

Final Evaluation Report

We ask all grant recipients to complete a project evaluation that helps us to gauge the success of your project. This must be sent in **MS Word and not PDF format**. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please DO NOT fill in and submit this form until the project has been completed.

Complete the form in English. Note that the information may be edited before posting on our website.

Please email this report to jane@rufford.org.

Your Details	
Full Name	Tan Van Nguyen
Project Title	<i>Rediscovering and assessing the conservation status of Lycodon paucifasciatus Rendahl in Smith, 1943 in Vietnam (Squamata: Colubridae)</i>
Application ID	45888-2
Date of this Report	20 October 2025

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	achieved	Not achieved	Partially achieved	Fully achieved	Comments
Assess the population status, distribution (by altitude, habitat), and microenvironmental characteristics of <i>Lycodon paucifasciatus</i>					Field surveys across seven localities in central-southern Vietnam confirmed the species to be rare but present in both secondary and primary forests at altitudes between 800–1,200 m. Population density is low, with individuals encountered only occasionally at night along small forest streams. Across 107 fieldwork days during five survey trips, we recorded a total of 75 individuals (61 adults and 14 juveniles), further supporting the assessment of its low encounter rate.
Assess the impact factors such as hunting, trading, and habitat disturbance affecting <i>L. paucifasciatus</i> populations					The main threats are habitat loss and fragmentation caused by deforestation for agriculture and logging. Occasional collection for the pet trade was reported due to the snake's attractive coloration. No evidence of large-scale trade or disease was recorded. A total of 105 individuals (95 men and 10 women) were interviewed, including forest rangers, protected-area staff, and local residents with extensive experience in the surrounding forests, providing reliable information for assessing socio-ecological impacts relevant to

				the species.
Propose recommendations for long-term conservation and update the IUCN status				Based on new distributional and ecological data, the species appears to have a wider range and greater tolerance of secondary habitats than previously known. A proposal is being prepared to reassess its global IUCN category from Vulnerable (VU) to Near Threatened (NT). This reassessment is supported by the fact that the 2011 IUCN evaluation was based on only five specimen records from two provinces (Thua Thien Hue and Quang Binh), whereas our study documented 75 individuals across multiple localities in central and southern Vietnam, together with eight additional observations from citizen-science platforms. The broader confirmed distribution, the substantially higher number of verified records, and the absence of strong large-scale threats collectively justify the proposed downlisting of the species

2. Describe the three most important outcomes of your project.

a) This project provided the first formal diagnosis of *Lycodon paucifasciatus*, defining its diagnostic characters and distinguishing it from related taxa such as *L. anakradaya* and *L. cardamonensis*. Populations previously reported from Phong Nha–Ke Bang NP and adjacent areas, once considered *L. paucifasciatus*, were shown to represent a distinct species, *Lycodon poyarkovi* Nguyen & Vogel, 2025, described as part of this project.

b) The project expanded the known distribution range of *L. paucifasciatus* southward and westward in Central Vietnam, confirming its presence at elevations between 800–1,200 m in both secondary and primary forests.. A species distribution

model (SDM) was developed projecting potential range shifts under climate scenarios for 10, 20, and 50 years. The model predicts moderate range stability but a gradual contraction in low-elevation habitats.

c) The species population and habitat status were updated, showing that *L. paucifasciatus* is scarce but locally persistent in forested areas. These results provide the first baseline data for conservation planning and will contribute to the forthcoming national checklist revision of Vietnamese reptiles.

These outcomes collectively provide a solid scientific basis for the long-term conservation of *L. paucifasciatus* in Vietnam.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

Fieldwork was sometimes hindered by difficult terrain, unpredictable mountain weather, and restricted access to forested sites during the rainy season. The species' secretive and nocturnal behavior also made direct observation challenging. These were mitigated by extending survey periods and involving local guides familiar with the terrain. Despite these challenges, all planned surveys were successfully completed.

4. Describe the involvement of local communities and how they have benefited from the project.

The project collaborated closely with local forestry rangers, residents, and educational institutions.

Training: Over 100 local officers and Duy Tan University students received training in field survey techniques, snake identification, and conservation awareness.

Outreach: Around 350 local school students participated in environmental education sessions focusing on wildlife protection and snake ecology.

Impact: Participants gained practical knowledge in biodiversity monitoring, improved their perception of the ecological role of snakes, and engaged in discussions about coexistence and local conservation practices. This community engagement will serve as a foundation for sustained local conservation actions.

5. Are there any plans to continue this work?

Building on the outcomes of this project, we propose to expand the scope of research toward a comprehensive study of *Lycodon* diversity, evolution, and conservation across central and southern Vietnam. Future work will include genomic and morphological assessments of *L. paucifasciatus*, *L. anakradaya*, and *L. cardamonensis*, as well as ecological monitoring and habitat modeling for *L. anakradaya* and *L. truongi*. These activities will provide essential data for developing

a conservation action plan and for seeking further funding to safeguard *Lycodon* species in Vietnam's rapidly changing forest ecosystems. These plans will ensure the long-term continuity and expansion of conservation research on *Lycodon* in Vietnam.

6. How do you plan to share the results of your work with others?

Project findings have been shared with the management boards of surveyed protected areas, local forestry departments, and Duy Tan University. Data summaries and images were disseminated via wildlife groups such as SIFASV (Snake Identification and First Aid for Snakebites in Vietnam). A bilingual outreach summary was also posted on personal Facebook page, ResearchGate and university communication channels to raise awareness among conservation professionals and the public.

Furthermore, this project has directly resulted in two peer-reviewed publications and contributed valuable field data to several other manuscripts related to the taxonomy and conservation of Indochinese snakes. These papers collectively enhance the understanding of *Lycodon* diversity and promote the conservation significance of central and southern Vietnam's herpetofauna:

Publications directly derived from this project:

- Nguyen T.V., Poyarkov N.A. & Vogel G. (2025) Taxonomic reassessment of the *Lycodon rufozonatus* species complex (Serpentes, Colubridae), with re-evaluation of *Dinodon rufozonatum walli*, and description of a new species from North-central Vietnam. *ZooKeys*, 1251: 293–322.
- Nguyen T.V. & Vogel G. (2025) A new species of *Lycodon* Fitzinger, 1826 from the northern part of the Truong Son Mountains, Central Vietnam (Reptilia, Squamata, Colubridae). *Zootaxa*, 5570(3): 484–510.

Other publications benefiting from project data or collaborations:

- Nguyen TV, Lee JT, Pauwels OSG, Kennedy-Gold SR, Poyarkov NA, David P, Vogel G (2024) The nomenclatural status of "*Anoplophallus maculatus*" Cope, 1895, with implications in the taxonomy of *Lycodon subcinctus* F. Boie, 1827 auctorum (Squamata: Colubridae) and the description of a new species. *Zootaxa*, 5519(4): 487–537.
- Vogel G., Liu S., David P. & Nguyen T.V. (2024) Solving of the long-term question: resurrection of *Dinodon yunnanensis* Werner, 1922. *Zootaxa*, 5551(2): 201–241.
- Poyarkov NA, Bragin AM, Nguyen TV (2024) A new endemic insular species of the genus *Colubroelaps* (Squamata: Serpentes: Colubroidea) from Khanh Hoa Province, Vietnam. *Herpetozoa*, 37: 379–390. • Grassby-Lewis R.J. et al. (2025) A new endemic karst-associated species of lance-headed pit viper (*Protobothrops*) from Laos. *Herpetozoa*, 38: 43–60.

- Nguyen TV & Vogel G (2025) On the taxonomy of *Sibynophis grahami* (Boulenger, 1904) with remarks on morphology, distribution, natural history, and conservation status (Squamata: Sibynophiidae: *Sibynophis*). *Zootaxa*, 5618 (4): 525–551
- Nguyen TV, Le JL, Jiang K, Ding L, May Thu Chit, Poyarkov NA, Vogel G. (2025) A new species of wolf snake *Lycodon* Fitzinger, 1826 from China and Myanmar (Squamata: Colubridae), and new data on *Lycodon gongshan* Vogel and Luo, 2011. *Zootaxa*, 5621 (1): 001–051
- Poyarkov NA, Bragin AM, Idiitullina SS, Tran TA, Le DX, David P, Nguyen TV (2025) A new species of the *Gonyosoma prasinum* species complex (Squamata: Serpentes: Colubridae) from Indochina. *Zootaxa*, 5673 (3): 355–384.
- Vogel G, Bragin AM, Poyarkov NA, Nguyen TV (2025) A new limestone-associated species of wolf snake in the *Lycodon fasciatus* complex (Squamata: Serpentes: Colubridae) from central Vietnam. *Zootaxa*, 5679 (1), 1–44.
- Lee JL, Nguyen TV, May Thu Chit, Poyarkov NA, Vogel G (2025) Taxonomic notes on the Wolf Snakes *Lycodon* (Fitzinger, 1826) of Myanmar: new records, re-descriptions, and an annotated key (Squamata: Colubridae). *Zoological Research: Diversity and Conservation*, 2(1):1–28
- Nguyen TV, Keetapithchayakul TS, Lathrop A, Orlov NL, Nguyen DT, Poyarkov NA, David, P (2025) Molecular and morphological evidences for considering *Rhabdophis guangdongensis* Zhu, Wang, Takeuchi & Zhao, 2014 a junior synonym of *Rhabdophis angeli* (Bourret, 1934) (Squamata: Natricidae). *Zootaxa*, 5706 (1): 1–35.
- Nguyen TV, Pham PM, Nguyen DT, Suwannapoom C, Orlov NL, Poyarkov NA (2025) Range extension of two rare snake species, *Calamaria concolor* Orlov et al., 2010 and *Colubroelaps nguyenvansangi* Orlov et al., 2009 (Serpentes: Colubridae) in Vietnam, with notes on natural history and conservation status. *Russian Journal of Herpetology*, 32(3): 199–204

These outputs collectively demonstrate that the project not only fulfilled its conservation and taxonomic objectives but also served as a foundation for continued international collaboration and knowledge exchange in snake systematics and conservation biology.

7. Looking ahead, what do you feel are the important next steps?

- Conduct detailed molecular and morphological comparisons among *L. paucifasciatus*, *L. anakradaya*, and *L. cardamonensis* to clarify their taxonomic relationships and evolutionary history.
- Finalize and submit the IUCN reassessment proposal, recommending the downlisting of *L. paucifasciatus* from Vulnerable (VU) to Near Threatened (NT) based on updated population and habitat data.
- Develop a conservation education module on snake diversity and ecosystem function for schools and communities in central Vietnam, promoting coexistence and local conservation awareness.

- Initiate a follow-up research and conservation program focusing on Lycodon diversity in central and southern Vietnam, targeting poorly known species such as *L. anakradaya* and *L. truongi*. This will strengthen long-term monitoring and support future funding applications for regional snake conservation.

Together, these actions will translate scientific knowledge into practical conservation outcomes.

8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

The Rufford Foundation logo was displayed on all project materials, training certificates, and educational posters. Acknowledgement of Rufford funding was included in all presentations, publications, and social-media posts (e.g., SIFASV Facebook group and Duy Tan University's official page). This visibility significantly increased public awareness of Rufford's contribution to species conservation in Vietnam.

9. Provide a full list of all the members of your team and their role in the project.

The project was implemented by a multidisciplinary team as follows:

- Tan Van Nguyen – Principal investigator; project coordination, field surveys, species identification, data analysis, report writing.
- Tang Van Duong – Co-investigator; molecular and taxonomic analyses, field assistance.
- Vy The Tran, Thong Van Pham – Training coordinator; outreach and education programs.
- Ngon Quang Lam – GIS and distribution modeling; field surveys.
- Local rangers, local residents, and Duy Tan University students – Field support, data collection, and community liaison.

10. Any other comments?

We sincerely thank **The Rufford Foundation** for its generous support that made this important research possible. This project contributes substantially to understanding and conserving a poorly known snake species in the Indo-Burma region. The findings highlight the ecological value of mid-elevation forests and the importance of continued collaboration between scientists, universities, and local communities for effective biodiversity conservation.



Figure 1. Photos in life of *Lycodon paucifasciatus* species complex and *L. rufozonatus*: – *L. anakradaya* in Khanh Vinh, Khanh Hoa, Vietnam (A); – *L. cardamomensis* in Cardamom Mt., Pursat, Cambodia (B); in Khao Wong NP, Rayong, Thailand (C); Song Hinh, Khanh Hoa, Vietnam (D) – *L. paucifasciatus* in Bach Ma NP, Phong Dien NR, Sao La NR, Thua Thien-Hue, Vietnam (E, F, G, respectively); – *L. gibsonae* in Khao Yai NP, Prachinburi, Thailand (H) – *L. rosozonatus* in Wuzhi Mt., Hainan, China (J) – *L. rufozonatus* in Chengdu, Sichuan, China (K); in Taiwan, China (L); Miyako, Okinawa, Yaeyama, Japan (M). Source cited from Nguyen et al. 2025: *Zootaxa*, 5570(3): 484–510.

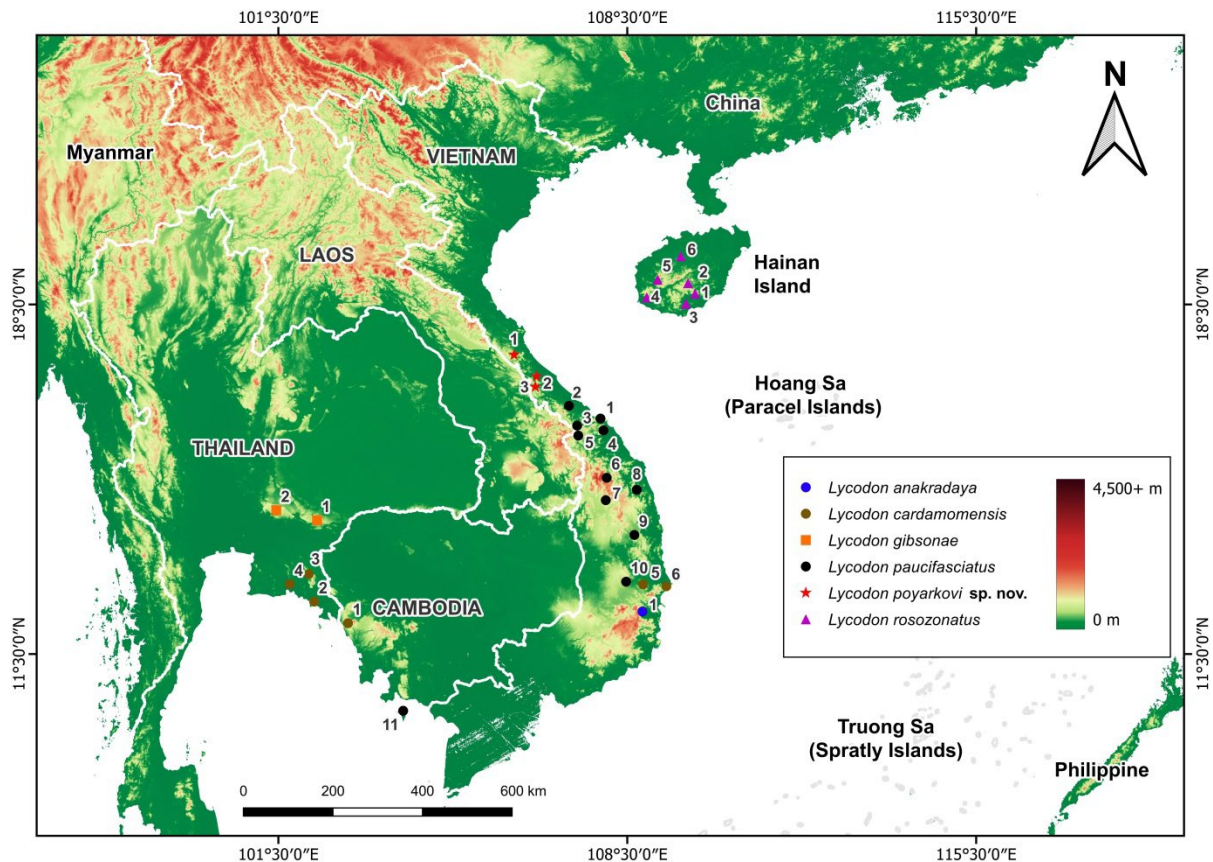


Figure 2. Distribution ranges of the *Lycodon paucifasciatus* species complex in Indochina and China. Notes: Stars indicate the type localities of species; numbers indicate different localities where the species have been recorded (see below for the details of localities). Source cited from Nguyet et al. 2025: *Zootaxa*, 5570(3): 484–510.

Number in map	Lycodon	Location
1	<i>poyarkovi</i>	Phong Nha-Ke Bang NP, Quang Binh, Vietnam (type locality)
2	<i>poyarkovi</i>	Dong Chau-Khe Nuoc Trong NR, Quang Binh, Vietnam
3	<i>poyarkovi</i>	Bac Huong Hoa NR, Quang Tri, Vietnam
1	<i>anakradaya</i>	Song Giang, Khanh Hoa, Vietnam (type locality)
1	<i>cardamomensis</i>	Cardamom Mt., Pursat, Cambodia (type locality)
2	<i>cardamomensis</i>	Phriea Waterfall NP., Chanthaburi, Thailand
3	<i>cardamomensis</i>	Soi Dao WS., Chanthaburi, Thailand
4	<i>cardamomensis</i>	Khao Wong NP., Rayong, Thailand
5	<i>cardamomensis</i>	Song Hinh, Phu Yen, Vietnam
6	<i>cardamomensis</i>	Tay Hoa, Phu Yen, Vietnam
1	<i>gibsonae</i>	Wang Nam Khiao, Nakhon Ratchasima, Thailand (type locality)

2	<i>gibsonae</i>	Khao Yai NP., Prachinburi, Thailand
1	<i>paucifasciatus</i>	Thua Luu, Thua Thien-Hue, Vietnam (type locality)
2	<i>paucifasciatus</i>	Phong Dien NR, Thua Thien-Hue, Vietnam
3	<i>paucifasciatus</i>	Sao La NR, Thua Thien-Hue, Vietnam
4	<i>paucifasciatus</i>	Ba Na-Nui Chua NR, Da Nang, Vietnam
5	<i>paucifasciatus</i>	Sao La NR, Quang Nam, Vietnam
6	<i>paucifasciatus</i>	Nam Tra My, Quang Nam, Vietnam
7	<i>paucifasciatus</i>	Dak Ha, Kon Tum, Vietnam
8	<i>paucifasciatus</i>	Cao Muon Mt, Quang Ngai, Vietnam
9	<i>paucifasciatus</i>	An Khe, Gia Lai, Vietnam
10	<i>paucifasciatus</i>	Eo So NR, Dak Lak, Vietnam
11	<i>paucifasciatus</i>	Phu Quoc NP, Kien Giang, Vietnam
1	<i>rosozonatus</i>	Diaoluo Mt, Dali, Hainan, China (type locality)
2	<i>rosozonatus</i>	Wuzhi Mt., Qiongzong, Hainan, China
3	<i>rosozonatus</i>	Baofing, Hainan, China
4	<i>rosozonatus</i>	Jianfengling NFP, Hainan, China
5	<i>rosozonatus</i>	Changjiang Li, Hainan, China
6	<i>rosozonatus</i>	Haikou, Hainan, China



Figure 3. Field surveys and interviews conducted with local residents and rangers in central Vietnam. *Photo: Nguyen Van Tan et al.*



Figure 5. Field record and morphological characteristics of *Lycodon paucifasciatus* documented through the "Snake Identification and First Aid for Snakebites in Vietnam" Facebook group.

Y-DƯỢC
ĐẠI HỌC DUY TÂN

TRANG CHỦ / TIN TỨC & SỰ KIỆN / TIN TỨC TRUNG TÂM NGHIÊN CỨU CÔN TRÙNG - KÝ SINH TRÙNG / PHÁT HIỆN LOÀI RẮN MỚI Ở VIỆT NAM: RẮN KHUYẾT DUY TÂN_Lycodon duytan NGUYEN, POYARKOV & VOGEL, 2025

TIN TỨC & SỰ KIỆN

TIN TỨC DTU

TIN TỨC Y - DƯỢC

TIN TỨC KHOA Y

TIN TỨC KHOA RĂNG HÀM MẶT

TIN TỨC KHOA DƯỢC

TIN TỨC KHOA ĐIỀU DƯỠNG

TIN TỨC TRUNG TÂM SINH HỌC PHÂN TỬ

TIN TỨC TRUNG TÂM CÔNG NGHỆ SINH HỌC DƯỢC

TIN TỨC TRUNG TÂM NGHIÊN CỨU CÔN TRÙNG - KÝ SINH TRÙNG

TIN TỨC TRUNG TÂM THỰC HÀNH MÔ PHÒNG Y KHOA

TIN TỨC ĐOÀN THANH NIÊN

HỘI NGHỊ KHOA HỌC

THÔNG TIN TUYỂN SINH

Phát hiện loài Rắn mới ở Việt Nam: Rắn khuyết Duy Tân_Lycodon duytan Nguyen, Poynarkov & Vogel, 2025

Bối cảnh nghiên cứu

Loài *Lycodon rufozonatus* (Rắn khuyết dải thân đỏ) vốn được biết là phân bố rộng khắp Đông Á nhưng có lịch sử phân loại phức tạp, với nhiều tên đồng nghĩa và phân loài chưa được làm rõ. Bằng cách kết hợp dữ liệu hình thái, phân tích gen ty thể cytochrome b và so sánh mẫu chuẩn, nhóm nghiên cứu đã làm sáng tỏ tình trạng phân loại của nhóm loài này.

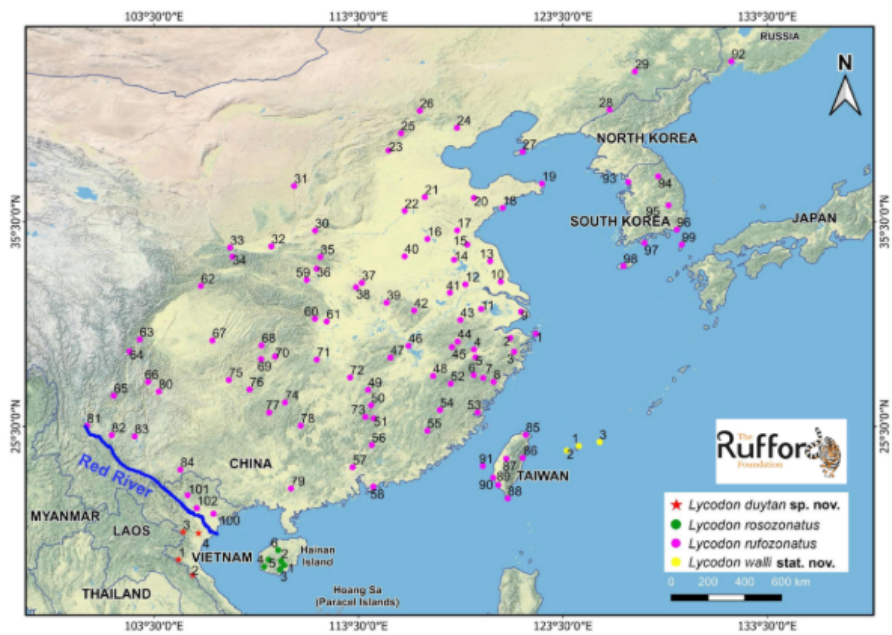


Figure 7. Project results shared on the Duy Tan University website with acknowledgment of Rufford Foundation support

ANNEX – Financial Report
[Intentionally removed]