

Recommended Annual Breeding Schedule

Calotes pethiyagodai - Knuckles pygmy lizard

Habitat basis Cool, wet submontane forest in Sri Lanka's Knuckles Massif, approximately 900-1,500 m elevation.	Core principle A mild seasonal cycle - never true brumation - with restrained morning basking, strong ventilation and regular wet-season rainfall.	Best reproductive anchor A documented wild female laid 8 eggs on 21 June in cool, humid, drizzly conditions.
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Month	Day ambient	Night	Basking surface	Day RH	Photoperiod	Rain / misting	Reproductive management
Jan	23-25 C	17-19 C	29-31 C	70-80%	11 h 45 m	Moderate-heavy	Resting / conditioning
Feb	24-25 C	18-19 C	30-31 C	70-80%	11 h 50 m	Moderate	Begin increasing feeding
Mar	24-26 C	18-20 C	30-32 C	65-75%	12 h 05 m	Slightly drier	Follicular development likely begins
Apr	25-26 C	19-20 C	31-32 C	70-80%	12 h 15 m	Increase mist / rain	Courtship / mating window
May	25-27 C	19-21 C	31-33 C	75-85%	12 h 30 m	Heavy regular rain	Peak breeding / mating
Jun	24-26 C	18-20 C	30-32 C	75-85%	12 h 35 m	Heavy	Gravid females / egg laying
Jul	23-25 C	18-20 C	30-31 C	75-85%	12 h 30 m	Regular mist / rain	Egg laying / recovery
Aug	23-25 C	18-20 C	30-31 C	75-85%	12 h 20 m	Regular	Recovery / possible later clutches*
Sep	24-25 C	18-20 C	30-31 C	70-80%	12 h 10 m	Moderate	Mostly maintenance
Oct	24-26 C	18-20 C	30-32 C	80-90%	12 h 00 m	Very wet	Rainfall stimulus / conditioning
Nov	23-25 C	17-19 C	29-31 C	80-90%	11 h 45 m	Heavy	Cooler wet period
Dec	23-25 C	17-19 C	29-31 C	75-85%	11 h 40 m	Heavy	Rest / conditioning

* Multiple clutches per year have not been established for this species. Treat later clutches as possible, not expected.

All temperatures are target ranges, not single set-points. Provide immediate access to cooler shaded foliage and monitor the animals' behaviour and body condition.

Practical Breeding and Husbandry Notes

Species-specific field observations are separated from conservative captive recommendations. Adjust gradually and retain cooler, shaded escape zones at all times.

Seasonal breeding sequence

- Jan-Feb:** Slightly cooler active-rest phase with moderate feeding. Do not brumate.
- March:** Gradually increase food quantity, insect variety and calcium. Follicular activity may begin.
- April-May:** Increase warmth and rainfall. This is the primary introduction, courtship and mating window.
- Late May-July:** Watch females closely and keep a suitable nest site available continuously. June is the strongest natural laying anchor.

After laying: Rehydrate promptly and feed females generously for 10-14 days, with careful calcium support.

Humidity and rainfall

- Allow the enclosure to cycle rather than remaining saturated: approximately **65-80% RH by day** and **80-95% RH overnight / early morning**. Temporary near-saturation during rain simulation is acceptable if airflow is strong and foliage subsequently begins to dry.
- Use one substantial morning mist or rain event plus a lighter late-afternoon event. During April-July and October-January, periodically add a heavier **5-10 minute rain cycle**.

Basking and UVB

- Use a restrained morning hotspot: normally **30-32 C**, with only a brief seasonal maximum near **33 C**. Avoid prolonged surface temperatures above 34-35 C. Run the strongest basking for roughly the first 4-5 hours after lights-on, while keeping visible light and UV available later.
- Suggested basking-zone exposure: **UVI 2.0-3.5**, with dense foliage and retreat areas below UVI 1.0. This is a cautious husbandry inference; no published species-specific Ferguson-zone measurements were located.

Nest site

- Provide at least **15 cm** of diggable substrate, ideally 18-20 cm so the female can select depth and position. A practical mix is approximately **50% soil + 30% fine sand + 20% coco / leaf mould**.
- The substrate should hold a tunnel when squeezed but must not be muddy. Place part of the laying area under vegetation or shade, not directly beneath the basking lamp.

Feeding rhythm

Period	Adult breeder feeding
Jan-Feb	3 moderate feeds per week
Mar-Apr	4 feeds per week
May-Jun	5-6 feeds per week, especially females
After laying	Heavy recovery feeding for 10-14 days
Aug-Dec	3-4 feeds per week, adjusted to condition

Rotate crickets, locusts, roaches, flies, moths, silkworms, small hornworms and occasional wax-moth larvae. Field observations include dragonflies, butterflies and moths.

Incubation - cautious starting point

- No verified incubation protocol for *C. pethiyagodai* was located. For a first clutch, begin conservatively around **23-24 C**, with a moist incubation medium but no water droplets or standing condensation on the eggs. Do not automatically use lowland *Calotes* temperatures of 27-29 C.
- The related *C. liocephalus* has published incubation durations around 65-72 days, but this should not be treated as a confirmed duration for *C. pethiyagodai*.

Evidence, Interpretation and References

The schedule is designed for practical captive management while remaining honest about where the evidence ends.

DOCUMENTED FOR THE SPECIES	RECOMMENDED / INFERRED FOR CAPTIVITY
Range and habitat: Knuckles Massif, Sri Lanka, approximately 900-1,500 m; very wet submontane forest with substantial canopy cover. Recorded conditions: Daytime habitat temperatures around 25.5-26.8 C and RH around 65-74% in the species description. Behaviour: Morning basking was observed; animals moved into shaded trees during midday. Reproduction: A female laid 8 eggs on 21 June in 23.6 C air temperature, 93% RH, overcast drizzle. The nest was about 92.6 mm deep; mean egg size was approximately 14.8 x 8.6 mm. Diet observations: Dragonflies, butterflies and moths.	Breeding timing: April-May courtship and mating, with June-July laying, is a biologically plausible programme built around the June wild observation. Humidity cycle: Day 65-80%; night / dawn 80-95%, with strong ventilation and temporary peaks during misting. UVB: UVI 2.0-3.5 at the basking branch with shaded areas below UVI 1.0. Feeding frequency: Seasonal increase from 3 feeds weekly to 5-6 during peak reproductive demand. Incubation: 23-24 C is a conservative initial trial, not a published species protocol. Uncertain: Number of annual clutches, exact captive gestation, and species-specific incubation duration.

Key references

1. Amarasinghe et al. (2014). Species description and natural-history observations for *Calotes pethiyagodai*. Taxonomic treatment hosted by Plazi: tb.plazi.org/GgServer/html/03C187D658147805FF22B888FE85794F
2. Karunaratna and Amarasinghe. Observations on ovipositional behaviour in the Knuckles Forest Region. The Knuckles observation originally reported under *C. liocephalus* was later assigned to *C. pethiyagodai*: researchgate.net/publication/236677050
3. The Reptile Database - *Calotes liocephalus*, used only as a related-species incubation comparison: reptile-database.reptarium.cz/Calotes/liocephalus

Important: This is an evidence-informed husbandry plan, not a validated captive-breeding protocol. Make changes gradually, measure temperatures at animal level and at the basking surface, and prioritize behavioural choice.

UVI beneath the optional T5 tube

Calotes pethiyagodai

Your measuring point

Measure UVI at normal back height directly beneath the brightest accessible part of the optional T5 strip. Place the strip toward the middle/back with free access to and away from it; preserve a gradient into fully covered refuges near UVI 0. These numbers describe the exposure area, not the whole enclosure or a daily average.

Measure and adjust

- 1. Use a UV Index meter.** A Solarmeter 6.5/6.5R or equivalent UVI meter is suitable. Broadband UVB readings in microwatts/cm2 cannot be substituted for UVI.
- 2. Measure the installed arrangement.** Warm the tube for about 30 minutes. Keep the reflector, guards and mesh in their normal positions. With the animal elsewhere, hold the sensor at its normal back height, aimed toward the tube.
- 3. Adjust the fixture.** Begin near the lower part of a newly selected working range and adjust gradually. Respect the lamp manufacturer's minimum distance. Recheck after each change and check every higher accessible branch, rock or platform.
- 4. Keep a full gradient.** Provide usable exposure across the animal's body, lower-UVI areas and fully covered refuges near UVI 0. For daytime baskers, overlap the UV area with visible light and appropriate basking warmth while retaining cooler shade.
- 5. Record and recheck.** Log UVI, measuring point, tube-to-back distance, tube age and lamp-on time. Recheck through the year and after changes to the tube, reflector, mesh or furnishings. Exposure duration and behaviour also determine dose.

A T5 range is a working exposure target, not a whole-cage setting, measured wild monthly average, guaranteed optimum or proven safety ceiling. The animal must be able to enter and leave freely.

Monthly target at normal back height

Month	UVI under T5 when on
January	2.0-3.5
February	2.0-3.5
March	2.0-3.5
April	2.0-3.5
May	2.0-3.5
June	2.0-3.5
July	2.0-3.5
August	2.0-3.5
September	2.0-3.5
October	2.0-3.5
November	2.0-3.5
December	2.0-3.5

Add existing range to monthly table

The original notes already recommended UVI 2.0-3.5 at the basking branch. Add that existing range to the monthly table and define it as an optional T5-area measurement; this is not an increase. Retain dense foliage, full cover and restrained morning basking.

Evidence level: Existing range made explicit. The seasonal schedule is a captive operating plan; it is not measured wild monthly UV. Off means the existing planned UVB-off/rest phase is preserved. Any staged Off/1 entry still means gradual reintroduction.

UV references: Baines et al. (2016), UV-Tool; Muryn, Baines and Dishman (2026), Reptile Lighting Guide V10. Full rationale and monthly comparison: [UVI_Audit_Report.html](#).