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## NEW RECORDS OF BIRDS FROM THE HIGH MOUNTAIN AREA IN THE SOUTHWEST OF NGHE AN PROVINCE, VIETNAM

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### ARTICLE INFORMATION ABSTRACT

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The studies on the birds in western Nghe An as well as shouthwestern Nghe An have been carried out for a long time by numerous authors, mainly in national parks and nature reserve such as Pu Mat, Pu Huong, and Pu Hoat. However, these studies have been conducted for a long time and need to be updated. During the study period in Pu Xai Lai Leng area (Ky Son district) and Pu Mat National Park, 18 species of birds were recorded in addition to this area, including 8 additional species for Pu Xai Lai Leng area and 10 species for Pu Mat National Park.

**Keywords:** New records; Pu Mat; Pu Xai Lai Leng; Western Nghe An; Biosphere Reserve.

### 1. Introduction

The high mountain area in the southwest of Nghe An province belongs to the communes of Con Cuong, Tuong Duong and Ky Son. This area belongs to the Western Nghe An Biosphere Reserve, which was recognized by UNESCO in September 2007. In this area, Pu Mat National Park and Pu Xai Lai Leng area are contiguous, forming a large area, which is the starting point of the green corridor area in the North Central region, Vietnam. According to BirdLife International, this area belongs to the forested lowland belt in central Vietnam, is one of three Endemic Bird Areas (EBAs) of Vietnam, and is one of the 221 EBAs of the world.

Pu Mat National Park and Pu Xai Lai Leng belongs to North Central Vietnam (16°N-19°N), which has special factors about topography, climate, hydrology, geological history, and complicated geography-biology. This is also the Truong Son ecological region, one of the three ecological regions of Vietnam, belonging to the system of 200 typical global ecological regions. So, this area is considered to have high biodiversity. Hitherto, a number of bird studies have been performed here. Ngo and Le [11] reported the diversity of bird species in Pu Mat National Park, including 317 species belonging to 49 families and 14 orders. Hoang and Nguyen [3] announced the composition of the birds in the Pu Xai Lai Leng area with 147 species belonging to 34 families and 13 orders.

Several other studies have been carried out in other areas of the Western Nghe An Biosphere Reserve. Hoang and Nguyen [4] have given some remarks about the importance of avifauna of Pu Huong Nature Reserve in the north-central region, Vietnam as well as a checklist of the birds with 265 species, 51 families, 15 orders. These studies do not cover all areas of the Western Nghe An Biosphere Reserve and have not been updated. Therefore, additional studies are needed, especially in highland areas such as Pu Xai Lai Leng to assess the diversity, as well as update data of the fauna of the bird.

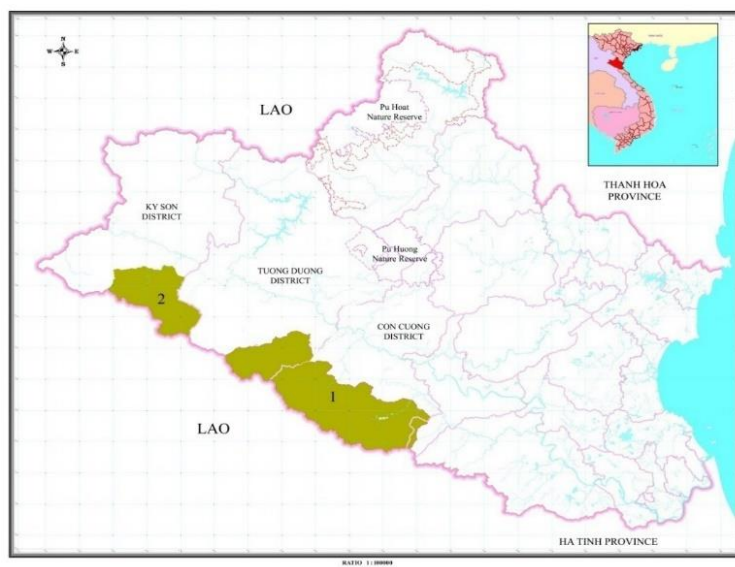
Based on the survey results in 2016 and 2017 at Pu Mat National Park, in 2019 at Pu Xai Lai Leng area, 18 species of birds in the high mountain area of southwest Nghe An have been added, providing additional biodiversity data for the Western Nghe An Biosphere Reserve.

## **2. Methods**

### **2.1. Study areas**

The research was conducted according to the results of the field study in Pu Mat National Park from 2016 to 2017 and in Pu Xai Lai Leng area in 2019. Pu Mat National Park is located in the southwest of Nghe An province, with geographic coordinates  $18^{\circ}46'30''$ - $19^{\circ}19'42''$ N and  $104^{\circ}31'57''$ - $105^{\circ}03'08''$ E, at an altitude of 100-1.841 m a.s.l. Pu Xai Lai Leng area belongs to Na Ngoi and Nam Can communes, Ky Son districts, Nghe An province, which has geographic coordinates  $19^{\circ}4'56''$ - $19^{\circ}18'47''$ N;  $104^{\circ}4'57''$ - $104^{\circ}19'77''$ E. Pu Xai Lai Leng peak has an altitude of 2.711 m a.s.l. and is considered the roof of North Central Vietnam.

The locations of the survey were marked as shown in Figure 1. Field studies were conducted at the following locations: Cao Veu, Khang, Choang and Thoi streams (in Pu Mat Nation Park); Na Ngoi, Keo Bac villages, Na Kam stream, and Pu Xai Lai Leng pinnacle area, which belongs to Na Ngoi commune, Ky Son district, Nghe An province (Table 1).



**Figure 1:** Maps of the locations of the survey. **1.** Pu Mat National Park; **2.** Pu Xai Lai Leng area (Source: Nghe An Environment and Natural Resources Department, Vietnam)

**Table 1:** List sampling sites in the survey area

Time	Site names	Latitude	Longitude	a.s.l. (m)
2016-2017	Cao Veu	18°48.36'N	104°55.92'E	490
	Khang stream	18°48.09'N	104°50.91'E	600
	Choang stream	18°57.26'N	104°41.38'E	300
	Thoi stream	19°3.57'N	104°36.26'E	430
2019	Na Ngoi village	19°14.73'N	104°10.60'E	1.070
	Keo Bac village	19°15.88'N	104°06.21'E	1.030
	Na Kam stream	19°12.36'N	104°11.92'E	1.960
	Pu Xai Lai Leng pinnacle area	19°12.28'N	104°11.40'E	2.330

## 2.2. Methods of bird recognition

Bird species were observed with Nikula 12x60 magnification binoculars, Japan. Camera (Nikon D7000) with a telescope lens attached (Tamron SP AF 200-500mm, F/5-6.3) was used. 17 camera trapping (model SG565FV, ScoutGuard brand) have been used, placed at Khang and Choang streams in Pu Mat Nation Park within 3 months. These cameras have been placed in positions that previously had traces of bird activity. Besides, mist-nets are also used as a valuable method of species inventory because it detects more species, especially cryptic species, living in the bushes and the ground foraging birds. The technique of using mist-net is adapted by Bird survey: Expedition field techniques [1]-[2].

The used mist-nets has a size of 3x12 m and 3x18 m; the meshes of mist-nets is 1.5 x 1.5 cm. Mist-nets are placed in typical habitats of the studied area. The average opening time of mist-net is ten hours per day, from early morning, and checked every one hour. In the evening, the mist-nets are closed to avoid bats, insects, or fallen leaves, etc. The birds caught on the mist-nets are photographed and released back into the wild. Ten mist-nets were used during the field study in Pu Mat Nation Park and Pu Xai Lai Leng area.

A variety of guide books were used in the present study to identify bird species: [7]-[9], [12]-[14]. At the global level, the reference [6] on the status of species conservation which are listed in the Red List of Threatened Species (IUCN, 2020) has been used, which is similar to reference [10] at the national level.

## 3. Results and discussion

In 2008, Ngo and Le [11] announced the species composition of the birds at Pu Mat Nation Park with 317 species belonging to 49 families; Hoang and Nguyen [3] published at the Pu Xai Lai Leng area with 147 species belonging to 34 families.

In the period from 2016 to 2017, field study had been conducted at the Cao Veu, Khe Khang, Khe Choang, Khe Thoi in Pu Mat Nation Park; and Na Ngoi, Keo Bac villages, Can stream, Pu Xai Lai Leng pinnacle in the Pu Xai Lai Leng (2019). 199

species in Pu Mat Nation Park and 125 species in Pu Xai Lai Leng area were recorded. However, 128 species are un-recorded compared to Ngo and Le [11] in Pu Mat Nation Park, and 30 species are also un-recorded when compared to Hoang and Nguyen (2018) [5] in the Pu Xai Lai Leng area. These results also added 10 species to the Pu Mat National Park and 8 species to the Pu Xai Lai Leng area.

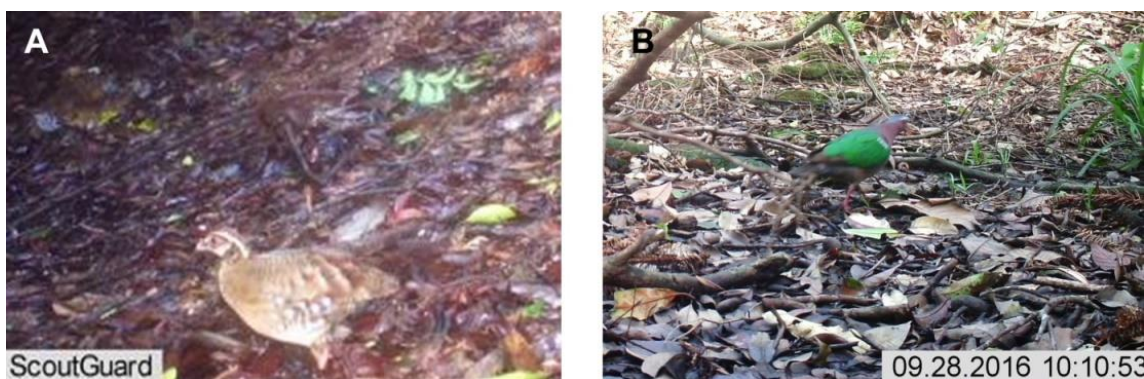
### 3.1. New records to Pu Mat National Park

#### - Orange-necked Hill Partridge *Arborophila davidi* (Delacour, 1927)

Three individuals were recorded with the camera trap (No. 13). Record time: 08 and 22 July 2016. These individuals were discovered in Khang stream, with coordinates 18°48.09'N, 104°50.91'E, 600 m a.s.l. at Pu Mat Nation Park, Nghe An Province, Vietnam (Figure 2A). Their feature characteristics is a black band down the neck and across lower foreneck, throat whitish, breast brown [13].

#### - Emerald Dove *Chalcophaps indica* (Linnaeus, 1758)

One individual was recorded by a camera trap (No. 05). *Chalcophaps indica* was identified by its green wings, brown nape, white forehead, and white shoulder patch, the coral-red bill (Figure 2B) [13]. Record time: 28 September 2016. *Chalcophaps indica* was recorded in Khang stream, with coordinates 18°48.09'N, 104°50.91'E, 600 m a.s.l. at Pu Mat Nation Park, Nghe An Province, Vietnam.



**Figure 2:** Birds were captured by camera traps in Pu Mat National Park

**A.** *Arborophila davidi*. **B.** *Chalcophaps indica*.

(Photos: camera trap - Pu Mat Nation Park)

#### - Oriental Pied Hornbill *Anthracoceros albirostris* (Shaw & Nodder, 1807)

One individual was captured on 02 February 2014 by the camera (Figure 3A). Location: Coordinates 19°3.19'N, 104°51.86'E near the headquarters of the Management Board of Pu Mat National Park (Chi Khe commune), Pu Mat Nation Park, Nghe An Province, Vietnam. *Anthracoceros albirostris* was identified by the following characteristics: whitish face patches and white lower breast and belly; white facial marking; bill and casque pale yellowish with dark marking at the tip; black wings; black tail with broadly white-tipped outer feathers [9], [13].

**- Pin-tailed Parrotfinch *Erythrura prasina* Sparrman, 1788**

One adult male was collected by mist-net (Figure 3B). *Erythrura prasina* was identified by green above, bright red lower rump to long pointed tail [13]. This species was recorded in April 2017 at Choang stream, Pu Mat Nation Park, Nghe An Province, Vietnam with coordinates 18°57.26'N, 104°41.38'E, 300 m a.s.l.

**- Yellow-bellied Prinia *Prinia flaviventris* Delessert, 1840**

One adult individual of this species was collected by mist-net in April 2017 (Figure 3C). This species is easily recognized with greyish head, yellow bell, white eyebrow [12], [13]. This species was recorded at Choang stream, Pu Mat Nation Park, Nghe An Province, Vietnam with coordinates 18°57.26'N, 104°41.38'E, 300 m a.s.l.

**- Ochraceous Bulbul *Alophoixus ochraceus* Moore, 1854**

One adult individual was caught in the mist-net (Figure 3D). This species has a short dark bill, brownish-olive, white throat, below tinged yellow and short crest [13]. This species was recorded in April 2017 at Choang stream, Pu Mat Nation Park, Nghe An Province, Vietnam with coordinates 18°57.26'N, 104°41.38'E, 300 m a.s.l.

**- Yellow-browed Warbler *Phylloscopus inornatus* (Blyth, 1842)**

One individual was collected by mist-net on 11 April 2015 at Kem stream, Pu Mat Nation Park, Nghe An Province, Vietnam (Figure 3E). Distinguishing features of *Phylloscopus inornatus* is olive-green upperparts, two broad yellowish-white wing bars, white eyebrow crown stripe, and yellow rump; underparts dirty whitish [9], [13]. The coordinates of species detection are 18°57.49'N, 104°49.32'E, 580 m a.s.l.

**- Golden-spectacled Leaf Warbler *Seicercus burkii* (E. Burton, 1836)**

One adult individual was caught in the mist-net in April 2017 at Choang stream, Pu Mat Nation Park, Nghe An Province, Vietnam at the coordinate 18°57.26'N, 104°41.38'E, 300 m a.s.l. (Figure 3F). The characteristics of *Seicercus burkii* are lack of supercilium, side of head greenish with thin yellow eye-ring; crown greyish with broad black lateral head stripes; bright yellow underparts, and white outer tail feathers [9].

**- Black-browed Nun Babbler *Alcippe grotei* (Delacour, 1926)**

One individual of species was caught in the mist-net in April 2017 at Choang stream, Pu Mat Nation Park, Nghe An Province, Vietnam at the coordinate 18°57.26'N, 104°41.38'E, 300 m a.s.l. (Figure 3G). *Alcippe grotei* was identified by brown-washed with the vague eye on side of head, a narrow black band from the front of the eye to back of the head and whitish to greyish below [13]. This species has vague eye compared to white eyering in *Alcippe morrisonia*.

**- Blue-and-white Flycatcher *Cyanoptila cyanomelana* (Temminck, 1829)**

One female adult individual was collected in April 2017 at Choang stream, Pu Mat Nation Park, Nghe An Province, Vietnam at the coordinate 18°57.26'N, 104°41.38'E, 300 m a.s.l. (Figure 3H). *Cyanoptila cyanomelana* was identified by rather



uniform pale brownish in the throat/breast; clear-cut white belly, no blue; no white at the tail base [13].



**Figure 3:** Birds were captured by the photograph and mist-net in Pu Mat National Park

**A.** *Anthracoceros albirostris* (Shaw & Nodder, 1807).

**B.** *Erythrura prasina* Sparman, 1788.

**C.** *Prinia flaviventris* Delessert, 1840.

**D.** *Alophoixus ochraceus* Moore, 1854.

**E.** *Phylloscopus inornatus* (Blyth, 1842).

**F.** *Seicercus burkii* (E. Burton, 1836).

**G.** *Alcippe grotei* (Delacour, 1926).

**H.** *Cyanoptila cyanomelana* (Temminck, 1829). (Photos: Nguyen Sy Quoc).



### 3.2. New records to Pu Xai Lai Leng area

#### - Blue-throated Barbet *Psilopogon asiaticus* (Latham, 1790)

This species was observed in October 2019 near Na Ngoi village, Na Ngoi Commune, Ky Son District, Nghe An Province, Vietnam at the coordinate 19°14.73'N, 104°10.60'E, 1.070 m a.s.l. (Figure 4A). *Psilopogon asiaticus* 's identifying feature is red crown, narrow black supercilium; black and yellow bands across mid-crown; base of bill yellow [13].

#### - Black-naped Monarch *Hypothymis azurea* (Boddaert, 1783)

An individual adult male of *Hypothymis azurea* was captured by mist-net and is also sometimes observed in October 2019 at Na Kam stream, Na Ngoi Commune, Ky Son District, Nghe An Province, Vietnam at the coordinate 19°12.36'N, 104°11.92'E, 1.960 m a.s.l. (Figure 4B). This species was identified by blue with a whitish belly; black nuchal tuft, and narrow black breast-band [13].

#### - Black-throated Sunbird *Aethopyga saturata* (Hodgson, 1836)

*Aethopyga saturata* was collected by mist-net in October 2019 at Na Kam stream, Na Ngoi Commune, Ky Son District, Nghe An Province, Vietnam at the coordinate 19°12.36'N, 104°11.92'E, 1.960 m a.s.l. (Figure 4C). These species are distinguished by dark metallic blue head and tail, brown-red back, throat mixed metallic blue and black [9].

#### - Great Tit *Parus major* (Linnaeus, 1758)

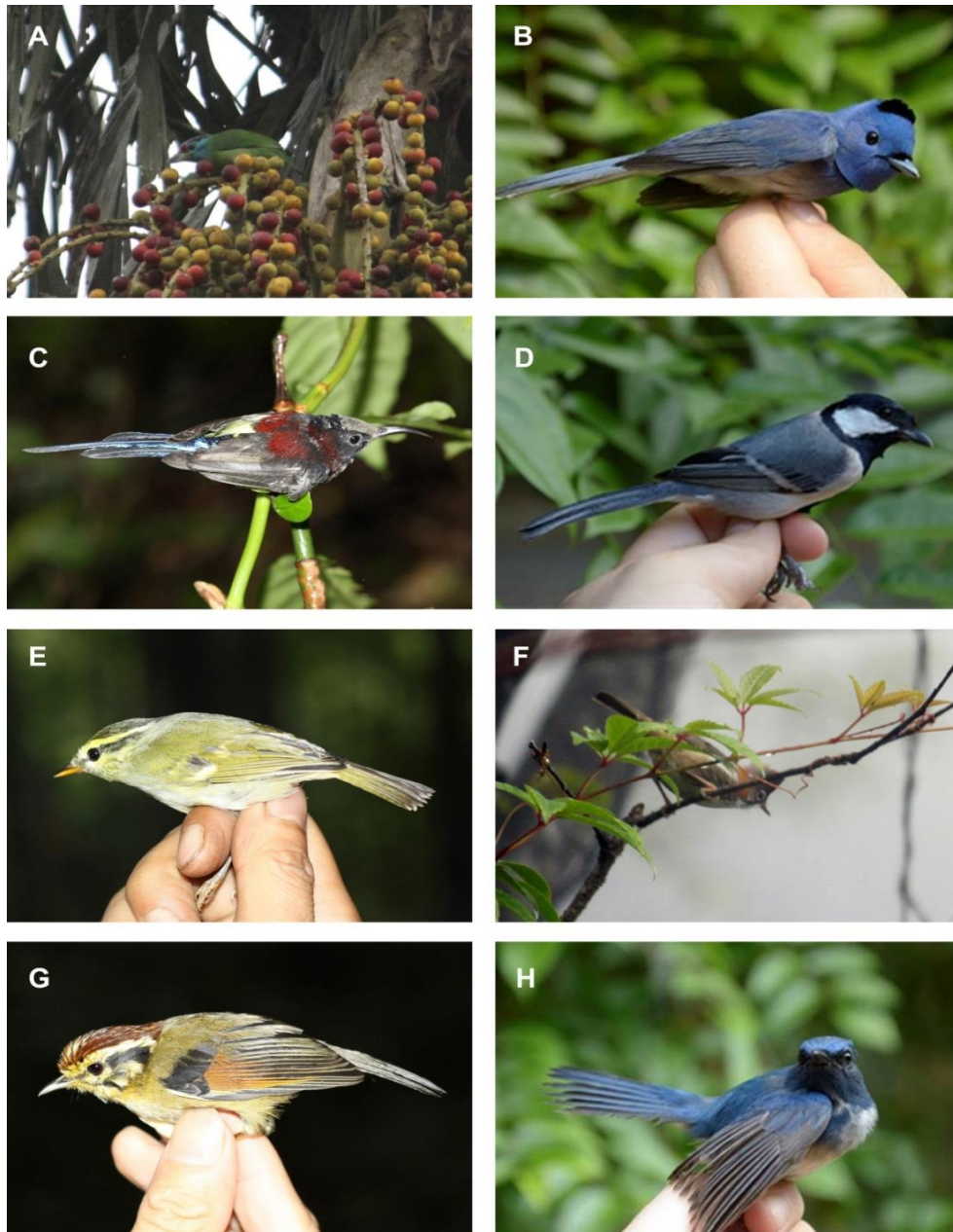
*Parus major* was collected by mist-net in October 2019 at Na Ngoi village, Na Ngoi Commune, Ky Son District, Nghe An Province, Vietnam at the coordinate 19°14.73'N, 104°10.60'E, 1.070 m a.s.l. (Figure 4D). *Parus major* was identified by white cheeks contrast with the black of head and throat; whitish underparts with a bold black line down the center of the breast and belly [9].

#### - Eastern Crowned Leaf Warbler *Seicercus coronatus* (Temminck & Schlegel, 1847)

*Seicercus coronatus* was collected by mist-net in October 2019 at Na Kam stream, Na Ngoi Commune, Ky Son District, Nghe An Province, Vietnam at the coordinate 19°12.36'N, 104°11.92'E, 1.960 m a.s.l. (Figure 4E). *Seicercus coronatus* was identified by pale yellow crown strip; bright green upperparts and whiter breast and belly; yellow vent [9], [13].

#### - Whiskered Yuhina *Yuhina flavicollis* (Hodgson, 1836)

*Yuhina flavicollis* was observed and taken a photo near Pu Xai Lai Leng pinnacle area in October 2019 in Na Ngoi Commune, Ky Son District, Nghe An Province, Vietnam at the coordinate 19°12.28'N, 104°11.40'E, 2.330 m a.s.l. (Figure 4F). *Yuhina flavicollis* was identified by high pointed crest; dark grey-brown crown; black mustache; white eye-ring and bright rufous nuchal collar [9], [13].



**Figure 4:** Birds were recorded in Pu Xai Lai Leng area

- A. *Psilopogon asiaticus* (Latham, 1790).
- B. *Hypothymis azurea* (Boddaert, 1783).
- C. *Aethopyga saturata* (Hodgson, 1836).
- D. *Parus major* (Linnaeus, 1758).
- E. *Seicercus coronatus* (Temminck & Schlegel, 1847).
- F. *Yuhina flavicollis* (Hodgson, 1836).
- G. *Schoeniparus castaneiceps* (Hodgson, 1837).

H. *Cyornis hainanus* (Ogilvie-Grant, 1900). (Photos: Hoang Ngoc Thao, except for *Hypothymis azurea*, *Parus major*, and *Cyornis hainanus*, photographed by Nguyen Sy Quoc).

**- Rufous-winged Fulvetta *Schoeniparus castaneiceps* (Hodgson, 1837)**

An adult male of *Schoeniparus castaneiceps* was collected by mist-net in October 2019 at Na Kam stream, Na Ngoi Commune, Ky Son District, Nghe An Province, Vietnam at the coordinate 19°12.36'N, 104°11.92'E, 1.960 m a.s.l. (Figure 4G). The defining features of the species are dark chestnut crown and nape with narrow buffy streaks; whitish supercilium with curves around the rear margin of mottled ear coverts; blackish mustache and the broad dark line behind the eye [9], [13].

**- Hainan Blue Flycatcher *Cyornis hainanus* (Ogilvie-Grant, 1900)**

An adult male was collected by mist-net in October 2019 at Na Ngoi village, Na Ngoi Commune, Ky Son District, Nghe An Province, Vietnam at the coordinate 19°14.73'N, 104°10.60'E, 1.070 m a.s.l. (Figure 4H). *Cyornis hainanus* was identified by the feature of dark blue upperparts; throat and upper breast, grading into the greyish-white abdomen; bright blue on forecrown and shoulder [9], [13].

**4. Conclusions**

The results of survey were supplemented 18 species of birds to the high mountain area southwest of Nghe An, specifically adding 8 species to Pu Xai Lai Leng area, and 10 species for Pu Mat National Park. Two species were recorded by camera traps, two species by the photograph, and 14 species by mist-net.

**ACKNOWLEDGEMENTS**

We are grateful to the Board of Managers, officials of Pu Mat National Park; committees of Nam Can, Na Ngoi communes, Ky Son district, Nghe An province for facilitating field surveys and collected specimens; we thank the partial funding from the project “Research on biodiversity of vertebrates in the high mountain area Southwest of Nghe An”, Code B2020-TDV-07.

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## TÓM TẮT

### GHI NHẬN MỚI VỀ CÁC LOÀI CHIM Ở VÙNG NÚI CAO TÂY NAM, NGHỆ AN, VIỆT NAM

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Ngày nhận bài 03/01/2023, ngày nhận đăng 16/01/2023

Các nghiên cứu về chim ở miền Tây Nghệ An cũng như khu vực Tây nam Nghệ An đã được thực hiện từ lâu bởi một số tác giả, chủ yếu ở các vườn Quốc gia và Khu bảo tồn thiên nhiên như Pù Mát, Pù Huông, Pù Hoạt. Tuy nhiên, các nghiên cứu này đã được tiến hành từ lâu và cần được cập nhật, bổ sung. Trong thời gian nghiên cứu ở khu vực Pu Xai Lai Leng (huyện Kỳ Sơn) và vườn Quốc gia Pù Mát, đã ghi nhận bổ sung 18 loài chim cho khu vực này, cụ thể gồm có 8 loài bổ sung cho khu vực Pù Xai Lai Leng và 10 loài cho Vườn Quốc gia Pù Mát.

**Từ khóa:** Ghi nhận mới; Pù Mát; Pù Xai Lai Leng; Khu dự trữ Sinh quyển; Miền Tây Nghệ An.

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