

# Crested Gecko

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## Natural History

*Rhacodactylus ciliatus*, more recently re-classified as *Correlophus ciliatus*, is a species of arboreal lizard native to New Caledonia. Until 1994, crested geckos were thought to be extinct in the wild. Their population was re-discovered, and although export is no longer allowed, this species has thrived in captivity and is readily available in the US pet trade. Cresties are crepuscular (active at dawn and dusk), and spend most of their day in shrubs or in trees. They get their name from the eyelash-like appendages that form the crests above their eyes. Unlike most geckos that are carnivorous, these animals are omnivorous, and primarily frugivores (fruit eaters). One of the biggest threats to wild crested geckos is the introduced little fire ant that not only swarms the geckos in large numbers, but also competes for arthropod prey. Crested geckos are considered “vulnerable” by the IUCN.

## Characteristics and Behavior

As with most geckos, cresties do not have eyelids, so they keep their eyes moist by licking them. Cresties are also able to climb vertical surfaces using tiny hairs on their feet called setae. Their tails are partially prehensile, though not to the same extent as a chameleon, and they possess tail autotomy (they can drop their tails). Unlike leopard geckos, when a crestie drops their tail, it doesn't grow back. However, they don't store fat in their tails so it is generally not as detrimental for a crestie to drop their tail, and the majority of wild cresties end up doing so. Cresties are relatively easy to care for, rarely bite, and are abundant in the pet trade. They also come in a variety of color morphs ranging from solid brown to dalmatian spots. They make excellent beginner lizards.

## Lifespan

15-20 years.

## Adult Size

7-9 inches.

## Housing

Adult crested geckos can be maintained in a 20-30 gallon terrarium, or an 18”x18”x24” (LxWxH). Given that this species is arboreal, it is beneficial for them to have more

height than length or width. Young crested geckos under 12g can be housed in small 5 gallon terrariums (8"x8"x12") but they must be upgraded as they grow. As with all reptiles, bigger is always better. Reptiles are not stressed by too much space, but by too much exposure. Providing adequate cover and enrichment will keep a reptile from being stressed by their environment. Plenty of branches, logs, and rocks should be provided so the gecko can climb and practice natural behaviors. It is especially important to have climbing structures under the basking area, so crested geckos can move closer to or farther away from the basking source. Plants (live or fake), ground clutter, and corkwood are all other excellent options for adding enrichment and cover to a crested gecko's enclosure.

Cypress mulch, EcoEarth, ReptiSoil, or Zilla Jungle Mix are all acceptable substrate options for crested geckos. They are unlikely to spend a significant amount of time on the ground, but care should still be taken to minimize the risk of substrate impaction. Feeding platforms, either on the ground or magnetically elevated, should be used to keep food off of substrate. At least 2" of substrate should be provided to help hold humidity. Geckos under 12g are better off on paper towels, as they are more prone to substrate impactions.

**Avoid CalciSand, VitaSand, crushed walnut, gravel, and corncob as these substrates carry a much higher risk of impaction. Always talk to your veterinarian before using loose substrate to ensure your lizard is healthy and your husbandry is correct. When using loose substrate, food should also be offered on a feeding dish to avoid ingestion of substrate. Live prey can also be offered with tongs.**

## Lighting

Like all lizards, crested geckos require UVB light to synthesize vitamin D3 in their skin. Vitamin D3 is needed for proper metabolism of calcium and prevention of metabolic bone disease. Studies done on leopard geckos, another crepuscular gecko species, have shown that leopard geckos exposed to UVB have higher levels of vitamin D3 in their skin. Therefore, it can be presumed that UVB is likely beneficial for other species with similar activity patterns. UVB has been shown to improve immune function and promote normal circadian rhythms in reptiles. The myth that certain reptiles don't need UVB likely comes from the idea that since these species are more active during low light, they aren't as exposed to the sun. However, wild geckos are still exposed to natural light at dawn and dusk and perhaps even by moonlight.

Arcadia's T5 7% ShadeDweller and T5 6% Forest are both acceptable choices, depending on where you set up your crested gecko's basking spot. Arcadia provides a guide as

to where to place your UVB fixture in relation to your crested gecko's basking spot. UVB fixtures should be roughly as long as half your reptile's enclosure length. It is important to note that UVB cannot penetrate glass, so natural sunlight through a window will not be sufficient for a lizard to synthesize vitamin D3. Allowing safe outdoor time is also an excellent source of UVB and visible light. Crested geckos taken outdoors should be kept in an escape-proof and predator-proof, non-glass enclosure. Provide shade and basking spots so your gecko can regulate their temperature.

Sunlight is made of ultraviolet, near infrared (IR), mid IR, far IR, and visible light. It is our job as keepers to provide full spectrum lighting, which means as close to sunlight as possible. Unfortunately there is not one source for all of these components, so we must provide multiple types of lighting. For visible light, LED or halide bulbs should be provided.

UVB is NOT optional for lizards. Lack of proper UVB can lead to impaired skeletal, muscle, and immune function. Replace UVB bulbs every 6 months, as they can continue to give off light even when not producing UVB. Lights should be turned off at night to maintain normal day/night cycles. For this reason, red or black nightlights should not be used as they can disrupt normal day/night cycles.

Arcadia UVB guide: <https://www.arcadiareptile.com/lighting/guide/>

## Heat

Unlike mammals, reptiles cannot internally regulate their temperature and rely on their environment to heat and cool themselves. Therefore, it is important that we provide captive reptiles with a temperature gradient so they can warm up or cool down as needed. Reptiles have three temperatures to measure: basking spot, warm ambient, and cool ambient. The basking spot is the hottest area in the enclosure where they bask, the warm ambient is the air temperature on the warm side of the enclosure, and the cool ambient is the air temperature on the cool side of the enclosure. Ambient temperatures are best measured with digital thermometers (one on the warm end and one on the cool end), as analog thermometers are often inaccurate. Basking temperatures can be measured with a digital infrared thermometer.

Crested geckos need a basking spot of 80-85F, a warm ambient of 77-80F, and a cool ambient of 70-75F. Temperature should not rise over 85, as this can cause heat stress. Any light emitting sources should be turned off at night and temperatures can drop to the mid 60s. If needed, a non light emitting source like a ceramic heat emitter, radiant

heat panel, or deep heat projector can be used to maintain temperature. Sunlight is made of UV, near IR, mid IR, far IR, and visible light. Flood tungsten-halogen bulbs are the most efficient at producing near IR, which is the most abundant IR in sunlight, and they also produce significant mid IR and some far IR. Far IR is the least abundant in sunlight, but is most often produced in large amounts by sources like ceramic heat emitters, heat pads, and radiant heat panels. Tungsten-halogen bulbs should be the flood type to ensure a wide enough basking site. These heat producing bulbs can be found as reptile specific bulbs or at hardware stores. Avoid hot rocks as these can easily burn reptiles.

## Humidity

Crested geckos need an ambient humidity of 50-80%. This should be measured with a digital hygrometer and can be achieved by mixing water into the substrate to dampen it (but not making it sopping wet) or misting with a pressure sprayer. A humidifier can also be placed next to the gecko's cage to aid in humidity retention. Enclosures without screen tops can also hold humidity better. Care must be taken to not sacrifice ventilation for humidity. Stagnant air and poor ventilation can lead to molding and respiratory infections. It is natural for even tropical reptiles to have humidity dips during the day, and spikes at night. Therefore, it may be appropriate to provide moderate humidity during the day and higher spikes at night.

Humidity spikes can be accomplished with heavy misting in the morning and evening. Either hand misters or automatic misters can be used. Additionally, 1-2 hours with an automatic fogger (which is functionally a small humidifier) at night can provide a humidity spike as well as a drinking opportunity.

## Feeding

Crested gecko diets are very similar to gargoyle gecko diets; they are omnivores that eat plants, nectar, fruits, and insects. In captivity, there are balanced, commercially prepared diets available for the bulk of the crestie's diet. Arcadia StickyFootGold, Repashy Crested Gecko Diet, Repashy Grubs n Fruit, or Pangea Fruit Mix With Insects are all good options. Magnetic wall mounted feeding ledges are useful for crested geckos, as in the wild they eat in trees. A few insects no larger than the gecko's head can also be offered 1-2x/week for additional protein and enrichment. If feeding an insect and fruit combination product, additional insects are not required but do make good enrichment. Fresh fruit or fruit smoothies are great as occasional treats for crested geckos. Adults should be fed every other day, and juveniles (<8 months) daily. Multivitamins are generally not required when using commercial diets.

Insects: Insects are naturally deficient in calcium and low in nutritional value. In order to make them nutritious for reptiles, all insects should be gutloaded (fed a highly nutritious meal 24-48 hours before feeding). Repashy BugBurger or Arcadia InsectFuel are good choices for feeding feeder insects. Insects should also be dusted with calcium powder 1-2x/week. Calcium powders should be calcium carbonate based and should not have any phosphorus. If you are providing adequate UVB, calcium powder does not need to contain D3. Arcadia, Repashy, and ZooMed all have good products. Follow your brand's recommendations to avoid overdosing. Crickets, phoenix worms, silkworms, dubia roaches, and hornworms are all acceptable insect choices. Mealworms and superworms have been known to cause impactions in crested geckos.

Fruit: Papaya, fig, prickly pear, raspberries, strawberries, pineapple, melon, mango, blueberries, grapes, apples without seeds. Avoid avocado and rhubarb.

## Water

A dish of clean, shallow water should always be available, although it may not be utilized. Cresties and other arboreal lizards tend to drink droplets off of surfaces, so this is another advantage of daily misting.

## Sexing

Males have a visible hemipenal bulge starting around 6 months of age. Crested geckos reach sexual maturity by 15-18 months.

## Zoonosis

Like other reptiles, crested geckos can carry *Salmonella*. Always wash your hands after handling reptiles or items from their enclosure.

## Health

Crested geckos are prone to nutritional-secondary hyperparathyroidism (metabolic bone disease), dysecdysis (shedding problems), parasites, and substrate impaction. Cresties will drop their tail when stressed and it will not grow back. Never grab your crestie by the tail as this can cause a tail dropping response. A healthy crested gecko is active and alert. They should not spend a significant amount of time on the ground and their eyes should be free from debris. Crested geckos should be examined by your veterinarian every 6-12 months.

Sources and Further Reading:

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