



# Nocturnal Predation on a Gliding Leaf Frog (*Agalychnis spurrelli*) by a Western Parrot Snake (*Leptophis occidentalis*) in Costa Rica

Raby Nuñez Escalante<sup>1</sup>, Jeffrey González<sup>1</sup>, and Ahmed Junaid<sup>2</sup>

<sup>1</sup>Sierpe de Osa, Puntarenas, Costa Rica

<sup>2</sup>Department of Zoology, Wildlife & Fisheries, Pir Mehr Ali Shah Arid Agriculture University Rawalpindi, Rawalpindi, Pakistan (ahmedjunaid.pk@gmail.com)

Reptiles, despite their ecological importance, have been overlooked in research and conservation compared to other vertebrate groups (Doherty et al. 2020; Arana et al. 2023; Dodge et al. 2025; Junaid 2025). Research on how reptiles interact with their prey and predators is essential for understanding their ecology (Miranda 2017). Parrot Snakes in the genus *Leptophis* comprise 20 currently recognized species that are widely distributed across Mexico, Central America, and South America, where they occupy both arboreal and terrestrial

habitats (Albuquerque et al. 2025; IUCN 2025; Uetz et al. 2025). The rarely encountered Western Parrot Snake (*Leptophis occidentalis*) inhabits old-growth seasonally dry forests, gallery forests, savannas, dry shrublands, plantations, pastures with scattered trees, and peri-urban areas; these snakes are primarily diurnal and are most frequently observed basking or actively foraging on the ground or low vegetation (Arteaga 2024). To date, the only documented prey of *L. occidentalis* is the Cachabi Robber Frog (*Pristimantis achatinus*) (Arteaga 2024).



**Figure 1.** A Western Parrot Snake (*Leptophis occidentalis*) capturing a Gliding Leaf Frog (*Agalychnis spurrelli*) at night in Sierpe de Osa, Puntarenas, Costa Rica. Photograph by Raby Nuñez Escalante.

Frogs in the family Phyllomedusidae are common prey of many predators (Escalante and Valverde 2021). The Gliding Leaf Frog (*Agalychnis spurrelli*), a gliding nocturnal species that lives in the canopy of humid lowland forests, is an arboreal species distributed from Costa Rica to Ecuador, with explosive breeding occurring in temporary pools during or after heavy rainfall (Bland 2013; Thompson et al. 2016; IUCN SSC Amphibian Specialist Group 2020; Gomez et al. 2021; Escalante et al. 2022a). The Tailless Whip Scorpion (*Paraphrynus laevisfrons*), Red-Thighed Bromeliad Spider (*Cupiennius coccineus*), Savage's Thin-toed Frog (*Leptodactylus savagei*), Spectacled Caiman (*Caiman crocodilus*), and Bare-throated Tiger Heron (*Tigrisoma mexicanum*) are documented predators of *A. spurrelli* (Güell et al. 2019; Escalante and Acuña 2021; Escalante et al. 2022b; Escalante and Junaid 2025).

At 2117 h on 13 August 2023, during a herpetofaunal survey in Sierpe de Osa, Puntarenas, Costa Rica (8.869906, -83.473124), we observed a *L. occidentalis* about 2 m above the ground on the branch of a tree about 3 m from the edge of a large ephemeral pond in which explosive breeding aggregations of *A. spurrelli* occur. The snake had seized an *A. spurrelli* by one of its hindlegs (Fig. 1). The vegetation in the area was comprised of *Bactris major*, *Elaeis oleifera*, grasses, and primary rainforest species including tall trees such as *Spondias mombin* and *Luehea seemannii*. The predation sequence lasted about 4 min, during which the snake quickly subdued and ingested the frog legs first. A noticeable bulge in the snake suggested that it had consumed other prey prior to this event. As snakes in the genus *Leptophis*, including *L. occidentalis*, are typically diurnal (Albuquerque et al. 2007, 2025; Nascimento Barbosa et al. 2023; Arteaga 2024), this novel observation represents the first recorded instance of *L. occidentalis* preying at night.

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