

# A new distribution of *Myrrophis dakkrongensis* Nguyen, Le, Lathrop, Vo, Murphy, 2024 (Squamata: Serpentes: Homalopsidae) in Lam Dong province, Vietnam

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## Phân bố mới của *Myrrophis dakkrongensis* Nguyen, Le, Lathrop, Vo, Murphy, 2024 (Squamata: Serpentes: Homalopsidae) ở tỉnh Lâm Đồng, Việt Nam

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### ABSTRACT

The newly described species, *Myrrophis dakkrongensis* Nguyen, Le, Lathrop, Vo, Murphy, 2024, was discovered in rubber plantations and wetland areas within forests in the Dak Krong River Basin in Dak Glong district, Dak Nong province, Vietnam. It was thought to be endemic to that area. In this study, we expand the species' distribution by providing a new record based on field surveys in a different area, the Dong Nai River Basin in Lam Dong province, Vietnam. The new record is also from a new habitat type, a stream flowing through a forest. For conservation purposes, data collection and morphological identification were conducted using the Capture-Analyze-Release approach (CAR). Details regarding the new habitat type (the stream), other field metadata, and the voucher photos are available on iNaturalist (<https://www.inaturalist.org/observations/238896488>). Morphological characteristics of the juvenile specimen match the original description of *M. dakkrongensis* but have some different characteristics from adult specimens in type series as tail length/total length ratio = 0.22 (vs. 0.14 – 0.16) and subcaudals 43 (vs 34 – 42). The coloration of the new record mostly matches the original descriptions, but it is slightly lighter. Further research on the species' overall distribution in surrounding river basins such as the Vam Co River and the Ba River; habitat types; and geographical phylogeny are necessary to enhance our understanding of this species.

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Capture-Analyze-Release, Dong Nai River, Lam Dong, *Myrrophis dakkrongensis*, new distribution, stream.

### Từ khóa:

Bắt-Phân tích-Thả lại, Lâm Đồng, *Myrrophis dakkrongensis*, phân bố mới, sông Đồng Nai, suối.

### TÓM TẮT

*Myrrophis dakkrongensis* Nguyen, Le, Lathrop, Vo, Murphy, 2024, là một loài mới được phát hiện tại các khu vực trồng cao su và các vùng đất ngập nước trong rừng, và là loài đặc hữu của lưu vực sông Đắk Krông, huyện Đắk Glong, tỉnh Đắk Nông, Việt Nam. Phân bố và môi trường sống của *M. dakkrongensis* giới hạn ở lưu vực sông Đắk Krông. Trong nghiên cứu này, chúng tôi mở rộng phân bố của loài thông qua ghi nhận mới dựa trên các khảo sát thực địa tại lưu vực sông Đồng Nai, tỉnh Lâm Đồng, Việt Nam tại một dạng sinh cảnh mới là suối chảy trong rừng. Vì mục đích bảo tồn, dữ liệu nghiên cứu được thu thập và định danh hình thái

bằng phương pháp Bắt-Phân tích-Thả lại (CAR). Chi tiết về dạng sinh cảnh sống mới (sinh cảnh suối), dữ liệu và các minh chứng bằng hình ảnh được lưu trữ trên iNaturalist (<https://www.inaturalist.org/observations/238896488>). Đặc điểm hình thái của mẫu vật chưa trưởng thành trùng khớp với mô tả gốc của *M. dakkrongensis* nhưng có một số điểm khác so với các mẫu vật trưởng thành trong loạt mẫu, như tỷ lệ chiều dài đuôi/tổng chiều dài = 0,22 (so với 0,14 – 0,16) và 43 vảy dưới đuôi (so với 34 – 42). Màu sắc của mẫu vật mới ghi nhận hầu hết trùng khớp với mô tả gốc nhưng hơi nhạt hơn. Nghiên cứu thêm về phân bố tổng thể ở các lưu vực sông lân cận như sông Vàm Cỏ hoặc sông Ba, các dạng sinh cảnh sống, và phát sinh loài theo địa lý là cần thiết để nâng cao hiểu biết của chúng ta về loài này.

## 1. INTRODUCTION

The genus *Myrrophis* Kumar, Sanders, George & Murphy comprises three species distributed in Vietnam and China including *Myrrophis chinensis*, *Myrrophis bennettii*, and *Myrrophis dakkrongensis* [1]. The distribution and classification of this genus are not fully understood, and some taxa of this genus likely represent a complex of cryptic species [2]. Among them, *M. dakkrongensis* was newly described in 2024, with specimens known only from Dak Nong province and a possible larger distribution across the Dak Krong River Basin [3]. Using a morphological approach while not making voucher specimens, this study expands the distribution of *M. dakkrongensis* to the Dong Nai River Basin in Lam Dong province and adds streams to list of habitats where this species has been found.

## 2. RESEARCH METHODS

The field survey was conducted in a stream habitat in a forest in Bao Lam district, Lam Dong province, Vietnam in August 2024 (Fig. 1-2). The specimen was identified based on morphological characters using the Capture-Analyze-Release approach (CAR) [4]. The CAR approach is a method to identify the specimen without killing by photographing many angles of the specimens and marking some specific scales using a pen (for instance, ventral, subcaudal, mid-body scale rows, etc.) (Fig. 3). The snake was held in hand (it is obviously none the venomous snakes) and another person will

use a measuring tape to the nearest 1 mm to measure snout to vent length and tail length. Paired meristic characteristics are given as left/right. Measurements and meristic counts were taken following previous literature for the classification of *Myrrophis* [3, 5]. Measurements: snout to vent length (measured from tip of the snout to the vent; tail length (measured from the vent to tip of the tail). Scale counts: supralabials; infralabials; loreals; preoculars; postoculars; anterior temporals; posterior temporals; dorsal scales at the first ventral: starting from the dorsal scale adjacent to the first complete ventral and counting obliquely backward to the vertebral row and then forward to the dorsal scale adjacent to the first ventral on the other side of the body; dorsal scales at neck: number of dorsal scale rows at one head length behind the head; dorsal scales at midbody: counted half-way between the first ventral and the vent, counting obliquely forward and turning backward at the vertebral row; dorsal scales before vent: number of dorsal scale rows at one head length prior to the vent; preventrals: incomplete ventrals that wider than long but not in contact with the first dorsal scale rows simultaneously on both sides; ventral scales: starting from the first complete ventral to the vent, excluding cloacal plate; subcaudal scales: number of pair subcaudal scales, excluding the terminal spine.

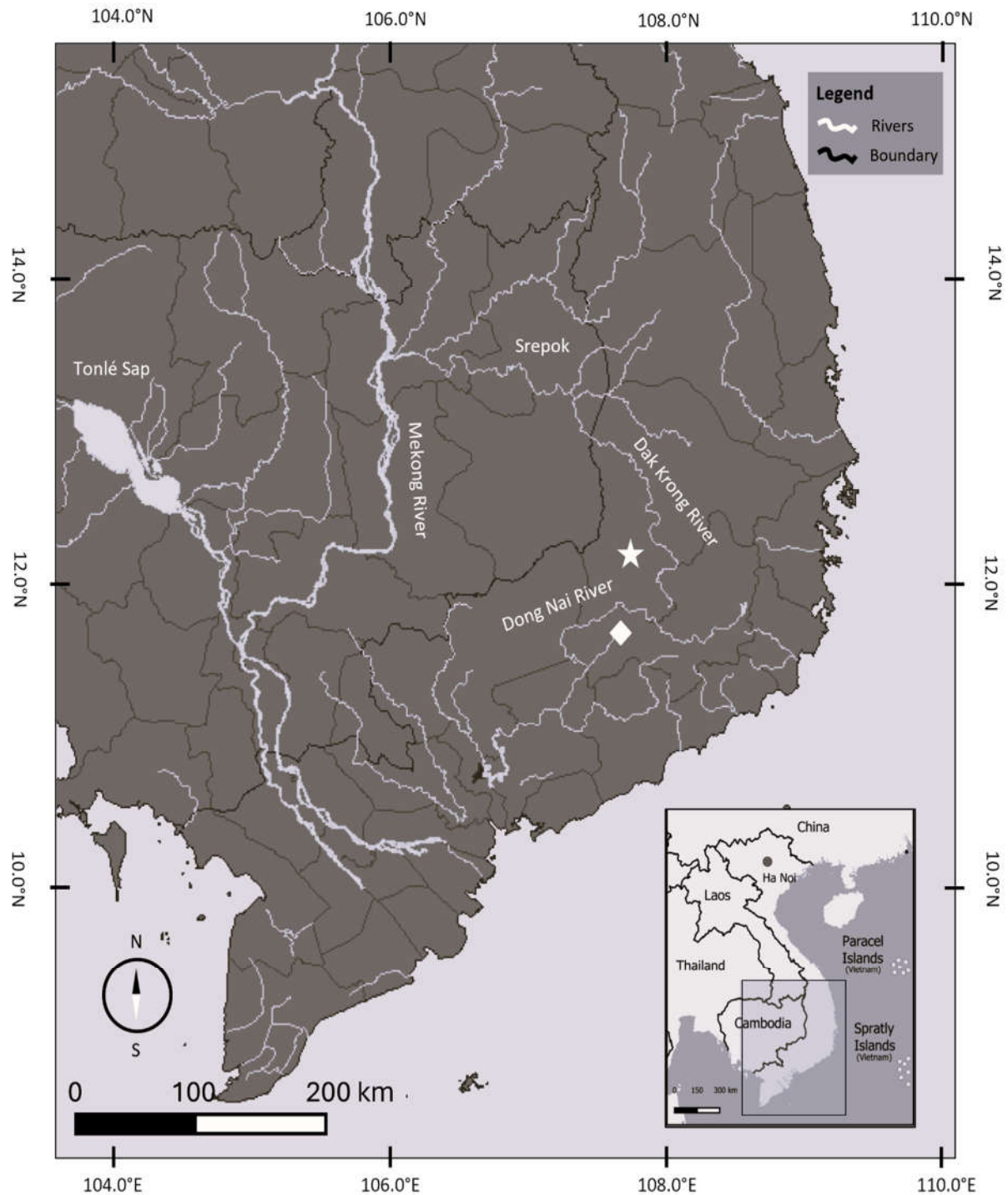


Figure 1. Map showing distribution localities of *Myrophis dakkrongensis*. Star shows type locality (Dak Nong, Vietnam); Diamond shows new record for the species (Lam Dong, Vietnam)

### 3. RESULTS AND DISCUSSION

*Myrophis dakkrongensis* Nguyen, Le, Lathrop, Vo, Murphy, 2024

Vietnamese name: Rắn bông đăk Krông/  
English name: Dak Krong mud snake.

*Specimen examined (n = 1):* ITBCZ 11181 (Fig. 2A), One juvenile was found on 20 August 2024 in Bao Lam District, Lam Dong Province, Vietnam; coordinates 11°44'11.9"N 107°41'55.9"E; elevation 790 m a.s.l.



**Figure 2. A) A juvenile *Myrrophis dakkrongensis*, ITBCZ 11181 in life;  
B) Stream habitat where the specimen was found**

**Description** (Fig. 3): Morphological characteristics of the specimen match the description of *Myrrophis dakkrongensis* [3]. Head elliptical in dorsal view, slightly distinct from neck; nostril directed upward; eye small round occurs on the laterodorsal side of the head; body short and cylindrical; tail short; Dorsal head and dorsal scales smooth. Snout to vent length 163 mm; tail length 46 mm; eye contacting 1/1 preocular, 2/2 postocular, 1/1 supraocular, 0/0 subocular; 1/1 loreal; internasal single, not in contact with loreal; 1/1 anterior temporal, 1/2 posterior temporal, 3/3 tertiary temporals; 8/8 supralabials, 4th-7th largest, supralabials 1st-3rd/1st-3rd contacting the loreal, 4th/4th contacting the eye; 11/11 infralabials, 6th largest, 1st/1st infralabials contacting each other, 1st-4th contacting the anterior chin shield, 4th-5th contacting the posterior chin shield; anterior chin shields in contact with each other; posterior chin shields

separated by pair of intergenials; dorsal scale rows 23 - 23 - 19, 27 rows at first ventral; 134 (+1 preventral) ventral scales, broad, not keeled; cloacal plate divided; subcaudals 43, all divided (Fig. 3E). The specimen is a juvenile, it has some different characteristics from the adult type specimens [3] such as tail length/total length ratio = 0.22 (vs 0.14 – 0.16); subcaudals 43 (vs. 34 – 42).

**Color in life:** The coloration of the specimen matches the *M. dakkrongensis* descriptions [3], but is slightly lighter. Dorsal and lateral parts of the head along to tail olive brown (Fig. 3A-C); lateroventral part yellow to orange, distinct, formed by about three first dorsal scale rows (Fig. 2A); ventral yellowish cream with two outer dark brown longitudinal stripes occurring between the lower margin of first dorsal scale rows and outer margin of ventral, and one middle dark brown longitudinal stripe occurring center of ventral.



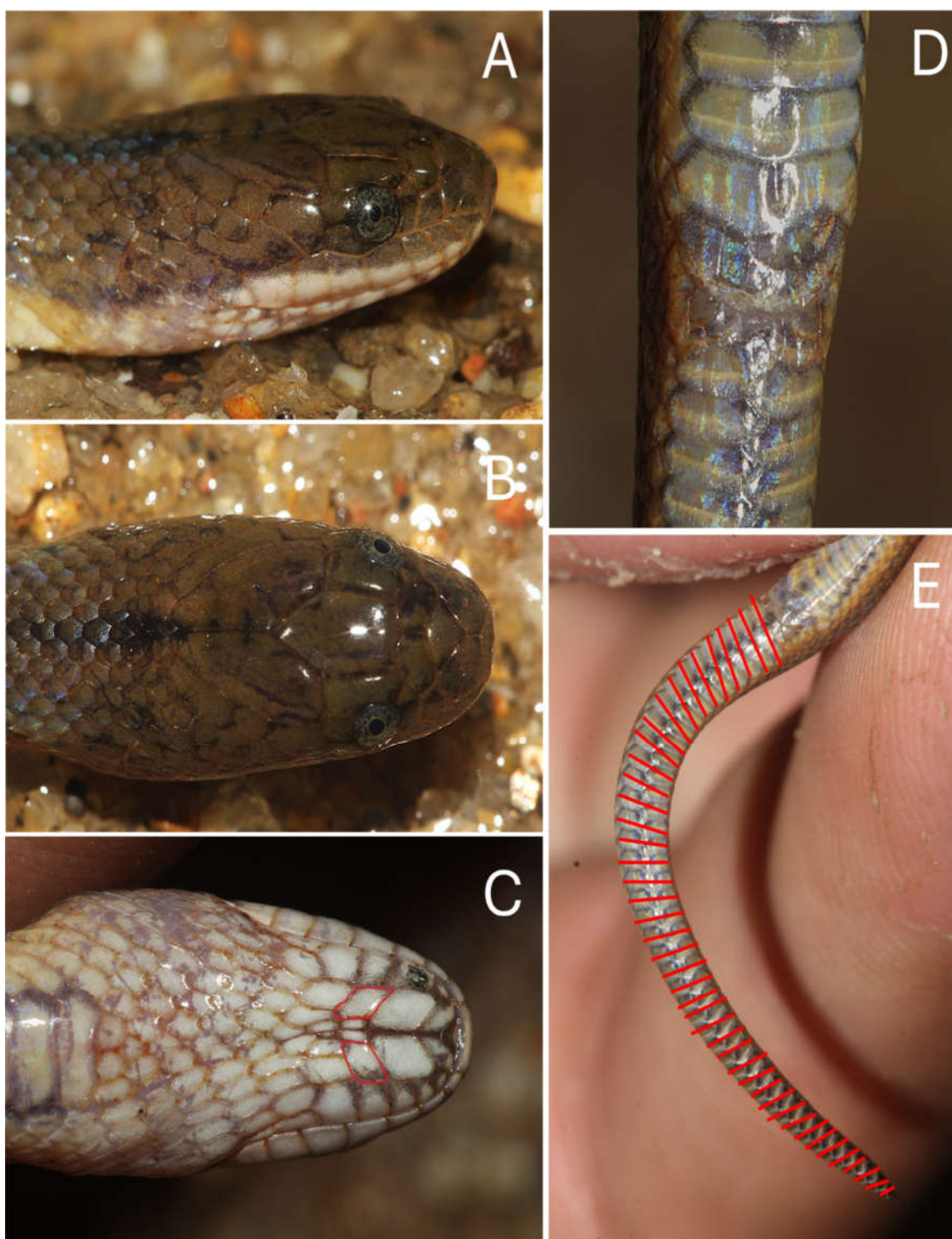


Figure 3. A juvenile *Myrrophis dakkrongensis*, ITBCZ 11181. A) Lateral view of head; B) Dorsal view of head; C) Ventral view of head; D) Cloacal region; E) Ventral view of tail, showing the subcaudal count

To minimize specimen collection and serve conservation purposes, we employed the Capture-Analyze-Release approach (CAR). The specimen was released after we took

photographs as “voucher” photos. The voucher photos have been recorded on iNaturalist (Link: <https://www.inaturalist.org/observations/238896488>). *M. dakkrongensis* was discovered and

previously known only from Dak Glong district, Dak Nong province, Vietnam. The new record in Bao Lam district, Lam Dong province, Vietnam extends the distribution of the species approximately 50 km from the type locality (Fig. 1). This is also the first record of this species in a stream habitat (Fig. 2B). The specimen was discovered in a bush of aquatic plants at the edge of the stream. The stream flows along the edge of the mixed wood-bamboo forest, with an approximate width of 4 to 5 meters and a maximum depth barely reaching above knee level. The Dong Nai River originates from the northern region of the Lam Vien Plateau, winding its way southwestward and eventually reaching Ho Chi Minh City [6]. It forms a natural connection between Dak Nong and Lam Dong provinces. Therefore, the distribution of *M. dakkrongensis* may not only be expected to extend along the Dak Krong River Basin but also along the Dong Nai River Basin, reaching southwestward into Vietnam.

#### 4. CONCLUSIONS

In this study, a new distribution of *M. dakkrongensis* was recorded in Bao Lam district, Lam Dong province, Vietnam. The record was also from a new habitat record for the species - a stream in a forest. In order to better understand *M. dakkrongensis*, we recommend that further studies be conducted regarding its geographical phylogeny and distribution of outside of the Dak Krong River and the Dong Nai River (for example the Vam Co River Basin or the Ba River).

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