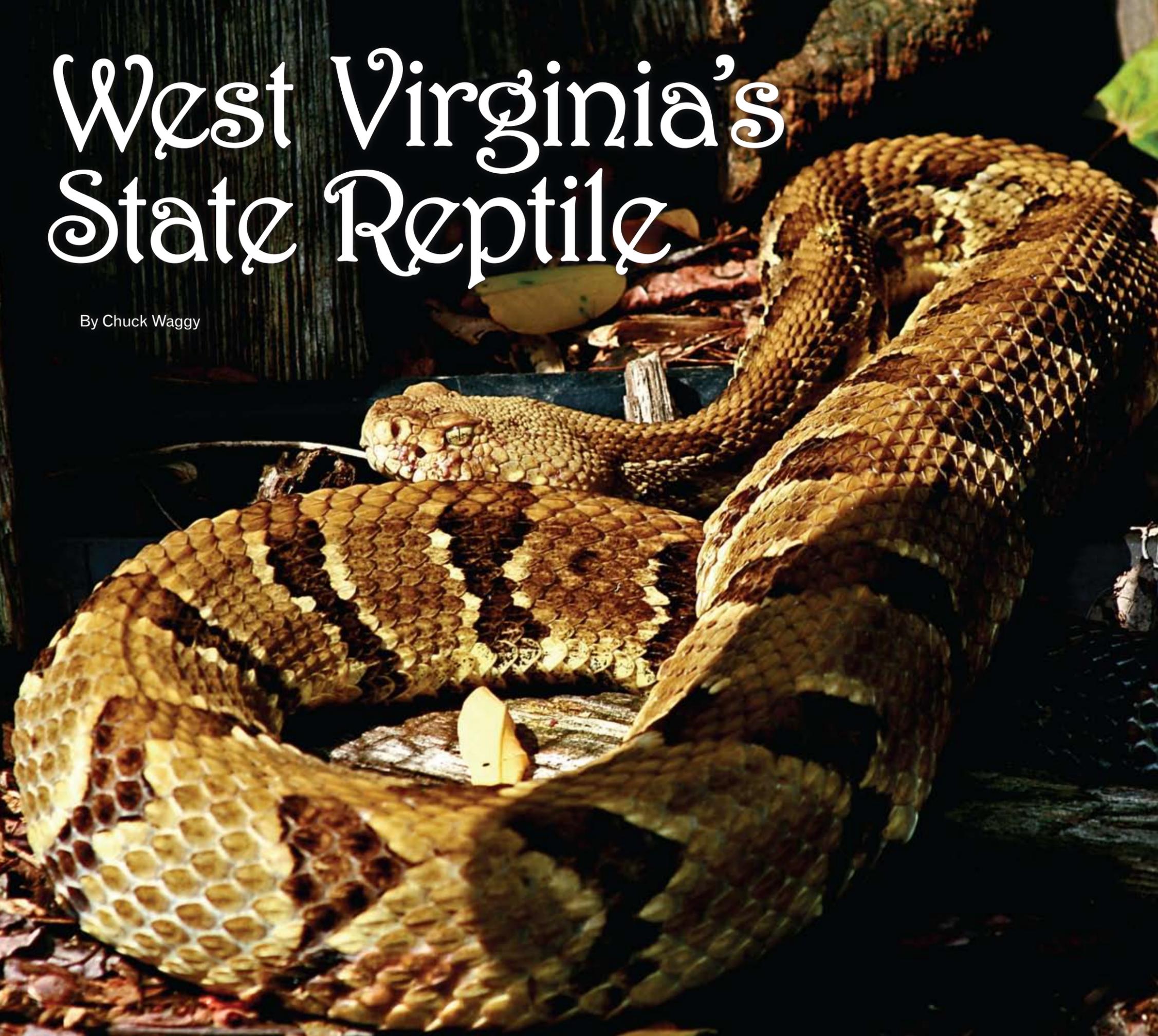


West Virginia's State Reptile

By Chuck Waggy



“DON'T TREAD ON ME.”



Barbara Sargent

This famous slogan imprinted alongside an image of the timber rattlesnake on the Gadsden and the First Naval Jack flags of the American Revolutionary War era was intended to send a message to England to not interfere with the affairs of the American Colonies. This illustration and the accompanying slogan was one of the earliest depictions of the supposed ferocity of the rattlesnake. Actually, the warning on the early flags was not meant to depict the timber rattlesnake as being ferocious or the American people as being warlike. The true message was that the citizens of the Colonies were a peaceable and freedom-loving people, but if England's King George III continued with his oppressive policies toward the Colonies, then they would respond with great wrath.

This response would be much like that of a timber rattlesnake, which is peaceable and slow to anger, but will attack aggressively when provoked and will not stop fighting until the enemy retreats. Benjamin Franklin, writing as an anonymous person, submitted the following statement concerning the disposition of the timber rattlesnake to the *Pennsylvania Journal* in 1775: "She never begins an attack, nor, when once engaged, ever surrenders: She is therefore an emblem of magnanimity and true courage. ... she never wounds 'till she has generously given notice, even to her enemy, and cautioned him against the danger of treading on her."

The timber rattlesnake is a shy, secretive creature of remote habitats and presents little or no danger to humans unless it is disturbed or surprised. The historic range of the timber rattlesnake encompassed all or parts of 32 states from eastern Texas to southern Minnesota, eastward to the Atlantic coast and north

Ron Snow



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A new segment is added to the rattle each time the snake sheds its skin.

to Maine. While once fairly common within this range, its populations have been severely reduced by human activities. Timber rattlesnake populations are now considered extirpated from two of these states. It is listed as threatened or endangered in nine states and protected by other laws in 12 other states.

At the time of European settlement the timber rattlesnake was believed to inhabit all of present day West Virginia. Presently it is thought to occur only in about half of the counties, mainly those in the southern, eastern and northeastern portions of West Virginia. In 2008 the West Virginia Legislature designated the timber rattlesnake as the State Reptile. It is listed as a species of concern on the Monongahela National Forest.

The timber rattlesnake is the only rattlesnake species inhabiting West Virginia. It can be distinguished from all other snakes found in the state by the presence of a segmented rattle on the end of its tail, which is used as a warning device. The timber rattlesnake, as well as West Virginia's only other venomous snake, the northern copperhead, can be distinguished from non-poisonous snakes by several characteristics. Venomous snakes have triangular-shaped heads, vertical pupils, and a single row of scales on the underside of their tails. Both the rattlesnake and copperhead are classified as pit vipers because they have a heat-sensing organ located between the eye and nostril that helps them locate warm-blooded prey.

The coloration of the timber rattlesnake can vary from sulphur yellow to almost solid black with many variations between the two colors. All timber rattlesnakes, regardless of color, have 15-30 dark, chevron-shaped cross bands across their backs, and all have velvet black tails. The sex of a rattlesnake

cannot be determined by its coloration. Some studies, however, suggest that a higher proportion of males are of the dark phase. Other studies indicate that the black coloration tends to be more common in snakes found in higher elevations. The darker colors allow for more heat absorption and may be a thermo-regulating adaptation to the cooler temperatures at higher altitudes. Adult males average about 43 inches in length, with larger individuals sometimes exceeding 50 inches. Adult females average about 38 inches in length. Timber rattlesnakes can live for 20 to 30 years. Rattlesnakes can be active at any time, but usually become more active at night during hot weather. Rattlesnakes also have thicker, stockier bodies than other snakes in West Virginia.

Bites to humans by timber rattlesnakes are rare; however, there is a potential for serious injury or death if a rattlesnake bite does occur. If a rattlesnake is encountered, simply stay at least 10 feet from the snake and enjoy viewing this magnificent creature. After you have viewed the snake, detour around it and continue on your hike or allow the snake to crawl away. Never attempt to handle or otherwise molest a rattlesnake as these actions are the major cause of most bites. A rattlesnake will defend itself vigorously if it feels threatened. When in rattlesnake country, especially in brushy areas or tall grass, always wear long pants and boots. Never put your hands in rock crevices, holes, hollow logs or under rocks where you can't see. When crossing a log, always step on top of the log, pause and look down on the far side of the log to be sure a resting



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Dark phase timber rattlesnake in defensive strike position.

Yellow phase rattlesnake. ▶



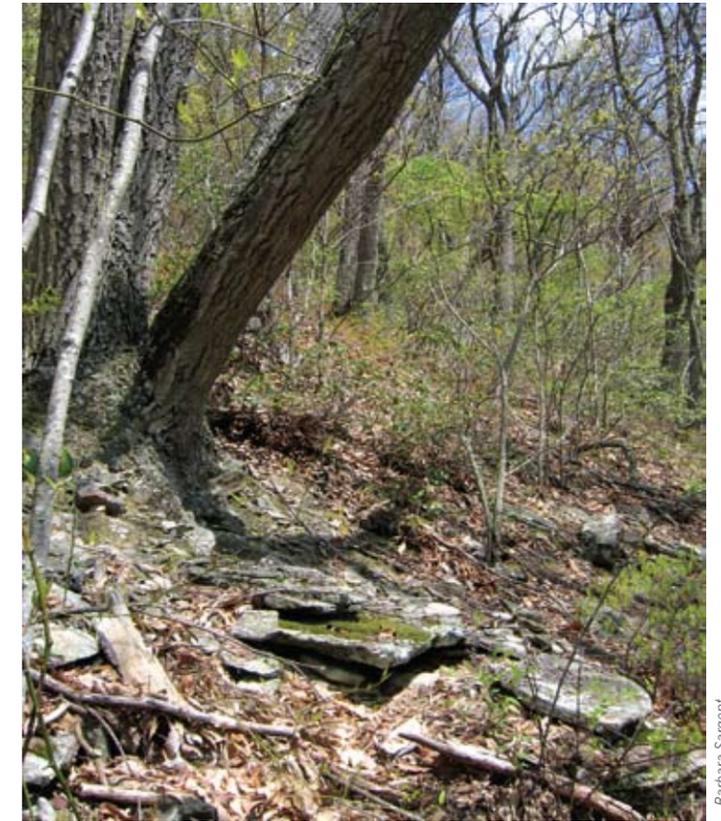
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rattler is not there. You do not want to surprise it! When camping, always use a light at night and wear shoes when walking around your campsite.

Rattlesnakes can be discouraged from staying around human residences by removing nearby wood, rock and trash piles, keeping grass trimmed short, and removing tin, boards and other debris that may provide cover for snakes. If a rattlesnake bite does occur it is important to remain calm, remove any potentially restricting jewelry such as rings and bracelets, and immediately seek medical help. Do not drink alcohol or attempt to perform any field first aid procedures such as applying ice or constricting bands. These procedures are ineffective and could even compound the problems associated with snakebite.

The timber rattlesnake's year begins with the warming days of late April and early May when it leaves its winter den where it has hibernated for the past six months. Upon emerging from the underground dens, snakes spend several days basking nearby to regulate their body temperatures. They soon start feeding and begin moving to habitat where they will spend the summer. Pregnant females may move only a few hundred yards to a suitable area for giving birth, while males and non-pregnant females may travel as far as two to four miles to areas that will provide food and cover. This habitat is usually forested land or clearing edges where small mammals such as chipmunks, voles and white-footed mice are abundant. Timber rattlesnakes are important predators in helping control rodent populations.

During late May and early June, all rattlesnakes shed their old, dull skin and replace it with a brilliant new one. A new segment is added to the rattle string at each shedding. The age of a rattlesnake cannot be



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Rattlesnakes locate den sites, such as this one, in rocky areas which receive several hours of sunlight each day.

accurately determined by the number of rattle segments because some rattlesnakes shed more than once a year. Young, vigorously growing snakes may shed three or four times a year while pregnant females may only shed once a year. Older snakes will likely break off some rattle segments. About a week before shedding, a rattlesnake's eyes turn bluish from fluids that are produced to assist with removing the old skin. A few days before the actual shedding begins, the eyes again become clear, signaling that shedding is imminent.

Pregnant females move to more open areas, known as rookeries or birthing areas, where they will spend the entire summer preparing to give birth. The timber rattlesnake gives birth to live young. The eggs (embryos) are incubated within the female's body. The birthing areas chosen by these females are usually rock outcrops, hollow logs or stumps. These areas provide ample sunlight to warm their bodies to proper temperatures to allow for the proper embryo development. During this time the female rattlesnakes don't eat, devoting all their time to absorbing warmth and conserving energy to ensure development of the embryos. Birthing occurs in late August through early September. Average litter size is about six, and

newborn rattlesnakes are 10 to 11 inches long.

Regardless of the coloration of the parents, all newborn timber rattlesnakes are grayish in coloration. Newborn snakes have a small protuberance at the end of the tail known as a pre-button. Young rattlesnakes can be confused with young snakes of other species because of the gray coloration, which is common among young snakes, and because of the difficulty in seeing the tiny pre-button. Seven to 10 days after birth the young rattlesnakes shed their skins and begin to exhibit the yellow or black coloration that they will have all of their lives. During this first shedding, the pre-button is shed and the young snake will obtain its first rattle segment, called a button.

Newborn rattlers have fully formed venom sacs and fangs and are capable of biting and injecting venom. The adult females may spend a few days at the birthing site. This is probably because of a resting period for the female after giving birth. The female does not provide any care for the young after they are born. Females don't breed until they are six to eight years old and will only produce young every three to five years. Pregnancy and birthing cause a significant depletion of fat reserves in the female's body. If she is unable to adequately feed and replenish these reserves before denning, she may not survive the winter.

The breeding season of the timber rattlesnake occurs from mid-July to September. During this period, adult males travel day and night over large areas actively seeking receptive females. This is usually the time when dead rattlesnakes are observed on roads and photos of rattlesnakes appear in local newspapers. During September, with the breeding and birthing seasons finished, adult rattlesnakes focus on feeding to put on fat reserves before migrating toward the winter dens, known as hibernacula, to hibernate. Some actively growing snakes will shed again. Recently born rattlesnakes will be attempting to obtain their first meals, usually very small mice, and following the scent trails of adults migrating toward the dens. Rattlesnakes must find their own way to these dens or risk freezing. Dens are usually located on south- or southwest-facing

slopes amid rocky outcrops or talus slopes. Dens must provide habitat for the snakes to spend the winter below the frost line. Rattlesnakes begin arriving at the den sites during late September. Depending on the weather, all snakes should be hibernating by the end of October.

The greatest threat to the timber rattlesnake in West Virginia is habitat destruction. Mountaintop removal mining, construction of site pads for wind turbines and oil and gas wells along with their associated roads and supply lines, and highway construction contribute to the destruction and disturbance of snake dens, feeding areas and snake movements. These activities can further stress rattlesnake populations by providing humans with easier access into rattlesnake habitat. Real estate developments in rattlesnake habitat can

disrupt dens, interfere with feeding and birthing areas, and increase encounters between humans and rattlesnakes. Other threats to the timber rattlesnake are indiscriminate killing of snakes, excessive and illegal collecting, and frequent disturbances to dens and basking areas.

The timber rattlesnake is as much a symbol of the wild and remote areas of West Virginia as the brook trout, black bear, snowshoe hare, bobcat and fisher. All West Virginians should strive to ensure that this symbol of wildness does not vanish from our mountains.

Chuck Waggy is a wildlife biologist stationed in Romney.



Young rattlesnakes exhibit a gray coloration.

Barbara Sargent

West Virginia Wildlife

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Visit www.wchstv.com to watch two segments of **West Virginia Wildlife** on rattlesnakes in West Virginia and what the DNR is doing to monitor their populations.

