

The Carpet Python

Carpet pythons have long been a favorite among reptile enthusiasts, and once you've owned one, it's not difficult to see why.

Text and photos by Will and Mary Leary

Carpet pythons (*Morelia spilota* ssp.) have long been a favorite among reptile enthusiasts, and once you've owned one, it's not difficult to see why. For me, it was simply a matter of viewing a color photograph of one in the pages of a thick, hardbound book, *Living Snakes of the World* by John M. Mehrrens, which my parents bought for me when I was about 13 years old. By that time, I was already experienced in keeping many different snakes found near my home in South Florida, but from that moment on I had my heart set on carpet pythons! Jungle carpets, such as this 2-year-old female, are one of the most popular and colorful of the available carpet python subspecies.

The problem was that back then, carpet pythons were not as readily available as they are today, and it would be several years before I actually acquired one. In more recent years, I've enjoyed maintaining a collection of carpet pythons larger than I could ever have imagined.

Both novice and advanced hobbyists find carpets undemanding and rewarding snakes to keep. They have the kind of exotic appeal and impressive size that you would expect from a python, without the risk of it outgrowing your home. Most have pleasant dispositions and are easily handled. Carpet pythons are hardy feeders and prolific breeders in captivity. They are also available in a wide variety of beautiful colors and patterns, including both the naturally occurring locality variations, and genetic color and pattern mutations. And because they are semiarbooreal, these snakes often perch or bask in plain view where their beauty may be enjoyed.

From roughly the early to mid-1980s through the late 1990s, carpets enjoyed a popularity few snakes have rivaled. The introduction of the jungle carpet made a lasting impression on the reptile community and subsequent selective breeding efforts — coupled with a few long-awaited morphs that have recently started to surface — have caused many people to “rediscover” the spectacular carpet python.

Meet the Carpets

There are several recognized varieties of carpets, including the coastal carpet (*Morelia spilota mcdowelli*), jungle carpet (*M. s. cheynei*), southwestern carpet (*M. s. imbricata*), northwestern carpet (*M. s. variegata*), inland carpet (*M. s. metcalfei*) and centralian python (*M. s. bredli*). All but one of these are found exclusively on the continent of Australia, the exception being the Irian Jaya or New Guinea carpet (*M. s. variegata*), which some authorities consider to be a separate subspecies (*M. s. harrisoni*).

This is an adult female coastal carpet (*M. s. mcdowelli*), likely of Brisbane locality.

For the purposes of this article, we will try to direct most of our attention toward the carpets most commonly kept in U.S. and European collections. These species include the jungle, coastal and Irian Jaya carpet. We will also touch on some different aspects of the diamond python (*M. s. spilota*), which are very closely related to carpet pythons.

Natural History

Carpets cover a wide variety of natural habitats, ranging from hot and humid rain forests to arid grasslands and even into the drier desert regions of central Australia. Much like common American rat snakes, carpets are commonly found living among human habitations (in attics, garages, barns and other inhabited or abandoned man-made structures). Human structures provide them with suitable shelter from the elements, and food sources are plentiful in these areas.

Being basically nocturnal, carpets emerge from their daytime hiding spots only to bask for short periods of time in warm sunlight, when temperatures are not too intense. Carpet pythons are often found crossing roads at night, either searching for a mate or a delectable meal. Unfortunately, many of these snakes are killed by automobiles.

Carpet pythons may forage for food in trees and dense vegetation within their range, but radiotelemetric studies conducted in 1988 (Slip and Shine) revealed that carpet pythons are primarily ambush predators. They will sometimes drape the first third of their body over a branch in an “S” shape and remain still for several hours, waiting for an opportunity to strike. They will also strategically place themselves near frequently used animal trails, again, waiting for something to pass by.

Like all species of the genus *Morelia*, carpet pythons undergo a dramatic ontogenic color change as they mature. Coastal and jungle carpet hatchlings typically start off rather drab in appearance and gain color and contrast with age. Some coastal carpet localities produce offspring with beautiful red, orange or yellow colors, whereas Irian Jaya carpets consistently hatch out with either orange or red coloration. These colors noticeably change within the first few sheds. However, adult coloration takes a few years to fully develop.

Irian Jaya or New Guinea carpets (*M. s. variegata*), such as this adult female, are now the only carpet pythons being imported to the U.S. and Europe.

Jungle Carpets

Jungles are without a doubt one of the most popular and colorful of all the available carpet pythons. They are a medium-sized python that attains an average length of 5 to 7 feet, with males being consistently smaller than females (as is the case with all carpet python species). Jungles are indigenous to the very warm and humid tropical rain forests of northeastern Australia, known as the Atherton Tablelands. Jungles are normally found in trees or thick vegetation above the ground near the numerous waterways and tributaries that flow through the region.

Jungle carpets are most noted for their trademark jet black and brilliant yellow bands, though they are more commonly black or brown contrasted by gold or tan. They can also occasionally be black and white or ivory.

Maturity normally brings a certain degree of "tipping." This is when dark flecks of melanin invade the lighter portions of the pattern, but yellow tipping can also develop within the black bands, which is quite attractive. Tipping can appear as either a rich speckling or a dark muddy wash. The selective breeding efforts of various individuals over the past several years have been geared toward eliminating dark tipping from the lighter portions of the pattern in order to create cleaner, brighter-appearing animals.

The authors maintain their collection of carpet pythons in custom plastic cages at their facility.

Hatchlings are normally grayish tan or amber contrasted by either brown or black. The pattern is normally banded, but it can also be partially or completely striped or randomly blotched.

Coastal Carpets

Coastal carpets are sometimes referred to as "Queensland" carpets and are the largest of the carpet pythons. They have been known to attain lengths of up to 14 feet, but specimens in U.S. collections rarely exceed 9 feet. They populate a large stretch of the eastern coast of Australia, overlapping the natural range of the jungle carpet to the north and extending into the diamond's range in the south. Natural intergrades occur where their ranges overlap.

Hatchlings are shades of tan, brown and white, and some localities (such as Brisbane) are known to produce red- or orange-phase neonates. Very little has been done in the way of selectively breeding the coastal for color. Proven genetic mutations for the coastal include the axanthic, tiger (or tri-striped) and jaguar, which has manifested itself in numerous different forms.

Diamond pythons (*M. s. spilota*) originate in southeastern Australia, where overall temperatures are cooler. This results in a darker and more diurnal snake.

Irian Jaya/New Guinea Carpets

Irian Jaya/New Guinea carpets represent one of the smallest varieties. Mature specimens attain average lengths of 4 to 5 feet, but are occasionally known to reach lengths of up to 7 feet.

Hatchlings have beautiful red or orange coloration, which will continually change throughout most of their lives. Adults are tan, golden or straw yellow, with rust-orange or chestnut-brown markings outlined in black. Their patterns can be banded or dorsally striped (partially or completely).

These are one of the more arboreal of the *Morelia* species and inhabit forested areas throughout their home range. These represent the only carpet pythons still being imported to the United States and Europe. In the not-too-distant future, we will probably start to see even better examples of this species, as more emphasis is placed on selectively breeding them for color and pattern. Currently, the only proven genetic mutation for the Irian Jaya carpet is the granite. (Note that Irian Jaya is now officially called Western Papua.)

Breeding carpet pythons is usually achieved after a cooling period. Copulation is generally observed within the first couple days of a male being introduced into a female's enclosure.

Diamond Pythons

Diamond pythons are native to southeastern Australia. The overall temperatures are cooler in this region compared to the places other carpets inhabit. At certain times of the year temperatures dip below freezing, which is likely the reason

diamonds have an overall darker coloration and are more diurnal than other carpets.

They are quite average in size, attaining lengths between 6 and 7 feet. They are nearly solid black, with a conspicuous yellow or white spot in the center of each scale, which forms an intricate design. Interspersed along the back are clusters of white or yellow scales (typically between four to six scales in a group) that form “rosettes,” giving the diamond python its name.

Unlike other carpet pythons, male diamonds do not combat with other males as part of the ritual courtship. In fact, multiple males have been found attempting to breed with a single female. Another unique characteristic of diamond pythons is the propensity of females to construct primitive nests where they deposit their eggs. Carpet python eggs hatch approximately 50 to 58 days after they are laid. These newborns are jungle carpets.

Python Enclosures

Housing your carpet python is a very important consideration, so be sure to take time to carefully examine your options. There are many enclosure variations to choose from. We highly recommend selecting from one of the numerous online businesses that offer well-constructed plastic cages made specifically for housing reptiles. This decreases chances of escapes or injuries to your animal. These cages are easier to clean than other enclosures might be (making the cage a more sterile environment), they are also lightweight and most are stackable. With the door located at the front rather than the top, the cage retains heat and humidity more efficiently. Plastic cages also allow snakes to feel more secure, because four of the five exposed sides are opaque. Best of all, these cages are quite affordable.

We house our adult male carpets in custom plastic cages that are 3 feet long by 2 feet wide by 18 inches tall, and our adult female carpets in cages measuring 4 feet long by 2 feet wide by 18 inches tall. If you have the available space, most will do just as well in slightly taller cages. Remember too that larger cages are harder to heat. These jungle hatchlings will accept fuzzy mice or pinkie rats.

Carpet pythons are semiariboreal and will benefit from a few sturdy branches mounted inside their enclosures. They will take advantage of any extra height given. No, it's not always essential, but it does allow snakes more space to stretch, exercise and perch above the floor of the cage. This may help them to feel more comfortable and reduce stress. We've observed that certain carpets are more inclined to climb than others (not only between the different subspecies, but also between individuals within the same subspecies). Be sensitive to the needs of individual snakes. It should also be noted that some carpets might be more inclined to feed from a perched position.

Cage Setup

The first thing most people want to do when they get a new snake is to set the cage up like a tropical rain forest, attempting to recreate the snake's natural environment. In our experience, simpler is better. Vivarium-type enclosures tend to make cleaning more difficult, and the snake typically ends up knocking over plants and other decor. We use newspaper, or corrugated, thick, brown paper as a substrate. It doesn't look very much like the “natural” habitat that you may have envisioned, but it's a time-tested method that works well. These types of substrate are readily available and inexpensive to replace. Pine shavings and other wood chips are commonly used with success, but ingesting this substrate could cause complications for the animal. It also encourages spot cleaning (which we discourage) and provides a potential breeding ground for mites.

Because carpets spend much of their time hiding in the wild, it's a good idea to make sure that captives feel secure. Hideboxes provide the snake with a sense of security and should be just large enough for the snake to fit inside. Your carpet will want its body touching the hidebox on all sides. Hideboxes can be made from ordinary household objects, such as cups or cat litter pans. If made of materials like plastic or porcelain, they are easy to clean.

The cage should be set up so that the snake can find a comfortable temperature. The carpet python may have many different temperature needs within the same day, depending on slight variations in the ambient temperature, etc. There should be a cool side and a warm side in their enclosures. With a hot and a cool side, the snakes can decide how warm or cool they want to be within a standard gradient. Coastals, jungles and Irian Jayas seem to do well with a temperature gradient of 80 to 90 degrees Fahrenheit.

Cagemates

Housing more than one carpet per cage is not recommended, unless you are trying to breed them. When carpets are housed together, typically one subtly takes a dominant position, while the other assumes a more submissive role. After a short time, the submissive snake commonly stops feeding due to elevated stress levels and can become sick, while the dominant snake occupies the choice spots in the cage and continues to feed. It is also easier to keep accurate records of individual animals when they are housed separately.

Male carpets are aggressive combatants during breeding season (similar to that of male rattlesnake “dances”). Mature males engage in combat for a female that is ready to breed. The two carpets raise themselves upward while intertwining. Each intermittently “jolts” and tries to pin the other’s head to the ground. It has been demonstrated in other boids that the winner of the wrestling match will produce large quantities of testosterone. As a result, the winner will have a stronger urge to breed and produce increased amounts of sperm, while the opposite is true for the loser.

Placing two adult males in one cage can be a dangerous mistake, especially if there is a female within close proximity that is emitting pheromones signaling to the males that she is ready to breed. If the snakes start to combat within a confined space, the vanquished male has nowhere to flee. As a result, the victorious male can inflict serious, or even fatal, wounds to the other snake through biting and constriction.

Temperament

Hatchling and juvenile carpets can be nippy, but their bites are fairly inconsequential. Most eventually grow out of this behavior and calm down as they mature.

Although adults are typically docile, they should be handled with respect. If startled or handled carelessly, adult carpets can deliver a substantial bite with their large, curved teeth. If you start off with a juvenile and take the time to observe its habits, in time, you will start to discern some of its body language to know when it is relaxed, agitated or expecting food.

Feeding Time

Feeding carpets is very much like feeding any other python. Typically, carpets can be fed once every five to seven days. They can accept food items approximately one-third larger than the diameter of the thickest portion of their body. Hatchlings prefer fuzzy mice or newly born pinkie rats. Juveniles quickly accept adult mice or small rats, and adults take medium- to jumbo-sized rats, depending on the snake’s size. Chicken is also a food item that may be tried, though we currently don’t offer it to any of our stock.

Breeding Carpets

Breeding carpets (excluding diamonds and centralians) is pretty straightforward. There are many methods that have worked successfully for lots of different carpet breeders. The following method has consistently worked well for us.

Our female carpets are fed generously during the summer months. The goal is to keep them robust without making them obese. Overweight females don’t make good breeders. Our females are fed approximately every one to two weeks, while our males are fed every two to three weeks to keep them on the leaner side. Heavy males tend to have a poor libido.

In early October we let the room get slightly cooler and wait for one of the males to refuse food. This is our trigger to stop feeding both the males and the females that we plan to breed. We allow about one month for their digestive systems to empty out and then proceed to further cool the snakes.

By the end of October, we start to steadily drop the nighttime temperatures down to about 65 degrees, while the daytime temperatures are kept between 75 and 80 degrees. In late November or early December, we start to slowly increase temperatures back to normal, and by December we start introducing the males to the females.

Courtship and copulation is normally observed within the first few days of introduction. We leave males in with females for approximately a week at a time and then separate them for about three days. This allows both males and females a resting period. After the three days we reintroduce the males to the females and start the process all over again. During this time the pairs copulate multiple times, though some pairs are more likely to breed with some seclusion.

Ovulation is normally observed in mid- to late January and is quite noticeable. Females swell up in the midsection for a period of one or two days and bask regularly until they deposit their eggs. Approximately 18 to 20 days after ovulation, females have their prelay shed. Oviposition occurs 19 to 25 days after that.

Clutch sizes differ between species. Irian Jayas are reasonably small compared to other carpets, and lay between six and 15 eggs per clutch. Jungles, being a bit larger, lay between 10 and 20 per clutch. And coastals, being the largest, lay between 15 and 30 per clutch. We had a coastal last year that dropped 39 eggs, 35 of which hatched. The amount of eggs a female is capable of laying can depend greatly upon her size, weight and health. The environmental conditions she is exposed to can also be a factor. Carpets reproduce once per year.

Incubation

Once the female has finished laying her eggs, we gently remove her from the clutch (use caution, females can be

protective of their eggs!) and place the eggs in a container with a lid and some small holes for ventilation. The clutch can be separated, if it is done very carefully), or they can be left intact. The egg container is set up with two layers of egg crate and filled almost to the top of the egg crate with wet perlite. The egg crate should sit above the perlite so that the eggs do not get wet. The egg container is then placed in the incubator. This is known as the “no substrate” method of incubation. Our incubation temperatures average between 88.5 and 89.5 degrees. The eggs normally hatch between 50 and 58 days later.

Conclusion

We have had the privilege to work with many snakes — pythons, boas, colubrids, domestic and exotic. But in our opinion, none have surpassed the majesty of the spectacular carpet python. We hope that you will have a new or rekindled love for a true gem of the ophidian kingdom.

Carpet Morphs

Several new carpet python morphs have emerged over the past few years, predominantly in Europe. Recently many of them have started making their way into U.S. collections.

More work is needed to understand exactly how the jaguar trait works. This is a red hypo jaguar.

Jaguar carpets. One of the more familiar morphs is the jaguar carpet python. The jaguar is a rare genetic mutation that originates from the coastal carpet python. The first jaguar was produced in 1994 as a result of breeding two seemingly normal coastals. In 1998, the trait was proven to be genetic, though it is still poorly understood. It seems to be working in a codominant fashion, in that the trait is expressed in one form or another in the first generation of offspring. This trait has proven to be much more complex than any other snake morph in existence. Several phases of the jaguar have appeared from the same genetic strain, including the hypo jaguar, red hypo jaguar, spotted red hypo jaguar, banded jaguar, patternless or “banana” jaguar and many more.

It is also worth mentioning that some of the “normal” siblings found among the jaguar clutches tend to differ to varying degrees from those of the wild type (normal unrelated coastals). Many (especially from the hypo and red hypo lines) develop dramatic contrast and brilliant color with age. Some closely resemble the pattern and coloration of a jungle carpet python (*M. s. cheynei*), and others look like diamond/jungle crosses. This is one reason we think the jaguar is not a typical codominant trait, but possibly a collaboration of multiple genes working together and/or independently. We hope to learn more about the genetic potential normal siblings possess.

This beautiful coastal carpet is a tiger morph, which is a co-dominant trait.

Tiger or tri-striped carpets. The tiger or tri-striped carpet is also a coastal carpet morph. This handsome morph has been widely underappreciated in U.S. collections for several years. They display prominent, broad, multicolored stripes running down the back and laterals. On some specimens, the stripes can be a brilliant yellow and completely unbroken from head to tail. It is a proven codominant trait without a known visible homozygous form.

Axanthic carpets. Another coastal morph, the axanthic originated in Sweden and represents another simple recessive trait. Axanthic animals lack xanthopores, which produce yellow pigment in skin cells. The result is an animal with a blue/black, white and gray appearance.

Granite carpets. The latest carpet morph to hit the scene originated in Holland in 2001 and is known as the granite. This is a rare genetic form of the Irian Jaya carpet and a proven simple recessive trait. Like the jaguar, the first granite produced came from two normal-appearing Irian Jayas. These snakes are speckled with orange, yellow, brown, white, black and purple scales that sometimes form complex patterns.

Jaguar phases include the hypo jaguar, re hypo jaguar, spotted red hypo jaguar, banded jaguar, patternless or “banana” jaguar and many more. Pictured is an adult male red hypo jaguar.

Albino carpets. In Australia, there is a breeding project involving an albino northwestern carpet python named “Blondie.” Several baby albinos have been produced, thus proving the trait.

Designer carpets. There have also been breeding projects going on around the globe, where people are breeding the jaguar to various other carpets, such as jungles, Irian Jayas and diamond/jungle crosses. Soon the jaguar gene will likely be carried over into the other forms of carpet pythons by breeding the hatchling jaguars back to their corresponding parent species. So far, the results have been amazing.

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