

NEW RECORDS AND AN UPDATED LIST OF THE HERPETOFAUNA FROM NA HAU NATURE RESERVE, YEN BAI PROVINCE, VIETNAM

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SUMMARY

Na Hau Nature Reserve (NR) was established in 2006, located in Van Yen district, Yen Bai province with a total area of 16,950 hectares. The nature reserve consists of a large area of natural montane forest with the habitat is evergreen broad-leaved forests and limestone forests with karst caves. The herpetofauna of this protected area is still poorly known, there is not much research about herpetofauna in this area, only one checklist in 2009 and one article in 2015. As a result of our field survey in Na Hau NR in September 2020, 13 species of amphibians and reptiles were recorded for the first time from Na Hau Nature Reserve, namely *Takydromus sexlineatus*, *Sphenomorphus cryptotis*, *Tropidophorus hainanus*, *Oligodon cinereus tamdaoensis*, *Hebius boulengeri*, *Pareas hamptoni*, *Boulenophrys palpebralespinosa*, *Xenophrys maosonensis*, *Microhyla butleri*, *Amolops shihaitaoi*, *Odorrana nasica*, *Sylvirana maosonensis*, *Rana johnsi*. In addition, we provide an updated list of 37 reptile species and 23 amphibian species from the study area. The nature reserve also harbors a high level of conservation concern with 17 threatened species, including 14 species listed in the IUCN Red List (2022), 13 species listed in the Vietnam Red Data Book (2007), and 10 species listed in the Governmental Decree No. 84 (2021).

Keywords: Amphibians, distribution, Na Hau Nature Reserve, new records, reptiles.

1. INTRODUCTION

The Na Hau Nature Reserve (NR) is located in Van Yen district, Yen Bai province with a total area of 16,950 hectares (Ma Thi Ngoc Mai & Nguyen Thi Ngan, 2015). The nature reserve consists of a large area of natural montane forest (Dong Thanh Hai & Phan Duc Linh, 2015). Since its establishment in 2006, the herpetofauna of this protected area is still poorly known. Kuch et al. (2005) described a new species, the Red River Krait *Bungarus slowinskii* Kuch, Kizirian, Nguyen, Lawson, Donnelly & Mebs with the holotype collected in Na Hau forest of Yen Bai Province. Subsequent studies documented a total of 46 species of amphibians and reptiles from Na Hau NR (Nguyen et al., 2009, Dong Thanh Hai & Phan Duc Linh 2015). Nguyen et al. (2009) recorded 13 species of reptiles and 10 species of amphibians. Dong Thanh Hai & Phan Duc Linh (2015) provided a checklist of 47 species with 24 new records (18 reptiles and 6 amphibians).

As a result of our recent field survey in September 2020, we herein report 13 new records of amphibians and reptiles from Na Hau NR.

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2. RESEARCH METHODOLOGY

The field survey was conducted in the Na Hau NR by Vinh Q. Luu, Nghia V. Ha, Quang H. Nguyen, Tuong S. Dinh, Chung A. Giang (hereafter V. Q. Luu et al.) in September 2020. Survey sites were selected at elevations from 400 to 900 m a.s.l. The habitat of this study area is evergreen broad-leaved forests and limestone forests with karst caves. Specimens were collected by hand or using a snake hook. Specimens were euthanized in a closed vessel with a piece of cotton wool containing ethyl acetate (Simmons, 2002), fixed in 80% ethanol for four to six hours, then later transferred to 70% ethanol for permanent storage. The specimens are subsequently deposited in the collection of the Vietnam National University of Forestry (VNUF), Hanoi, Vietnam. Taxonomic identification mainly followed Smith (1943), Taylor (1963), Ziegler et al. (2007), Nguyen et al. (2009), Hecht et al. (2013), Nguyen et al. (2016), Phan et al. (2018), Pham et al. (2018), Luong et al. (2019), Luu et al. (2020), Pham et al. (2020), Luong et al. (2021), Luong et al. (2022). Abbreviations used for morphometry are as follows: SVL (snout-

vent length): from tip of snout to anterior margin of cloaca; TaL (Tail length): from posterior margin of cloaca to tip of tail (for reptiles). Bilateral scale counts were given as left/right.

3. RESULTS AND DISCUSSION

Family Lacertidae Gray, 1825

1. *Takydromus sexlineatus* Daudin, 1802

Asian Grass Lizard/Liu điu chỉ

Specimen examined (n=1). One adult female, VNUF R.2020.102 collected on 26th September 2020 on the road by V. Q. Luu et al.

Morphological features: The specimen from Na Hau NR agreed with the description of Taylor (1963): SVL: 46.0 mm; TaL: 192.0 mm; nasals in broad contact behind rostral; frontonasal longer than broad touching one loreal; prefrontals elongate; parietals with an irregular keel separated from each other by interparietal and a small “occipital” scale behind it; nostril between nasal; two loreals; three supraoculars; supraciliaries present; supralabials 7/7; and infralabials 5/5; three pairs of chinshields; dorsal scales rows 33; midbody dorsal scale rows 29; ventral scales 45; the number of subdigital lamellae under fourth finger 16/16 and under fourth toe 19/19.

Coloration in life: Head dark-olive; body greenish olive, lighter on sides; venter bluish- to greenish-white, continued on the subcaudal region; no small ocellate spots on flanks. On the neck, there are six rows of large scales reaching approximately halfway between the arms and legs.

Ecological notes: The specimen was collected at 14:00 on the road. The surrounding habitat was grasses along the road of Tat village.

Distribution: In Vietnam, this species was known from Lao Cai in the North Southwards to Binh Duong province. Elsewhere, the species is known in India, Southern China, Taiwan, Myanmar, Laos, Thailand, Cambodia, Malaysia, and Indonesia (Nguyen et al., 2009).

Family Scincidae Oppel, 1811

2. *Sphenomorphus cryptotis* Darevsky, Orlov & Cuc, 2004

Depress-eared Forest Skink/Thằn lằn phê nô tai lõm

Specimen examined (n=1). One adult female, VNUF R.2020.126 collected on 28th September 2020 (21°45.265' N/104°33.750' E at an elevation of 911 m a.s.l.) by V. Q. Luu et al.

Morphological characters: The specimen from Na Hau NR agreed with the descriptions of Pham et al. (2018) and Luong et al. (2019); SVL 70.3 mm, TaL 118.7 mm; head longer than wide, supranasals absent; prefrontals in contact with each other; loreals 2/2; supraoculars 4/4; supraciliaries 9/9; nuchals 6; supralabials 7/7, the fifth and sixth below the eye, separated from the eye by one row of small scales; infralabials 8/8; midbody scales in 35 rows; paravertebral scales 73; ventrals in 87 transverse rows, smooth.

Coloration in life; Dorsum and tail base yellowish brown with a vertebral row of large black spots; numerous indistinct white spots on the labials; lateral zone with a distinct dark stripe from behind the eye to tail base, with white spots; venter and underside anterior part of tail white, posterior part of tail yellowish brown.

Ecological notes: The specimen was found at 14:53 on the ground. The surrounding habitat was a primary forest of Tat village.

Distribution: In Vietnam, this species has been reported from Dien Bien to Nghe An provinces (Pham et al. 2018; Luong et al. 2019). Elsewhere, the species is known in China (Qi et al., 2022).

3. *Tropidophorus hainanus* Smith, 1923

Hainan water skink/Thằn lằn tai hải nam

Specimen examined (n=1). One adult female, VNUF R.2020.108 collected on 26th September 2020 (21°46.936' N/104°32.195' E at an elevation of 684 m a.s.l.) by V.Q. Luu et al.

Morphological characters: The specimen from Na Hau NR agreed with the descriptions of Phan et al. (2018) and Luong et al. (2019): SVL 52.8 mm, TaL 46.0 mm; head longer than wide; supranasals absent; prefrontals in contact with each other; loreals 2/2; supraoculars 4/4; supraciliaries 5/5; nuchals absent; supralabials 7/7, the fourth and fifth below the eye, separated from the eye by one row of small scales; infralabials 6/6; midbody scales in 32 rows; paravertebral scales 45; ventrals in 46

transverse rows, keel.

Coloration in life: Upper head brown, supralabials and loreal dark brown with irregular small white spots; dorsum brown with indistinct light crossbars, the first two in V-shaped form; flanks with white small spots from behind tympanum to groin; upper tail base with V-shaped form of light crossbars; venter white cream; belly with dark longitude streaks.

Ecological notes: The specimen was found at 18:25 on the cliff. The surrounding habitat was the karst forest of Dai Son commune.

Distribution: In Vietnam, this species has been reported from Lai Chau in the North Southwards to Dak Nong province (Phan et al., 2018; Luong et al., 2019). Elsewhere, the species is known in China (Nguyen et al., 2009).

Family Colubridae Opperl, 1811

4. *Oligodon cinereus tamdaoensis*

(Günther, 1864)

Günther's Kukri Snake/Rắn khiếm xám

Specimen examined (n=1). One dead adult female, VNUF R.2020.111 collected on 27th September 2020 on the road (21°45.958' N/104°34.508' E at an elevation of 378 m a.s.l.) by V. Q. Luu et al.

Morphological characters: The specimen from Na Hau NR agreed well with the description of Smith (1943): SVL 615.0 mm, TaL 90.0 mm; head longer than wide, distinct from the neck; pupil round; loreal 1/1, not touching the eye; preocular 1/1; postoculars 2/2; supralabials 8/8; infralabials 9/10, first to fourth bordering chin shields; dorsal scale rows 17–17–15, smooth; ventrals 174; cloacal undivided; subcaudals 37, paired.

Coloration in life: Dorsal head with a dark chevron, dorsum reddish brown with 24 black bands and 4 black bands on the tail. Ventral white with many black squarish spots on the edge of both sides.

Ecological notes: The dead specimen was found at 17:30 on the road. The surrounding habitat was a residential area of Dai Son commune.

Distribution: In Vietnam, this species has been reported from Tam Dao (Smith, 1943). Elsewhere, the species is known in India (Bengal, Assam), China (Kweichow), and

Myanmar (Smith, 1943; Hu et al., 1973).

Family Natricidae Bonaparte, 1838

5. *Hebius boulengeri* (Gressitt, 1937)

Boulenger's Keelback/Rắn sãi bâu-len-go

Specimen examined (n=1). One adult female, VNUF R.2020.100 collected on 26th September 2020 (21°46.936' N/104°32.195' E at an elevation of 684 m a.s.l.) by V.Q. Luu et al.

Morphological characters: The specimen from Na Hau NR agreed well with the descriptions of Ziegler et al. (2007) and Nguyen et al. (2016): SVL 406.0 mm, TaL 210.0 mm; head longer than wide, distinct from the neck; pupil round; loreal 1/1, not touching the eye; preocular 1/1; postoculars 3/3; supralabials 9/8; infralabials 10/10, first to fifth bordering chin shields on both sides; dorsal scale rows 19–19–17, strongly keeled except outer row smooth; ventrals 152; cloacal divided; subcaudals 84, paired.

Coloration in life: Dorsum dark grey, dorsolateral stripe extends from the neck to the base of the tail. Posterior supralabials black with a median elongated cream blotch or streak, forming a postocular stripe extending on the neck; anterior supralabials white; first dorsal scale row smooth. The venter is uniformly cream (Ziegler et al., 2007; Nguyen et al., 2016).

Ecological notes: The specimen was found at 18:14 on the limestone outcrop at a cave entrance. The surrounding habitat was the karst forest of Dai Son commune.

Distribution: In Vietnam, this species has been reported from Lao Cai to Lam Dong provinces. Elsewhere, the species is known in China, Laos, Cambodia, and Thailand (Nguyen et al., 2016; Le et al., 2018).

Family Pareasidae Romer, 1956

6. *Pareas hamptoni* (Boulenger, 1905)

Hampton's Slug Snake/Rắn hổ mây ham-ton

Specimen examined (n=1). One juvenile female, VNUF R.2020.109 collected on 26th September 2020 (21°46.936' N/104°32.195' E at an elevation of 684 m a.s.l.) by V.Q. Luu et al.

Morphological characters: The specimen from Na Hau NR agreed with the descriptions of Luu et al. (2020): SVL 252.0 mm, TaL 76.0

mm; body small; head distinct from neck; head longer than wide; nasal undivided; loreal 1/1, not touching the eye; preoculars 2/2; postoculars 2/2; suboculars 2/2, long and slender; supralabials 7/7; infralabials 9/9; dorsal scale rows 15–15–15, smooth; ventrals 196; cloacal single; subcaudals 87, paired.

Coloration in life. Dorsum reddish brown, with vertical black body bands; ventral scales from chin to lower surface of tail orange with black spots in the female, dorsal surface of tail with black stripe.

Ecological notes: The specimen was found at 18:14 on the tree branch at a cave entrance. The surrounding habitat was the karst forest of Dai Son commune.

Distribution: In Vietnam, this species has been recorded from Lao Cai province in the North Southwards to Lam Dong and Dong Nai provinces. This species is the first record for Na Hau NR. Elsewhere, the species is known in China, Myanmar, Laos, and Cambodia (Luu et al., 2020).



Figure 1. 1) Liu điu chỉ (*Takydromus sexlineatus*), 2) Thần lằn phê nô tai lõm (*Sphenomorphus cryptotis*), 3) Thần lằn tai hải nam (*Tropidophorus hainanus*), 4) Rắn khiếm xám (*Oligodon cinereus tamdaoensis*), 5) Rắn sãi râu-len-gơ (*Hebius boulengeri*), 6) Rắn hổ mây ham-ton (*Pareas hamptoni*)

Family Megophryidae Bonaparte, 1850

7. *Boulenophrys palpebralespinosa*

(Bourret, 1937)

Tonkin Spadefoot Toad/Cóc mảy bắc bộ

Specimen examined (n=1). One adult female, VNUF R.2020.118 collected on 28th September 2020 (21°45.265' N/104°33.750' E, at an elevation of 745 m a.s.l.) by V. Q. Luu et al.

Morphological characters: The specimen from Na Hau NR agreed with the description of Luong et al., (2019): size small (SVL 37.8 mm). Head wider than long; snout short, truncate; pupil elliptical horizontal; upper eyelid with a

dermal horn on the outer edge, accompanied by several tubercles; tongue without notched; vomerine teeth absent; tympanum distinct. Forelimbs: slender, hand length longer than forelimbs; finger III free of discs; fingers without dermal fringe; free of webbing. Hindlimbs: tibia longer than thigh; toe IV free of discs; toes without dermal fringe, slender, and lack subarticular tubercles; the inner metatarsal tubercle oval; the outer metatarsal tubercle flattened; toes lack membranous edges, having a slight rudiment of webbing; webbing formula: I1–2II1–2III2–3¹/₂IV3¹/₂–1V.

Coloration in life: Dorsal surface of the head and body grey with brown markings; dorsal surface of limbs with dark bars; ventral surface white, throat and chest mottled with dark brown spots; inner palmar tubercle and nuptial pad red.

Ecological notes: The specimen was found at 20:10 in the primary forest of Ban Tat commune. The relative temperature was 25.8 °C and the humidity was 67 %.

Distribution: In Vietnam, this species was previously known from Dien Bien in the North Southwards to Gia Lai province. Elsewhere, the species is known from China and Laos (Luong et al., 2019).

8. *Xenophrys maosonensis* (Bourret, 1937)

Maoson Horned Toad/ Cóc mắt mấu sơn

Specimens examined (n=2). Two adult females, VNUF R.2020.112 collected on 27th September 2020 (21°45.422' N/104°34.564' E, at an elevation of 446 m a.s.l.), and VNUF R.2020.119 collected on 28th September 2020 (21°45.265' N/104°33.750' E, at an elevation of 911 m a.s.l.) by V. Q. Luu et al.

Morphological characters: Morphological characters of the specimen from Na Hau NR agreed well with the descriptions of Hecht et al. (2013): SVL 62.5–69.5 mm; head depressed, slightly wider than long; pupils vertical; snout obliquely obtuse; nostrils closer to the eye than to tip of snout; tympanum distinct; interorbital distance a bit narrower than upper eyelid width. Forelimbs: tips of fingers swollen; webbing absent. Hindlimbs: toes long; tips of toes swollen, without discs; webbing formula: I2–2II2–3III3–4IV4–2V; inner metatarsal tubercle long; outer metatarsal tubercle absent.

Coloration in life: Dorsum brown, a dark brown triangular pattern between the eyes; lateral sides of head dark brown; upper lip with a white stripe, running from nostril backward to shoulder; supratympanic fold edged in white; dorsal surface of limbs with dark cross-bands; belly whitish.

Ecological notes: The specimens were collected at 14:53 and at 20:00 on the ground. The surrounding habitat was the natural forest and stream of Ban Tat commune.

Distribution: In Vietnam, the species has

been recorded from Lao Cai in the North southwards to Dong Nai province. Elsewhere, this species is known in India, Bangladesh, China, Myanmar, Laos, and Thailand (Hecht et al., 2013).

Family Microhylidae Günther, 1858

9. *Microhyla butleri* Boulenger, 1900

Butler's Narrow-mouthed Toad/Nhái bầu bút lờ

Specimen examined (n=1). One adult female, VNUF R.2020.106 collected on 26th September 2020 (21°46.936' N/104°32.195' E, at an elevation of 684 m a.s.l.) by Luu et al.

Morphological characters: The specimen from Na Hau NR agreed with the descriptions of Hecht et al. (2013) and Pham et al. (2020): size small (SVL 26.5 mm), head wider than long; snout pointed; tympanum hidden; vomerine teeth absent; tongue round posteriorly. Forelimbs: slender, hand length longer than forelimbs; finger III free of discs; fingers without dermal fringe; free of webbing. Hindlimbs: tibia longer than thigh; toe IV free of discs; toes without dermal fringe; webbing formula: I1¹/₂–2II1²/₃–3III2¹/₂–3¹/₂IV3¹/₂–2V.

Coloration in life: Dorsal head and body grey with brownish and reddish markings; one whitish stripe from eye to the beginning of arm; limbs with dark transverse bars; ventral surface whitish, throat and chest mottled with dark brown.

Ecological notes: The specimen was found at 18:09 on the leaf. The surrounding habitat was karst forest and shrubs of Dai Son commune.

Distribution: In Vietnam, this species has been reported from Lao Cai in the North southwards to Dong Nai, and Kien Giang provinces (Nguyen et al., 2009, Hecht et al., 2013 and Pham et al., 2020). Elsewhere, the species is known from China, Myanmar, Laos, Thailand, Cambodia, Malaysia, and Singapore. (Pham et al., 2020).

Family Ranidae Rafinesque, 1814

10. *Amolops shihaitaoi* Wang, Li, Du, Hou, and Yu, 2022

Hekou Torrent Frog/Ếch bóm đá

Specimens examined (n=3). Two adult

females, VNUF R.2020.113 and VNUF R.2020.114 collected on 27th September 2020 (21°45.412' N/104°34.564' E, at an elevation of 446 and 452 m a.s.l.) and one adult male, VNUF R.2020.130 collected on 28th September 2020 (21°45.265' N/104°33.750' E, at an elevation of 911 m a.s.l.) by V. Q. Luu et al.

Morphological characters: The specimens from Na Hau NR agreed with the descriptions of Hecht et al. (2013) and Pham et al. (2020): Size medium (SVL 44.3–49.8 mm in females and 39.4 mm in the male), head longer than broad, snout round; nostril at the midway between eye and tip of snout; tympanum round, small; vomerine teeth present; tongue notched posteriorly. Forelimbs: slender, hand length longer than forelimbs; finger III discs; fingers without dermal fringe; free of webbing. Hindlimbs: tibia longer than thigh; toes without dermal fringe; webbing formula: I1–III1–IIII1–IV1–IV.

Coloration in life: Dorsum yellowish-grey with larger reddish spots; upper surface of limbs with darker transverse bars; lower surface yellowish white.

Ecological notes: The specimens were found between 20:09 and 21:00. The surrounding habitat was the stream and natural forest of Ban Tat commune.

Distribution: In Vietnam, this species has been reported from Lao Cai in the North southwards to Kon Tum, Gia Lai provinces. Elsewhere, the species is known from China. (Pham et al., 2020).

11. *Odorrana nasica* (Boulenger, 1903)

Tonkin Huia Frog/Ếch mõm dài

Specimens examined (n=4). Two adult females, VNUF.R.122 and VNUF.R.131; two adult males, VNUF.R.125 and VNUF.R.129, collected on 28th September 2020 (21°45.265' N/104°33.750' E, at an elevation of 911 m a.s.l.) by V. Q. Luu et al.

Morphological characters: The specimens from Na Hau NR agreed with the descriptions of Hecht et al. (2013) and Luong et al., (2021): Size medium (SVL 72.1–72.2 mm in females and 46.2–46.9 mm in males); head longer than wide; vomerine teeth present; snout obtusely

pointed, prominent; loreal region oblique, concave; tongue notched posteriorly; pupil rounded; tympanum distinct; fingers free of webbing, tips of fingers swollen; subarticular tubercles small; inner metatarsal tubercle small, elongated; outer metatarsal tubercle small; dorsolateral fold distinct; skin above and below smooth. Forelimbs: shorter than hand length. Hindlimbs: toes fully webbed; outer metatarsal tubercle absent; webbing formula: I1–III1–IIII1–IV1–IV; inner metatarsal tubercle elongated.

Coloration in life: Dorsum dark green; dorsolateral fold and canthus rostralis white; sides of the head and flanks brownish-grey; lips whitish; tympanum dark brown; limbs with dark bars; ventral surface white.

Ecological notes: The specimens were found at 14:53 on the ground. The surrounding habitat was the natural forest of Ban Tat commune.

Distribution: In Vietnam, this species has been recorded from Lai Chau, and Lao Cai in the North Southwards to Nghe An and Thua Thien provinces. Elsewhere, this species is known in China, Laos, and Thailand (Luong et al., 2021).

12. *Sylvirana maosonensis* (Bourret, 1937)

Mao-Son Frog/Chàng mẫu sơn

Specimen examined (n=1). One adult female, VNUF R.2020.124 collected on 28th September 2020 (21°45.256' N/104°33.750' E, at an elevation of 911 m a.s.l.) by V. Q. Luu et al.

Morphological characters: The specimen from Na Hau NR agreed with the description of Hecht et al. (2013), and Pham et al. (2020): Size medium (SVL 56.1 mm); head longer than wide; snout truncate; nostril closer to the tip of snout than to eye; pupil round; tympanum distinct; vomerine teeth present; tongue notched posteriorly. Forelimbs slender, hand length shorter than forelimbs; fingers without dermal fringe; free of webbing. Hindlimbs: tibia longer than thigh; toes without dermal fringe; webbing formula: I2–II1–2¹/₂III1–3IV3–IV.

Coloration in life: dorsum yellowish brown, flanks lighter with black spots; limbs with dark

brown transverse bars; tympanum brown; venter whitish.

Ecological notes: The specimen was found at 20:34 on the tree branch. The surrounding habitat was the natural forest of Ban Tat commune.

Distribution: In Vietnam, this species has been reported from Lao Cai in the North southwards to Quang Tri, Thua Thien Hue provinces. Elsewhere, the species is known from Laos (Pham et al., 2020).

13. *Rana johnsi* Smith, 1921

Johns' Frog/Hiu Hiu

Specimen examined (n=1). One adult female, VNUF R.2020.105 collected on 26th September 2020 (21°46.936' N/104°32.195' E, at an elevation of 684 m a.s.l.) by V.Q. Luu et al.

Morphological characters: The specimen from Na Hau NR agreed with the descriptions of Luong et al., (2019, 2022): Size medium (SVL 47.0 mm); head longer than wide, flattened; snout obtusely pointed, pronounced,

longer than eye; tympanum distinct; pupil horizontal; vomerine teeth present; tongue notched posteriorly. Forelimbs: slender, hand length longer than forelimbs; finger III free of discs; fingers without dermal fringe; free of webbing. Hindlimbs: tibia longer than thigh; toe IV free of discs; toes without dermal fringe; webbing formula: I1-1¹/₂II1-2III1-2IV2-1V.

Coloration in life: Dorsum light brown; flanks whitish-brown; dorsal surface of limbs with dark brown transverse bars; a dark patch from the eye to shoulder, enclosing the tympanum; ventral surface white or cream.

Ecological notes: The specimen was found at 18:00 on the ground at a cave entrance. The surrounding habitat was the karst forest of Dai Son commune.

Distribution: In Vietnam, this species has been reported from Dien Bien in the North Southwards to Lam Dong, Dong Nai provinces. Elsewhere, the species is known in China, Taiwan, Laos, Thailand, and Cambodia (Luong et al., 2022).



Figure 2. 7) Cóc mây bắc bộ (*Boulenophrys palpebralespinosa*), 8) Cóc mắt mấu sơn (*Xenophrys maosonensis*), 9) Nhái bầu bút-lơ (*Microhyla butleri*), 10) Éch bám đá (*Amolops shihaitaoi*), 11) Éch mõm dài (*Odorrana nasica*), 12) Chàng mấu sơn (*Sylvirana maosonensis*), 13) Hiu hiu (*Rana johnsi*)

An updated checklist of the herpetofauna from Na Hau NR

Our new findings bring the total species number of the herpetofauna of Na Hau Nature Reserve to 60 (Table 1). The nature reserve

harbors a high level of conservation concern with 14 species listed in the IUCN Red List (2022), 13 species listed in the Vietnam Red Data Book (2007), and 10 species listed in the Governmental Decree No. 84 (2021).

Table 1. An updated list of amphibians and reptiles recorded from Na Hau NR

No	Scientific name	Data source	RBVN (2007)	Decree 84 (2021)	IUCN (2022)
REPTILIA Laurenti, 1768					
Squamata Opperl, 1811					
Sauria Macartney, 1803					
I	Agamidae Gray, 1827				
1	<i>Acanthosaura lepidogaster</i> (Cuvier, 1829)	1,2			
2	<i>Calotes mystaceus</i> Duméril & Bibron, 1837	2			
3	<i>Calotes versicolor</i> (Daudin, 1802)	1			
4	<i>Draco maculatus</i> (Gray, 1845)	2			
5	<i>Physignathus cocincinus</i> Cuvier, 1829	1,2	VU		VU
II	Gekkonidae Gray, 1825				
6	<i>Gekko reevesii</i> (Gray, 1831)	2			
7	<i>Hemidactylus frenatus</i> Duméril & Bibron, 1836	1,2			
III	Lacertidae Gray, 1825				
8	<i>Takydromus sexlineatus</i> Daudin, 1802*	3			
IV	Scincidae Opperl, 1811				
9	<i>Eutropis longicaudatus</i> (Hallowell, 1857)	1,2			
10	<i>Sphenomorphus cryptotis</i> Darevsky, Orlov & Cuc, 2004*	3			
11	<i>Tropidophorus hainanus</i> Smith, 1923*	3			
V	Pythonidae Fitzinger, 1826				
12	<i>Python bivittatus</i> Kuhl, 1820	2		IIB	VU
VI	Xenopeltidae Bonaparte, 1845				
13	<i>Xenopeltis hainanensis</i> Hu & Zhao, 1972	1			
VII	Colubridae Opperl, 1811				
14	<i>Coelognathus radiatus</i> (Boie, 1827)	1,2	VU		
15	<i>Dendrelaphis pictus</i> (Gmelin, 1789)	2			
16	<i>Elaphe moellendorffi</i> (Boettger, 1886)	2	VU		VU
17	<i>Oligodon cinereus tamdaoensis</i> (Günther, 1864)*	3			
18	<i>Ptyas korros</i> (Schlegel, 1837)	2	EN		NT
19	<i>Ptyas multicincta</i> (Roux, 1907)	2			
VIII	Natricidae Bonaparte, 1838				
20	<i>Fowlea piscator</i> (Schneider, 1799)	1			
21	<i>Fowlea flavipunctatus</i> (Hallowell, 1860)	2			
22	<i>Hebius boulengeri</i> (Gressitt, 1937)*	3			
23	<i>Trimerodytes percarinatus</i> (Boulenger, 1899)	2,3			
IX	Pareatidae Romer, 1956				
24	<i>Pareas hamptoni</i> (Boulenger, 1905)*	3			
X	Homalopsidae Günther, 1864				
25	<i>Hypsiscopus plumbea</i> (Boie, 1827)	1			
XI	Elapidae Boie, 1827				
26	<i>Bungarus fasciatus</i> (Schneider, 1801)	2	EN		
27	<i>Bungarus multicinctus</i> Blyth, 1861	2			
28	<i>Bungarus slowinskii</i> Kuch, Kizibian, Nguyen, Lawson, Donnelly & Mebs, 2005	1			VU
29	<i>Naja atra</i> Cantor, 1842	2	EN	IIB	VU
30	<i>Ophiophagus hannah</i> (Cantor, 1836)	2	CR	IB	VU
TESTUDINES Linnaeus, 1758					
XII	Platysternidae Gray, 1869				
31	<i>Platysternon megacephalum</i> Gray, 1831	2	EN	IB	CR
XIII	Geoemydidae Theobald, 1868				
32	<i>Cuora cyclornata</i> Lanck, Mccord & Le Minh, 2006	2	CR	IB	CR

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No	Scientific name	Data source	RBVN (2007)	Decree 84 (2021)	IUCN (2022)
33	<i>Cuora galbinifrons</i> Bourret, 1939	2	EN	IB	CR
34	<i>Cuora mouhotii</i> (Gray, 1862)	1,2		IIB	EN
35	<i>Geoemyda spengleri</i> (Gmelin, 1789)	2		IIB	EN
XIV	Tesrudinidae Gray, 1825				
36	<i>Manouria impressa</i> (Günther, 1882)	1	VU	IIB	EN
XV	Trionychidae Fitzinger, 1826				
37	<i>Palea steindachneri</i> (Siebenrock, 1906)	1	VU	IIB	CR
AMPHIBIA Linnaeus, 1785					
ANURA Fischer Von Waldheim, 1813					
XVI	Buforidae Gray, 1825				
38	<i>Duttaphrynus melanostictus</i> (Schneider, 1799)	1,2			
XVII	Megophryidae Bonaparte, 1850				
39	<i>Boulenophrys palpebralespinosa</i> (Bourret, 1937)*	3	CR		
40	<i>Brachytarsophrys feae</i> (Boulenger, 1887)	1,3			
41	<i>Leptobrachella sungi</i> (Lathrop, Murphy, Orlov, and Ho, 1998)	1			
42	<i>Leptobrachium chapaense</i> (Bourret, 1937)	1			
43	<i>Xenophrys maosonensis</i> (Bourret, 1937)*	3,5			
XVIII	Microhylidae Günther, 1858				
44	<i>Microhyla butleri</i> Boulenger, 1900*	3			
45	<i>Microhyla heymonsi</i> Vogt, 1911	2,3			
46	<i>Microhyla pulchra</i> (Hallowell, 1861)	2			
XIX	Dicroglossidae Anderson, 1871				
47	<i>Fejervarya limnocharis</i> (Gravenhorst, 1829)	1,2			
48	<i>Hoplobatrachus rugulosus</i> (Wiegmann, 1834)	1,2			
49	<i>Limnonectes bannaensis</i> Ye, Fei, Xie, and Jiang, 2007	2,3			
50	<i>Quasipaa spinosa</i> (David, 1875)	1			
51	<i>Quasipaa verrucospinosa</i> (Bourret, 1937)	2			
XX	Ranidae Rafinesque, 1814				
52	<i>Amolops shihaitaoi</i> Wang, Li, Du, Hou, and Yu, 2022*	3,6			
53	<i>Odorrana livida</i> (Blyth, 1856)	2			
54	<i>Odorrana nasica</i> (Boulenger, 1903)*	3			
55	<i>Sylvirana guentheri</i> (Boulenger, 1882)	1			
56	<i>Sylvirana maosonensis</i> (Bourret, 1937)*	3			
57	<i>Sylvirana nigrovittata</i> (Blyth, 1856)	2			
58	<i>Rana johnsi</i> Smith, 1921*	3			
XXI	Rhacophoridae Hoffman, 1932				
59	<i>Polypedates megacephalus</i> Hallowell, 1861	1,2,3,4			
60	<i>Polypedates mutus</i> (Smith, 1940)	1,2,3,4			

Data sources: 1: Nguyen et al. (2009), 2: Dong Thanh Hai & Phan Duc Linh (2015), 3: This study, 4: Kuraishi et al. (2013), 5: Luong et al. (2022) 6: Wang et al. (2022). Decree 84 (2021) = Decree No. 84/2021/ND-CP dated September 22, 2021 of the Government amending and supplementing a number of articles of the Government's Decree No. 06/2019/ND-CP of January 22, 2019, on the management of endangered, precious and rare forest plants and animals and implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Group IB: including species of forest fauna threatened with extinction and banned from exploitation or use for commercial purpose and species in CITES Appendix I naturally inhabiting Vietnam and Group IIB: including species of forest fauna that, although currently not threatened with extinction but may become so without strict control of exploitation and use for commercial purpose and species specified in CITES Appendix II naturally inhabiting Vietnam;

RBVN (2007) = Vietnam Red Data Book. Part I. Animals. Descriptions of nationally endangered species of wild animals. CR = Critically Endangered, EN = Endangered, VU = Vulnerable; IUCN (2022) = The IUCN Red List of Threatened Species ver. 2021.3. CR = Critically Endangered, EN = Endangered, VU = Vulnerable, LR/nt = Lower Risk/Near Threatened, * new provincial record.

4. CONCLUSION

We record 6 species of reptiles and 7 species of amphibians for the first time from Na Hau NR. An updated list of 60 species, comprising 37 reptiles (15 families, 2 orders) and 23 amphibians (6 families, 1 order). Among them, 14 species are listed in the IUCN Red List (2022), 13 species are listed in the Vietnam Red Data Book (2007), and 10 species are listed in the Governmental Decree No. 84 (2021).

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GHI NHẬN MỚI VÀ CẬP NHẬT DANH SÁCH LOÀI BÒ SÁT VÀ LƯỠNG TẠI KHU BẢO TỒN THIÊN NHIÊN NÀ HẦU, TỈNH YÊN BÁI, VIỆT NAM

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TÓM TẮT

Khu Bảo tồn thiên nhiên Nà Hầu (KBTTN) được thành lập năm 2006, thuộc huyện Văn Yên, tỉnh Yên Bái với tổng diện tích 16.950 ha. Khu Bảo tồn bao gồm diện tích rừng núi tự nhiên rộng lớn với sinh cảnh là rừng lá rộng thường xanh và rừng trên núi đá vôi với các hang động đá vôi. Các loài bò sát, lưỡng cư ở khu bảo tồn này vẫn còn ít được biết đến, chưa có nhiều nghiên cứu về các loài bò sát, lưỡng cư ở khu vực này, chỉ có một danh lục loài vào năm 2009 và một bài báo vào năm 2015. Điều tra thành phần loài bò sát, lưỡng cư đã được thực hiện tại KBTTN Nà Hầu vào tháng 9 năm 2020, kết quả ghi nhận phân bố mới của 13 loài bò sát, lưỡng cư cho khu vực nghiên cứu bao gồm: *Takydromus sexlineatus*, *Sphenomorphus cryptotis*, *Tropidophorus hainanus*, *Oligodon cinereus tamdaoensis*, *Hebius boulengeri*, *Pareas hamptoni*, *Boulenophrys palpebralespinosa*, *Xenophrys maosonensis*, *Microhyla butleri*, *Amolops shihaitaoi*, *Odorrana nasica*, *Sylvirana maosonensis*, *Rana johnsi*. Hơn nữa, chúng tôi cũng cung cấp một danh sách cập nhật của 37 loài bò sát và 23 loài lưỡng cư tại khu vực nghiên cứu. Khu Bảo tồn thiên nhiên cũng có mức độ quan tâm bảo tồn cao với 17 loài bị đe dọa, trong đó có 14 loài nằm trong Sách Đỏ IUCN (2022), 13 loài được liệt kê ở Sách Đỏ Việt Nam (2007) và 10 loài có tên trong Nghị định số 84/2021/NĐ-CP của Chính phủ.

Từ khóa: Bò sát, ghi nhận mới, Khu Bảo tồn thiên nhiên Nà Hầu, lưỡng cư, phân bố.

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