

Western Banded Gecko (*Coleonyx variegatus*) Bioactive Terrarium Setup and Care

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Western Banded Gecko (*Coleonyx variegatus*)

Difficulty: Intermediate

Western banded geckos are small, terrestrial lizards native to the southwestern United States and northern Mexico. These lizards are desert generalists and can be found in a variety of desert-type habitats, including sand dunes, scrub, and rocky hills. They are primarily active at night, which time is spent mostly hunting for insects.

An adult western banded gecko is generally 6-6" long, with smooth skin, a large head, vertical pupils, long body, slender limbs, and an unsegmented tail. Unlike most geckos, they have eyelids, and their feet don't feature sticky toe pads. Pattern is strictly banded as juveniles, with

the bands breaking up into spots with age. Coloring is generally yellow with brown/black markings and a pale belly underside.

Although less popular than the better-known leopard gecko, western banded geckos are similar in care and can make great pets for new and experienced reptile enthusiasts alike. With good care, they can live up to 15 years.

What You Need for a Bioactive Western Banded Gecko Enclosure

- 36”L x 18”W x 18”H front-opening enclosure
- [Exo Terra Reptile Glow Light, small](#)
- [50w Arcadia Halogen Heat Lamp](#)
- [Bio Dude Digital Thermometer / Hygrometer, x2](#)
- Plug-in lamp dimmer
- [Arcadia Shade Dweller UVB Bulb + Fixture, 12”](#)
- [The Bio Dude Solar Grow T5 HO Single Bulb Light Strip, 24”](#)
- [Zilla 24/7 Digital Timer Power Center](#)
- [Terra Sahara Bioactive Kit, 29 gallon](#)
- [Leopard Gecko Clean Up Crew Pack](#)
- [Desert plants](#)
- Environmental enrichment items ([caves](#), [hollow logs](#), [sturdy branches](#), etc.)
- [Food and water bowls](#)
- [Repashy Calcium Plus supplement](#)
- [Zoo Med Stainless Steel 10” Curved Feeding Tongs](#)

Terrarium Size

Your new pet should be housed in **nothing smaller than a 20 gallon “long” enclosure**, with an at least 4” substrate dam for substrate. If you can afford larger, then it’s strongly advised to do so. When the space is properly utilized, bigger is always better. For maximum convenience and less risk of frightening your gecko, get an enclosure that opens from the front rather than from the top.

Western banded geckos generally get along in groups. This is not required for their mental wellbeing, but a 20 gallon enclosure can adequately house up to 3 geckos. Males and females should only be housed together for breeding purposes, and males should never be housed with other males!

Lighting

Banded geckos are nocturnal, which means that they are primarily active at night. This means that they can survive without exposure to UVB radiation but doesn’t necessarily mean they don’t benefit from it. In fact, current research indicates that nocturnal reptiles are likely to benefit when it is provided. Reptiles use UVB light to create the vitamin D that their body needs, as well as to strengthen their immune system, and stimulate production of endorphins. UVB even helps keep the enclosure free of pathogens, which is especially important for bioactive setups.

The **Arcadia Shade Dweller 7% UVB Kit** is likely to work best for banded geckos. The lamp should be placed on the same side as the heat sources, and the basking platform should be 8-13” below the lamp. This is because the strength of a UVB bulb’s output changes with distance.

Your UVB bulb must be replaced every 8-12 months to maintain its output. Resist the temptation to use other brands — when it comes to UVB, *brand matters!*

Because this is a bioactive setup, you will also need a plant light to encourage healthy plant growth. We recommend the **Bio Dude Solar Grow light strip** for this purpose. The light should span 75-100% of the enclosure's length.

Lights should be kept on for 12 hours/day or cycled seasonally from 14 hours/day during summer and 10 hours/day during winter.

Heating

Like other reptiles, western banded geckos are *poikilothermic*, which means that they need a range of temperatures within their enclosure so they can regulate their own body temperature as needed. Areas of heat speed up their metabolism and promote activities like digestion and healing. Cool areas slow the metabolism and promote activities like rest and energy conservation.

Western banded gecko temperature gradient:

- **Warm hide temperature:** 91°F
- **Cool side temperature:** 72-77°F

Heating should be turned off at night, but temps should go no lower than 65°F.

To create a basking area for your banded gecko, you will need a halogen flood heat bulbs like the **50w Arcadia Halogen Heat Lamp** (optimum wattage may vary) and a ~5.5" dome lamp fixture like the **Exo Terra Reptile Glow Light**. Place a small hide box (preferably a black plastic box hide) directly under the heat lamp, with a large piece of aquarium slate, sandstone, or flagstone on top to absorb heat.

To monitor your temperature gradient, place a digital probe thermometer like the **Bio Dude Digital Thermometer / Hygrometer** in the basking area, and then put another one on the cool side, preferably inside the humid hide.

If the warm hide gets too warm, you can plug the lamp into a lamp dimmer like the **Lutron Credenza** and reduce the heat that way. If the warm hide is too cool, you will need a **heat mat** to help. This should be roughly the same size as the warm hide and sandwiched between the hide box and the basking stone. The heat mat must be plugged into a thermostat like the **Zoo Med ReptiTemp Digital Thermostat** to make sure it doesn't accidentally bake your gecko. Place the thermostat probe inside the warm hide and set to 91°F.

Humidity

Some banded geckos like living in a humid environment, but western banded geckos prefer drier conditions. Keep ambient humidity levels at 50% or less, but the gecko should always have access to a humid hide with humidity levels of 70% or higher to use as needed. This is important to keeping your gecko well hydrated and ensuring healthy shedding. This hide should be lined with moistened substrate and placed on the cool side of the enclosure.

Pay attention to the water needs of the plants that you choose to use in your enclosure, and water them as needed. To help keep both your plants and CUC alive, keep the lower 1-2" of your substrate layer moist at all times. You can check this by sticking your finger into the substrate or by using a soil moisture meter.

Substrate

A thick layer of bioactive-compatible substrate is essential to creating a bioactive western banded gecko enclosure. This layer of substrate should be at least 4" deep (preferably deeper if you can, since this provides more room for your plants' roots).

Because western banded geckos require a relatively dry environment, no drainage layer is needed. Instead, you can jump right to the dirt. You will need a soil-like mix that mimics a higher humidity desert habitat and nurtures desert-type plants. If you want to make your own bioactive mix, you will need a mixture of 60% organic topsoil and 40% play sand (measured by volume), then mixed with leaf litter, sphagnum moss, and 1 dose of **36qt Bio Shot** to inoculate your soil with beneficial microfauna.

Alternatively, you can let The Bio Dude do the work for you with **The Bio Dude's Terra Sahara bioactive substrate kit**. Either way, make sure there's some wood and biodegradables on top for the CUC.

To make the substrate fully functional, make sure to add CUC organisms like Oreo Crumble isopods, powder orange/blue isopods, and arid springtails. You can also add other species like mealworms and super worms!

Decorating the Enclosure

Enclosure décor is about more than just making your setup look good. It's also an important part of providing *environmental enrichment* to your lizard, which enhances your pet's quality of life by providing opportunities to express natural behaviors. Although your banded gecko may not seem particularly active to your perception, they're usually quite busy at night. Use things like **low branches, cork flats/hollows, caves, ledges, and plants** for your gecko to explore and hide in.

Live plants in particular are critical to helping your mini-ecosystem function properly. Make sure the plants that you choose are drought tolerant. Good choices may include sedum, carex grass, opuntia cactus, aloe, haworthia, agave, and crassula.

It's also good practice to cover 3 sides of the enclosure, which helps your gecko feel less exposed and decreases stress.

Feeding Your Western Banded Gecko

Western banded geckos are insectivores, which means that they need to eat mostly insects in order to be healthy. Offer however much they can eat in about 5 minutes. Juveniles should be fed daily, and young adults fed every other day.

Make sure to feed your gecko as large of a variety of foods as possible:

- crickets
- dubia roaches
- discoid roaches
- red runner roaches
- black soldier fly larvae
- mealworms
- mealworm beetles
- small hornworms
- silkworms

- Feeder insects should be no wider than your gecko's head. ALL FEEDER INSECTS SHOULD BE LIGHTLY DUSTED WITH CALCIUM SUPPLEMENT BEFORE FEEDING.

Calcium & Vitamins

To ensure that your pet is getting all the vitamins and minerals they need, you need a calcium powder and a multivitamin powder. Take care not to use these too often; too much vitamins can be just as deadly as too little. **Repashy Calcium Plus** is a good way to provide a safe dose of each at the same time.

Water

Your gecko should always have access to fresh, clean drinking water. Choose a bowl that is shallow enough to prevent drowning. The water should be changed whenever it gets soiled. Scrub the bowl with an animal-safe disinfectant at least once a week.

Handling Tips

While leopard geckos are fairly handleable, banded geckos are a bit too small and skittish to be handled regularly — although each animal is its own individual, and some may be more tolerant of humans than others. If you want to try bonding with your gecko, try tong-feeding.

Care information courtesy of ReptiFiles.

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