The Herpetological Bulletin 176, 2026: 33–34
SHORT COMMUNICATION

https://doi.org/10.33256/hb176.3334

Geographical distribution and range extension of *Lycodon effraenis* in Thailand

ROBIN PRINGPUANGKEO[1*] & ANDREA VITTORIO POZZI[2]

[1]Student at Stephen Perse Cambridge Senior School, Union Road, Cambridge, CB2 1HF, UK
[2]Evolutionary Ecology Group, Department of Zoology, University of Cambridge, Cambridge, UK

[*]Corresponding author e-mail: robin.pring11@gmail.com

The wolf snake genus *Lycodon* comprises approximately 60 species, distributed from the Caspian region to southern China, the Indo-Australian Archipelago, Japan and the Philippines (Lanza, 1999). The brown or scarce wolf snake, *Lycodon effraenis* has a distribution encompassing southern Thailand, Malaysia, Sumatra and Borneo where it is known to occupy a wide altitudinal range (70 to 1,000 m a.s.l.) (Grismer, 2013; Daltry & Wüster, 2002) but due to the cryptic nature little is known of ecology and distribution of this species. It is a slender-bodied snake characterised by a flat, distinct, round head lacking loreal scales, a dark brown body colouration and the presence of white banding during the immature stages (Chan-Ard et al., 2015).

Published data regarding the geographical distribution of this species in Thailand are scarce. In fact, even in recent times, the presence of *L. effraenis* among the snakes of Thailand was not mentioned in several publications (e.g. Das, 2022; Cox, 1991). The first published record for *L. effraenis* in Thailand refers to a specimen collected in Krabi province in 1990 and subsequently housed in the collection of the Queen Saovabha Memorial Institute (Pauwels et al., 2006). Lanza (1999) describes the species as being present " ….in southernmost Thailand"; similarly, Chan-Ard (2015) reports the species to occur in the southern provinces of Yala and Narathiwat, while Nabhitabhata et al. (2000) restrict the species to the Nakhon Si Thammarat Province. However, according to anecdotal reports, the distribution of *L. effraenis* in Thailand seems to be more widespread. In this regard, citizen science can provide a valuable tool for better assessing the distribution of cryptic and elusive species (Di Nicola et al., 2023).

For these reasons, we have gathered distributional data from the published literature, a citizen science database (iNaturalist) and social media (Facebook and Instagram), to reconstruct the geographic distribution of *L. effraenis* in Thailand. In addition, we integrate the occurrence dataset with personal records obtained from one of the authors (RP). Data from iNaturalist were downloaded via GBIF using the following filters: Basis of record = human observation; Country or area = Thailand; dataset = iNaturalist research-grade observation; occurrence status = present; scientific name = *Lycodon effraenis* Cantor, 1847 (GBIF.org, 31 July 2025. GBIF Occurrence Download doi.org/10.15468/dl.rwq96u). Concerning records from social media, we mined occurrence from posts that included photographs and location information to at least provincial level. The distinctive morphological features of *L. effraenis* allow reliable identification within its range; consequently, species identity was verifiable from photographs, and any uncertain records were excluded. We searched social media records using both the English common names, the scientific name, as well as the local names for the species: brown wolf snake, scarce wolf snake, *Lycodon effraenis*, งูปล้องฉนวนสีน้ำตาล. Due to copyright restrictions, not all records from iNaturalist are available for download via GBIF, therefore, we also scanned iNaturalist for records from provinces not represented in our dataset and requested permission from the record owners to include them in our database.

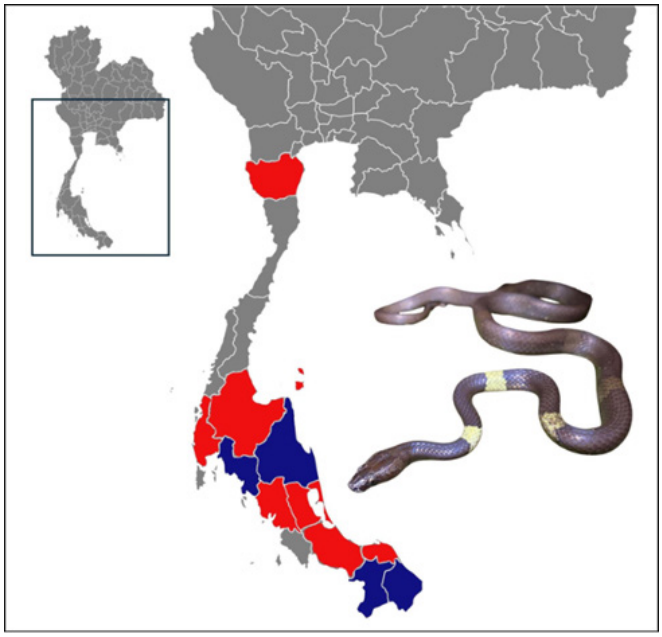

Figure 1. Distribution of *Lycodon effraenis* in Thailand, by province; - blue shading: former known range, red shading: provinces added during the current study. The inset figure of *L. effraenis* is a sub-adult encountered by one of the authors (RP) in Phangnga. Vector map from Vemaps.com.

From social media, citizen science databases and personal observations, we were able to recover 27 records of *L. effraenis* across ten Thai provinces: Yala (6), Narathiwat (8), Surat Thani (4), Trang (2), Phatthalung (1), Songkhla (1), Nakhon Si Thammarat (2), Phetchaburi (1), Pattani (1), Phangnga (1). This greatly extended the formally described range for the species in the country (Fig. 1; Supplementary Materials Table 1S). Moreover, the individual observed

by one of the authors (RP) was found at 50 m a.s.l., which represents the lowest elevational record for the species.

According to our results, the species seems to be widely distributed across most of southern Thailand. Notably, we identified two gaps across the distribution of *L. effraenis*: (i) in the province of Satun; (ii) in the vast area between the province of Phetchaburi and the rest of the range. For what concerns the first gap, while the Satun province has been recently subject to herpetological work with the description of a series of new taxa (e.g. Pawangkhanant et al., 2024), the area still remains quite unexplored, and the lack of records for *L. effraenis* from this province is likely to be sampling bias rather than true absence of the species. On the other hand, various factors may explain the second observed distributional gap. Even if unlikely, the absence of the species in the northern part of the Thai Peninsula may represent under-recording, as has been shown for other reptiles thought to have similar ranges (see Pauwels et al., 2003). However, past climatic conditions and biographic barriers may explain the current distribution of the species. Multiple events of sea level change, aridification and the presence of past corridors may explain the absence of the species within the lowland northern Thai Peninsula, while persisting within relict populations in northern patches of suitable areas (e.g. Phetchaburi) (Woodruff & Turner, 2009; Bird et al., 2005). Future work should then target this distributional gap to confirm the absence of the species in the northern Thai Peninsula. Potential suitable areas may be identified using ecological modelling, as has been done for other elusive species (e.g. Mizsei et al., 2016).

In the case that the current disjunct distributional pattern is confirmed, potential cryptic lineages within the northern part of the *L. effraenis* range should be investigated using molecular methods. Likewise, the broader Sundaic distribution of the species may suggest the presence of additional cryptic diversity, as shown by deep genetic divergence between Thai and Malaysian *L. effraenis* lineages (Siler et al., 2013).

Future integrative molecular studies would therefore be valuable to clarify the species' distribution and to identify potential cryptic conservation units.

ACKNOWLEDGEMENTS

We want to thank Watinee Juthong for sharing details regarding its private record in Songkhla. A.V.P. is supported by the Natural Environment Research Council grant number: NE/S007164/1.

REFERENCES

Bird, M.I., Taylor, D. & Hunt, C. (2005). Palaeoenvironments of insular Southeast Asia during the Last Glacial Period: a savanna corridor in Sundaland? *Quaternary Science Reviews* 24(20–21): 2228–2242.

Chan-Ard, T., Nabhitabhata, J. & Parr, J.W. (2015). *A Field Guide to the Reptiles of Thailand*. Oxford University Press. 229 pp.

Cox, M.J. (1991). *The Snakes of Thailand and Their Husbandry*. Krieger Publishing. Malabar, Florida, USA. 526 pp.

Daltry, J.C. & Wüster, W. (2002). A new species of wolf snake (Serpentes: Colubridae: *Lycodon*) from the Cardamom Mountains, southwestern Cambodia. *Herpetologica* 58(4): 98–504.

Das, I. (2022). *A Naturalist's Guide to the Snakes of South-east Asia, (3rd Edition)*. John Beaufoy Publishing Ltd. 176 pp.

Di Nicola, M.R., Pozzi, A.V., Mezzadri, S., Faraone, F.P., Russo, G., Dorne, J.L.M. & Minuti, G. (2023). The endangered Sardinian grass snake: distribution update, bioclimatic niche modelling, dorsal pattern characterisation, and literature review. *Life* 13(9): 1867.

Grismer, L., Chan-Ard, T., Inger, R.F., Auliya, M. & Dehling, M. (2013). *Lycodon effraenis*. The IUCN Red List of Threatened Species 2013: e.T176842A44272505. https://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T176842A44272505.en. Accessed on 20 February 2025.

IUCN Species Survival Commission (2001). IUCN Red List Categories and Criteria: Version 3.1. https://www.iucnredlist.org/resources/categories-and-criteria.

Lanza, B. (1999). A new species of *Lycodon* from the Philippines, with a key to the genus (Reptilia Serpentes Colubridae). *Tropical Zoology* 12(1): 89–104.

Mizsei, E., Üveges, B., Vági, B., Szabolcs, M., Lengyel, S., Pfliegler, W.P., Nagy, Z.T. & Tóth, J.P. (2016). Species distribution modelling leads to the discovery of new populations of one of the least known European snakes, *Vipera ursinii graeca*, in Albania. *Amphibia-Reptilia* 37(1): 55–68.

Pauwels, O.S., David, P. Chimsunchart, C. & Thirakhupt, K. (2003). Reptiles of Phetchaburi Province, Western Thailand: a list of species, with natural history notes, and a discussion on the biogeography at the Isthmus of Kra. *Tropical Natural History* 3(1): 23–53.

Pauwels, O.S., David, P. & Chan-ard, T. (2006). *Dryocalamus davisonii tungsongensis* Nutphand, 1986 and *Lycodon suratensis* Nutphand, 1986 (Serpentes: Colubridae): translation of their original description and taxonomic status. *Hamadryad-Madras* 30(1/2): 114.

Pawangkhanant, P., Poyarkov, N.A., Ward-Smith, H., Grassby-Lewis, R., Sumontha, M., Kliukin, N.S., Idiiatullina, S.S., Trofimets, A.V., Suwannapoom, C. & Lee, J.L. (2024). A new species of karst-associated kukri snake (Reptilia: Squamata: Colubridae: *Oligodon* Fitzinger, 1826) from southern Thailand. *Vertebrate Zoology* 74: 359–379.

Siler, C.D., Oliveros, C.H., Santanen, A. & Brown, R.M. (2013). Multilocus phylogeny reveals unexpected diversification patterns in Asian wolf snakes (genus *Lycodon*). *Zoologica Scripta* 42(3): 262–277.

Woodruff, D.S. & Turner, L.M. (2009). The Indochinese–Sundaic zoogeographic transition: a description and analysis of terrestrial mammal species distributions. *Journal of Biogeography* 36(5): 803–821.

Accepted: 14 October 2025

Please note that the Supplementary Material for this article is available online via the Herpetological Bulletin website: https://thebhs.org/publications/the-herpetological-bulletin/issue-number-176-summer-2026