Leopard Gecko

Eublepharis macularius (Blyth, 1854)

EXPERIENCE	LIFESPAN	ORIGIN	SIZE
Beginner	**15–20 Years**	**South/Central Asia**	**7–11" Adult**

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Quick Facts

SCIENTIFIC NAME	Eublepharis macularius (Blyth, 1854)
FAMILY	Eublepharidae
COMMON NAMES	Leopard Gecko, Common Leopard Gecko
ORIGIN	Afghanistan, Pakistan, NW India, Iran, Nepal
HABITAT	Arid/semi-arid rocky grassland & desert scrub
ADULT SIZE	7–11" (18–28 cm); females smaller than males
LIFESPAN	15–20 years in captivity
EXPERIENCE LEVEL	Beginner
ACTIVITY PATTERN	Crepuscular (most active at dawn & dusk)
VENOM	Non-venomous
TEMPERAMENT	Docile; tolerates handling well when socialized
CONSERVATION	Least Concern (IUCN)

Natural History

The leopard gecko is native to a broad arc of arid and semi-arid terrain stretching from eastern Iran and Afghanistan through Pakistan, northwestern India, and into Nepal. Throughout this range the animals inhabit rocky desert scrubland, dry grasslands, and clay-soil foothills where daytime surface temperatures can soar but rock crevices and burrows provide cool, shaded retreats. This reliance on microhabitat is central to understanding their captive needs: they are thermally driven animals that must be able to choose their own temperature at any moment.

Unlike the adhesive-toed geckos familiar from tropical images, leopard geckos belong to the family Eublepharidae — the eyelid geckos. They possess fully functional, movable eyelids and lack the sticky toe pads that allow other geckos to scale glass. They are entirely terrestrial, spending their days hidden under rocks or in burrows and emerging at dusk and dawn to hunt insects. This crepuscular pattern persists in captivity, so keepers should expect most activity and feeding interest in the evening hours.

Their plump tails serve as fat and water reserves — an adaptation to environments where food and moisture can be scarce for weeks at a time. A full, rounded tail is one of the most reliable indicators of good condition in a captive gecko. Captive selective breeding over several decades has produced hundreds of recognized color and pattern variations (morphs), but all share the same core husbandry requirements as the wild-type animal.

Housing

Enclosure Type & Size

Leopard geckos are terrestrial; floor space is far more important than height. A single adult requires a minimum of 40 gallons (approximately 36" × 18" footprint), though a larger enclosure — 48" × 24" or more — is always preferable and allows a more meaningful temperature gradient. Front-opening glass terrariums with mesh tops are ideal: they allow top-down heating, easy access without stressing the animal, and sufficient ventilation to prevent excess humidity buildup. Solid-sided tubs or rack systems are used by experienced breeders but reduce enrichment opportunities.

Juveniles and hatchlings can be kept in smaller enclosures initially (a 10–20 gallon is workable for geckos under six months), but should be transitioned to adult-sized housing as they grow. Enclosures should always be escape-proof — leopard geckos are more mobile than they appear.

Substrate

For juveniles and geckos under approximately eight months of age, use non-particulate surfaces such as paper towel, slate tile, or reptile-safe shelf liner. This eliminates any risk of ingestion and impaction while the animal is small. Adults in good health, kept at proper temperatures and with a varied insect diet, can be maintained on a naturalistic mix of topsoil and fine playsand (approximately 70/30 ratio), or on excavator clay. Loose substrate should never be the sole feeding surface for any age group — always offer insects via tongs or in a smooth-sided feeding dish.

> *Note on loose substrate: Impaction risk is real when geckos are cold, underfed, or nutritionally deficient. The safest approach is to address husbandry first and only introduce loose substrate once all other parameters are stable.*

Hides & Décor

Provide a minimum of three hides: one on the warm side, one on the cool side, and one moist hide. The moist hide — a small enclosed box lined with damp sphagnum moss or coco fiber — is essential for successful shedding and year-round access to microclimate humidity. Without it, retained shed (dysecdysis) on the toes and tail tip is common. Additional décor such as cork bark flats, rock slabs, and low branches provides enrichment and natural-feeling structure. Ensure no décor can topple and injure the gecko, and that no elevated surface is high enough to cause injury from a fall.

Temperature & Humidity

ZONE	TEMPERATURE	NOTES
Hot Hide / Basking	88–92°F (31–33°C)	Belly-heat via UTH or overhead; measured on substrate surface
Warm Side Ambient	80–85°F (27–29°C)	General warm side floor temperature
Cool Side Ambient	70–75°F (21–24°C)	Gecko self-regulates by moving between zones
Night Drop	65–72°F (18–22°C)	Mimics natural desert temperature swing; supplemental heat only below 60°F (15°C)
Ambient Humidity	30–40% RH	Whole-enclosure target; too high invites respiratory illness
Moist Hide Humidity	70–80% RH	Achieved with damp sphagnum moss inside one hide; replace moss weekly

Heat should be provided primarily from below (under-tank heat mat) or via a low-wattage overhead ceramic or deep heat projector — always connected to a quality thermostat. Belly heat is how leopard geckos digest; without an adequately warm surface, digestion slows and feeding problems follow. Confirm temperatures with a digital probe thermometer or a temperature gun, not the adhesive strip thermometers which are consistently inaccurate.

Lighting

Leopard geckos were historically kept without any UV lighting, but current research and veterinary consensus support the addition of low-level UVB for improved vitamin D3 synthesis, bone density, immune function, and natural behavior. A 5–7% UVB bulb (such as a T5 HO 6% or equivalent) placed 10–12 inches from the basking zone, running on a 12-hour on / 12-hour off cycle, is the current recommended approach. Albino morphs (Tremper, Bell, Rainwater) are highly light-sensitive and must have adequate hiding options available at all times when UVB is on.

If UVB is not provided, calcium supplementation with added D3 becomes essential at every feeding for growing animals and at least weekly for adults. Avoid colored night bulbs (red, blue) — leopard geckos can perceive these wavelengths and disrupted nighttime lighting negatively impacts their activity and stress levels. A plain ceramic heat emitter or deep heat projector is appropriate for nighttime supplemental heating if needed.

Feeding

Prey & Gutloading

Leopard geckos are obligate insectivores — they do not eat plant matter of any kind. The staple feeder insects for most keepers are crickets and dubia roaches, both of which offer an excellent protein and fat balance when properly gutloaded. Mealworms are widely accepted and convenient, though their higher fat content makes them better as a supplement than a staple. Black soldier fly larvae (BSFL/Calci-worms) are excellent for calcium content. Waxworms are high in fat and should be used sparingly — they are useful for building weight in underweight animals or as an occasional treat, but regular feeding can cause obesity and feeding refusal.

All feeder insects must be gutloaded 24–48 hours before feeding. Gutloading means feeding the insects a nutritious diet (leafy greens, squash, commercial gutload products) so that those nutrients transfer to the gecko. An ungutloaded feeder insect has minimal nutritional value. Prey items should be no larger than the width of the gecko's head to prevent choking and impaction.

Feeding Schedule & Supplements

LIFE STAGE	PREY SIZE	FREQUENCY	SUPPLEMENT SCHEDULE
Hatchling (0–3 months)	¼" crickets / nano-mealworms	Daily	Cal+D3 every feeding; multi-vitamin 2×/week
Juvenile (3–12 months)	■"–½" insects	Every other day	Cal+D3 every other feeding; multi-vitamin 1×/week
Sub-adult (12–18 months)	½"–¾" insects	Every 2–3 days	Cal+D3 2×/week; multi-vitamin 1×/week
Adult (18+ months)	¾" or smaller	2–3×/week	Plain calcium (no D3) available free-choice; Cal+D3 1×/week; multi-vitamin 1×/week

Always keep a small dish of plain calcium powder (no D3) available free-choice in the enclosure. Geckos self-regulate their calcium intake and will lick the dish as needed — this is normal and healthy behavior.

Feeding Refusal & Fasting

Short-term feeding refusals are common and usually tied to environmental factors: a temperature that is too low, stress from a recent move, an approaching shed cycle, or seasonal light changes. Check all husbandry parameters before assuming illness. Healthy adults can go several weeks without eating if body condition (tail thickness, no visible hip bones) remains good. Juveniles should not go more than a week without eating without veterinary evaluation. A gecko that refuses food for an extended period and is also losing body condition, showing lethargy, or has loose stools warrants a vet visit and fecal exam.

Water

Provide a shallow water dish at all times, changed at least every two days to prevent bacterial growth. The dish should be shallow enough that a hatchling cannot drown in it — bottle caps work well for very young geckos. Clean the dish and surrounding substrate regularly, as geckos often defecate near or in their water source. Leopard geckos may drink directly from the dish or from surface moisture, and will also absorb some moisture through contact with damp substrate in the moist hide.

Handling

Leopard geckos are among the most handleable lizards in the hobby when properly socialized. Allow a newly acquired gecko at least two weeks to acclimate to its enclosure before beginning handling sessions. Initial handling should be brief — five minutes or less — and conducted close to the ground so a fall does not cause injury. Let the gecko walk from hand to hand rather than gripping it; this keeps the animal calm and builds trust over time.

Never pick up a leopard gecko by its tail. The tail is an autotomized (drop-able) appendage, and a gecko that feels threatened by tail-grabbing will shed it as a defense reflex. The tail will regrow, but the regenerated tail has a different texture and shape from the original and the animal expends considerable energy in the process. Evening and dusk are the best times for handling sessions, as this aligns with the animal's natural active window. Watch for signs of stress — rapid tail-waving, squeaking, or biting attempts — and return the gecko to its enclosure if observed.

Shedding (Ecdysis)

Signs of an Approaching Shed

A gecko preparing to shed will typically dull in color — the skin takes on a faded, milky, or grayish appearance in the days before the shed begins. The animal may become less active, spend more time in the moist hide, and refuse food for up to a week. These behaviors are entirely normal. Do not attempt to remove the old skin prematurely or interfere with the process unless there is a clear problem.

During the Process

The shed typically begins at the head, with the gecko using its mouth to pull the loosened skin free. It will then work down the body and limbs. Leopard geckos eat their shed skin — this is normal behavior and provides a nutritional return. The entire process usually completes within a few hours once started. Minimize handling during active shedding.

Post-Shed Care & Retained Shed

After a completed shed, inspect the gecko carefully — particularly the toes and tail tip — for any retained skin. Retained shed on the toes is the most common problem and, if left in place, can constrict blood flow and cause digit loss. If retained shed is found, soak the affected area in shallow lukewarm water for 10–15 minutes and gently assist removal with damp cotton or soft tweezers. The primary prevention is an always-available moist hide with consistently damp (not wet) sphagnum moss.

Health & Common Issues

Metabolic Bone Disease (MBD)

Caused by insufficient calcium or vitamin D3 — either through inadequate supplementation or the absence of UVB lighting. Symptoms include soft or bowed limbs, tremors, difficulty walking, and jaw deformities. MBD is preventable through correct supplementation. Advanced cases require veterinary treatment.

Cryptosporidiosis (Crypto)

A parasitic infection caused by Cryptosporidium varanii (formerly C. saurophilum). Common in captive-bred geckos from high-volume producers. Symptoms include chronic weight loss, a 'stick tail' appearance despite eating, and regurgitation. There is currently no reliable cure. Quarantine all new animals strictly and obtain animals from reputable breeders with clean health histories.

Dysecdysis (Retained Shed)

Incomplete shedding most commonly caused by insufficient humidity in the moist hide, dehydration, or underlying illness. See the Shedding section for management.

Respiratory Infection (RI)

Typically triggered by prolonged exposure to temperatures that are too cold, or by excess humidity. Signs include wheezing, open-mouth breathing, mucus around the nostrils, and lethargy. Requires veterinary antibiotics; correct the husbandry cause simultaneously.

Impaction

Blockage of the digestive tract from ingested substrate, oversized prey, or foreign material. Risk is highest in cold or nutritionally deficient geckos. Symptoms include lack of defecation, bloating, and appetite loss. Mild cases may resolve with a warm soak and a drop of mineral oil; severe cases require veterinary care.

Mites

Small red or black external parasites that appear as moving dots around the eyes, ear openings, or skin folds. Treat with a reptile-safe miticide and thoroughly clean the enclosure. Quarantine affected animals from others.

Tail Loss (Autotomy)

A defensive reflex, not a disease — but worth noting. Caused by rough handling, being grabbed by the tail, or fighting in cohabitation. The tail regrows but will always look different from the original. Ensure the stump is kept clean during healing.

Breeding Notes

Sexually mature females typically weigh 45–60 grams or more; breeding animals under minimum weight risks their health. A voluntary cooling period of six to eight weeks (temperatures reduced to approximately 60–65°F / 15–18°C) is commonly used to stimulate reproductive cycling, though many keepers breed successfully without it. Males should never be housed together as they will fight.

Females lay clutches of two eggs (rarely one) and may produce up to six clutches per breeding season. Eggs should be incubated in a moist medium (vermiculite or perlite at approximately 1:1 water-to-medium ratio by weight) at temperatures between 80–88°F (27–31°C). Incubation duration is typically 45–65 days depending on temperature. Leopard geckos exhibit temperature-dependent sex determination (TSD): lower incubation temperatures produce more females, higher temperatures more males and intersexed animals.

Sources & Disclaimer

This guide was compiled using commonly accepted husbandry practices from experienced keepers and industry-standard reptile care resources. Husbandry knowledge continues to evolve — keepers are encouraged to stay current with the reptile veterinary and keeper community.

This document is for educational purposes only and does not constitute veterinary advice. Always consult a qualified reptile veterinarian for medical concerns. GrimSerpents.com advocates for captive-bred animals only and responsible, ethically sourced reptile keeping.