

BirdLife International Vietnam Programme
and the Institute of Ecology and Biological Resources
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**A Rapid Field Survey of
Van Ban District,
Lao Cai Province, Vietnam**

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1. Introduction

This report presents the results of a rapid field survey of Van Ban district, Lao Cai province, conducted by the BirdLife International Vietnam Programme and the Institute of Ecology and Biological Resources, as part of the Danida-funded project *Improved conservation planning through institutional strengthening in Cambodia, Laos and Vietnam*. The rapid field survey was carried out in cooperation with the Fauna & Flora International (FFI) Vietnam Programme.

1.1 Aim and objectives

The aim of the rapid field survey was to assess whether or not Van Ban district qualified as an Important Bird Area (IBA). IBAs are areas of international importance for bird conservation that meet internationally recognised criteria. IBAs are not only important for birds, but typically support a wide range of other important animal and plant species.

The specific objectives of the survey were to:

- collect data on the status and distribution of bird species in Van Ban district, particularly globally threatened and restricted-range species;
- collect data on the status and distribution of reptile and amphibian species in Van Ban district.

All data collected during the survey contributed to the feasibility study for the establishment of a protected area in Van Ban district, currently being prepared by the FFI Vietnam Programme.

1.2 Study area

The study area was Van Ban district (21°52' to 22°15'N by 103°57' to 104°26'E), Lao Cai province. Ten days were spent surveying predominantly forest habitats in Khanh Yen Ha commune, which is situated in south-eastern Van Ban district and borders Mu Cang Chai district, Yen Bai province to the south. A further six days were spent surveying forest and anthropogenic habitats in Nam Xe commune, which lies in western Van Ban district and borders Than Uyen district, Lao Cai province to the west. In addition, a number of *ad hoc* records were made in anthropogenic habitats within Van Ban town.

1.3 Itinerary

10 March 2002	Travelled to Lao Cai town
11 March 2002	Travelled to Van Ban town
12-21 March 2002	Surveyed Khanh Yen Ha commune
22 March 2002	Travelled to Van Ban town
23 March 2002	AWT, NQT and SRS returned to Hanoi
22-29 March 2002	Surveyed Nam Xe commune
30 March 2002	LMH returned to Hanoi

2. Birds

2.1 Methods

Birds were surveyed by observation and identification of calls; observations were made continuously from 06h00 to 18h00 each day. Ten days were spent in Khanh Yen Ha commune, where the principal habitats surveyed were lowland evergreen forest, lower montane evergreen forest and upper montane evergreen forest; in addition, short periods were spent surveying anthropogenic habitats around Na Nheo village (800 m asl) and close to Liem Phu commune centre (200 m asl). Lowland evergreen forest is distributed at elevations between 300 and 900 m asl. While this habitat has been degraded by selective timber extraction, the forest canopy is still closed in most areas. Lower montane evergreen forest is distributed at elevations between 900 and 1,800 m asl. This habitat is characterised by the presence of several conifer species, including *Dacrycarpus imbricatus* and *Fokienia hodginsii*. Upper montane evergreen forest is distributed at elevations between 1,800 and at least 2,650 m asl. This habitat is characterised by the presence of *Rhododendron* spp. In addition, *F. hodginsii* is also present, at elevations up to 2,400 m asl. The majority of bird observations were made along the route between Na Nheo village (21°58'N 104°16'E) and an unnamed c.2,650 m asl peak (21°57'N 104°13'E). Five kilometres to the south of this peak, there lies an unnamed 2,913 m asl peak (21°54'N 104°14'E), which is the highest point in Van Ban district. During the survey, it was not possible to visit this peak, or to evaluate which habitats are distributed at elevations above 2,650 m asl.

An additional six days were spent in Nam Xe commune, where the principal habitats surveyed were lower montane evergreen forest and anthropogenic habitats (grassland, scrub and cultivation). The lower montane evergreen forest surveyed in Nam Xe commune was more heavily degraded than that surveyed in Khanh Yen Ha commune, and had an understorey dominated by bamboo. The majority of bird observations were made around Kheo Co pass (22°03'N 103°58'E) and in the area to the south of Nam Xe commune centre (22°02'N 104°01'E). Finally, a number of *ad hoc* records were made in anthropogenic habitats within Van Ban town.

2.2 Results

A total of 156 bird species were recorded during the survey, all but one of which were identified to species level (Appendix 1). During previous surveys of Van Ban district, an additional 61 bird species not found during this survey were recorded (S. R. Swan *in litt.* 2002). Therefore, the total number of species recorded in Van Ban district to date stands at 217.

The bird community of Van Ban district is characteristic of montane evergreen forest in northern Vietnam. Van Ban district supports a significant number of biome-restricted bird species. Fifty eight species recorded in Van Ban district to date are restricted to the Sino-Himalayan Subtropical Forests Biome, while a further 20 species are restricted to the Sino-Himalayan Temperate Forests Biome.

Of the 217 species recorded in Van Ban district to date, 187 species (86% of the total) have been recorded in Sa Pa district, which is adjacent to Van Ban district to the north (Tordoff *et al.* 1999). This indicates a high degree of similarity between the avifaunas of the two districts, which is to be expected given that, at least historically, Sa Pa district supported a similar range of habitat types to those found in Van Ban district today.

The bird community of upper montane evergreen forest is characterised by the presence of a large number of species in the Sylviidae. The species most frequently recorded in this habitat during the survey included Black-faced Warbler *Abroscopus schisticeps*, White-browed Shrike Babbler *Pteruthius flaviscapis*, Chestnut-tailed Minla *Minla strigula*, Red-tailed Minla *M. ignotincta*, Golden-breasted Fulvetta *Alcippe chrysotis*, Rufous-winged Fulvetta *A. castaneiceps*, Black-headed Sibia *Heterophasia melanoleuca*, Stripe-throated Yuhina *Yuhina gularis*, Mrs Gould's Sunbird *Aethopyga gouldiae* and Green-tailed Sunbird *A. nipalensis*.

The bird community of lower montane evergreen forest is quite distinct from that of upper montane

evergreen forest in terms of composition. The species most frequently recorded in this habitat during the survey included Grey Peacock Pheasant *Polyplectron bicalcaratum*, Golden-throated Barbet *Megalaima franklinii*, Red-headed Trogon *Harpactes erythrocephalus*, Grey-headed Canary Flycatcher *Culicicapa ceylonensis*, Yellow-billed Nuthatch *Sitta solangiae*, Mountain Bulbul *Hypsipetes mcclllandii*, Rufous-faced Warbler *Abroscopus albogularis*, Grey Laughingthrush *Garrulax maesi*, Blue-winged Minla *Minla cyanouroptera*, Grey-cheeked Fulvetta *Alcippe morrisonia* and Grey-headed Parrotbill *Paradoxornis gularis*.

During the survey, the bird community of lowland evergreen forest was relatively little studied. Therefore, it is difficult to draw conclusions about its composition. The same is true for the bird communities of anthropogenic habitats.

Records of 14 species made during the survey represent altitudinal extensions from the ranges stated in Robson (2000) (see Table 1). Records of a further three species made during the survey represent range extensions from those stated in Robson (2000) (see Key species accounts).

Table 1: Altitudinal Extensions from the Ranges Stated in Robson (2000)

Common Name	Scientific Name	Altitudinal Range Stated in Robson (2000) (m asl)	Altitudinal Range Recorded during the Survey (m asl)
Hill Partridge	<i>Arborophila torqueola</i>	2,135-2,800	1,900-2,000
Grey-capped Pygmy Woodpecker	<i>Dendrocopos canicapillus</i>	<1,830	1,050-1,900
Oriental Cuckoo	<i>Cuculus saturatus</i>	800-2,030	1,000-2,400
Brown-backed Needletail	<i>Hirundapus giganteus</i>	<1,830	1,900
White-gorgeted Flycatcher	<i>Ficedula monileger</i>	700-1,900	1,950
Beautiful Nuthatch	<i>Sitta formosa</i>	950-2,290	1,050-2,350
Black-faced Warbler	<i>Abroscopus schisticeps</i>	1,525-2,350	1,950-2,500
Long-billed Wren Babbler	<i>Rimator malacoptilus</i>	1,220-2,000	2,500
Rufous-capped Babbler	<i>Stachyris ruficeps</i>	950-2,195	1,200-2,400
Striped Tit Babbler	<i>Macronous gularis</i>	<1,525	400-1,700
Red-billed Leiothrix	<i>Leiothrix lutea</i>	915-2,135	1,900-2,450
Black-eared Shrike Babbler	<i>Pteruthius melanotis</i>	1,220-2,200	2,000-2,350
Black-headed Sibia	<i>Heterophasia melanoleuca</i>	800-2,290	1,950-2,650
Golden Parrotbill	<i>Paradoxornis verreauxi</i>	1,500-2,590	2,000-2,650

Key species accounts

Asian Palm Swift *Cypsiurus balasiensis*

On 12 March 2002, several birds were seen in flight over anthropogenic habitats, at 200 m asl, close to Liem Phu commune centre. On 20 March 2002, several birds were seen in flight over lower montane evergreen forest, at 1,100 m asl, in Khanh Yen Ha commune. These records represent a range extension from that stated in Robson (2000). They are not, however, the first records from West Tonkin, as there exist a number of other published records, including from Hoang Lien Nature Reserve (Tordoff *et al.* 1999), Muong Nhe Nature Reserve (Nguyen Duc Tu *et al.* 2000) and Pu Luong Nature Reserve (Le Trong Trai and Do Tuoc 1998). In addition, this species is listed as occurring in West Tonkin by Vo Quy and Nguyen Cu (1995).

Amur Falcon *Falco amurensis*

At 08h15 on 30 March 2002, a flock of 112 Amur Falcons was observed over Van Ban town at 200 m asl. The birds circled for about 10 minutes, during which time some birds were seen perched in trees within the town. The birds then set off northwards, in the direction of Lao Cai town. Presumably, these birds were passage migrants, en route between their wintering grounds in East Africa and their breeding grounds in Siberia and north-eastern China. The passage of Amur Falcon through Vietnam is a poorly understood phenomenon. The only previous record of a mass migration of this species through Vietnam was made during October 1997, when 1,404 birds passed through the Tram Ton pass, Sa Pa district, in a 13-day period (Tordoff in prep.). The record of three Amur Falcons at the O Quy Ho pass, Sa Pa district, on 5 May 1995 (OBC Bulletin 22, From the Field) indicated that the

spring migration route also encompassed Vietnam. However, the record from Van Ban district is the first evidence of a mass spring migration through Vietnam.

Yellow-billed Nuthatch *Sitta solangiae*

Between 20 and 22 March 2001, several birds per day were seen in lower montane evergreen forest, between 1,050 and 1,400 m asl, in Khanh Yen Ha commune. All records were of single birds in mixed feeding flocks. Yellow-billed Nuthatch is one of the four restricted-range species that define the Fansipan and Northern Laos Secondary Endemic Bird Area (EBA) (Stattersfield *et al.* 2000). A second restricted-range species, Broad-billed Warbler *Tickellia hodgsoni*, was recorded in Van Ban district during a previous survey (Long *et al.* 2000). Therefore, Van Ban district qualifies for inclusion within the secondary EBA.

Beautiful Nuthatch *Sitta formosa*

On 14 March 2002, a single Beautiful Nuthatch was seen in a mixed feeding flock together with White-tailed Nuthatch *S. himalayensis*, Chestnut-tailed Minla, Red-tailed Minla, Mrs Gould's Sunbird and Green-tailed Sunbird. The flock was seen in upper montane evergreen forest, at 2,350 m asl, in Khanh Yen Ha commune. Also in Khanh Yen Ha commune, a single bird was seen on 21 March 2002, in lower montane evergreen forest, at 1,050 m asl. The bird was in a mixed feeding flock that also contained Yellow-billed Nuthatch. At both localities the forest was relatively undisturbed, and contained a high density of mature *Fokienia hodginsii*. While there is speculation that this little-known species may be ecologically reliant, at least locally or partially, on this conifer species (BirdLife International 2001), there have been no studies on its ecological requirements in Vietnam to date.

Rufous-faced Warbler *Abroscopus albogularis*

In Khanh Yen Ha commune, this species was common in lower montane forest between 1,000 and 1,650 m asl, where several birds were seen each day, always in mixed feeding flocks. These records represent a range extension from that stated in Robson (2000). They do not, however, represent the first records from West Tonkin, as there are previous records of the species from Van Ban district, at elevations between 850 and 1,300 m asl (S. R. Swan *in litt.* 2002).

Long-billed Wren Babbler *Rimator malacoptilus*

A single bird was seen on 18 March 2002, in upper montane evergreen forest at 2,500 m asl in Khanh Yen Ha commune. The bird was observed moving through an understorey dominated by the dwarf bamboo, *Arundinaria* sp. The form in Van Ban district belongs to the subspecies *R. m. pasquieri*, which is endemic to the Hoang Lien mountains of Vietnam.

Chestnut-capped Babbler *Timalia pileata*

On 28 March 2002, a flock of five or six birds was seen in grassland by the roadside in Nam Xe commune at 700 m asl. This record represents a range extension from that given in Robson (2000). This is not, however, the first record from West Tonkin, as there is a previous record from Pu Luong Nature Reserve (Le Trong Trai and Do Tuoc 1998).

Key species not recorded

Rufous-necked Hornbill *Aceros nipalensis*

In recent decades, this globally vulnerable species has undergone a major decline in Vietnam, as a result of habitat loss and hunting (BirdLife International 2001). Consequently, only two known populations remain: at Pu Mat Nature Reserve (Grieser Johns ed. 2000) and in Che Tao forest (Tordoff *et al.* 2001). During the survey, Hmong hunters from Na Nheo village, Khanh Yen Ha commune reported that they were familiar with the species, and made accurate imitations of its call. They reported that the species occurs in forest at medium elevations but was now exceedingly rare. No first hand reports of sightings in the last year were obtained. Hmong hunters from Nam Xe commune were also familiar with the species but reported that it no longer occurred in the area. During the survey, the far-carrying call of this species was not heard in either commune. While it is possible that the species may persist in remote areas of Van Ban district, it is likely that any remaining population would be small, fragmented and under intense hunting pressure.

Wards's Trogon *Harpactes wardi*

While this species is known historically from Mount Fan Si Pan in Sa Pa district (Delacour 1930, Eames and Ericson 1996), there have been no recent records from Vietnam (BirdLife International 2001). Khanh Yen Ha commune supports a continuum of natural forest from 300 to at least 2,650 m asl, which seemingly meets the habitat requirements of this species. In addition, the relative abundance of such species as Red-headed Trogon, Maroon Oriole *Oriolus traillii* and Green Cochoa *Cochoa viridis* indicate that hunting pressure on medium-sized birds is currently sustainable. However, the lack of records of Ward's Trogon during the survey, despite extended periods spent observing the canopy and sub-canopy across a wide altitudinal range, is inconsistent with the statement of Delacour (1930) that the species was abundant above 2,100 m asl. Therefore, further studies are required to determine the status of this species in Van Ban district.

Red-winged Laughingthrush *Garrulax formosus*

In Vietnam, this species is only known from the Hoang Lien mountains, with the only recent record being from Mount Fan Si Pan in Sa Pa district (Tordoff *et al.* 1999). According to Robson (2000), the species occurs in evergreen forest and secondary vegetation between 2,400 and 2,800 m asl; habitats that are present in Van Ban district. While several days were spent surveying such habitats during the survey, the species was not recorded. However, given that it is a shy, skulking species, and that several other laughingthrush species previously recorded in Van Ban district were also not recorded during the survey, the possibility that it was overlooked cannot be ruled out.

2.3 Conclusions

Van Ban district qualifies as an Important Bird Area (IBA) because it meets the following criteria:

Criterion A1: The site regularly holds significant numbers of a globally threatened species, or other species of global conservation concern.

The results of the rapid field survey and other previous surveys of Van Ban district indicate that the site supports a significant population of the globally vulnerable Beautiful Nuthatch. This is one of only four known populations of this species in Vietnam. The other populations are at Hoang Lien Nature Reserve, Lao Cai province, and Tay Con Linh and Du Gia proposed nature reserves, Ha Giang province (Tordoff *et al.* 1999, Vogel *et al.* in prep.).

Criterion A2: The site is known or thought to hold a significant component of a group of species whose breeding distributions define an EBA or secondary EBA.

Van Ban district is known to support populations of two of the four restricted range species that define the Fansipan and Northern Laos Secondary EBA: Yellow-billed Nuthatch and Broad-billed Warbler. The site supports suitable habitat for the other two restricted-range species found in the secondary EBA: Ward's Trogon and Red-winged Laughingthrush. To date, however, these species have not been recorded at the site.

Criterion A3: The site is known or thought to hold a significant component of the group of species whose distributions are largely or wholly confined to one biome.

Of the 217 species recorded in Van Ban district to date, 20 are restricted to the Sino-Himalayan Temperate Forests Biome: Hill Partridge *Arborophila torqueola*, Darjeeling Woodpecker *Dendrocopos darjellensis*, Yellow-billed Blue Magpie *Urocissa flavirostris*, Long-tailed Thrush *Zoothera dixonii*, Rufous-gorgeted Flycatcher *Ficedula strophiiata*, Sapphire Flycatcher *F. sapphira*, White-bellied Redstart *Hodgsonius phaenicuroides*, White-tailed Nuthatch, Nepal House Martin *Delichon nipalensis*, Grey-bellied Tesia *Tesia cyaniventer*, Aberrant Bush Warbler *Cettia flavolivacea*, Ashy-throated Warbler *Phylloscopus maculipennis*, Grey-cheeked Warbler *Seicercus poliogenys*, Long-tailed Wren Babbler *Spelaornis chocolatinus*, Streaked Barwing *Actinodura souliei*, Chestnut-tailed Minla, Red-tailed Minla, Golden-breasted Fulvetta, White-browed Fulvetta *Alcippe vinipectus* and Stripe-throated Yuhina.

An additional 58 species restricted to the Sino-Himalayan Subtropical Forests Biome have been recorded in Van Ban district to date: Rufous-throated Partridge *Arborophila rufogularis*, Mountain Bamboo Partridge *Bambusicola fytchii*, Silver Pheasant *Lophura nycthemera*, Bay Woodpecker *Blythipicus pyrrhotis*, Golden-throated Barbet, Rusty-naped Pitta *Pitta oatesi*, Orange-bellied Leafbird *Chloropsis hardwickii*, White-winged Magpie *Urocissa whiteheadi*, Grey Treepie *Dendrocitta formosae*, Maroon Oriole, Black-winged Cuckooshrike *Coracina melaschistos*, Short-billed Minivet *Pericrocotus brevirostris*, White-gorgeted Flycatcher *Ficedula monileger*, Small Niltava *Niltava macgrigoriae*, White-tailed Robin *Myiomela leucura*, Slaty-backed Forktail *Enicurus schistaceus*, Purple Cochoa *Cochoa purpurea*, Green Cochoa, White-shouldered Starling *Sturnus sinensis*, Beautiful Nuthatch *Sitta formosa*, Yellow-cheeked Tit *Parus spilonotus*, Black-throated Tit *Aegithalos concinnus*, Brown-breasted Bulbul *Pycnonotus xanthorrhous*, Flavescent Bulbul *P. flavescens*, Mountain Bulbul, Black Bulbul *Hypsipetes leucocephalus*, Slaty-bellied Tesia *Tesia olivea*, White-tailed Leaf Warbler *Phylloscopus davisoni*, Sulphur-breasted Warbler *P. ricketti*, White-spectacled Warbler *Seicercus affinis*, Rufous-faced Warbler, Black-faced Warbler, Grey Laughingthrush, Rufous-chinned Laughingthrush *Garrulax rufogularis*, Hwamei *G. canorus*, White-browed Laughingthrush *G. sannio*, Blue-winged Laughingthrush *G. squamatus*, Red-tailed Laughingthrush *G. milnei*, Red-billed Scimitar Babbler *Pomatorhinus ochraceps*, Streaked Wren Babbler *Napothera brevicaudata*, Rufous-capped Babbler *Stachyris ruficeps*, Red-billed Leiothrix, *Leiothrix lutea*, Black-headed Shrike Babbler *Pteruthius rufiventer*, White-hooded Babbler *Gampsorhynchus rufulus*, Spectacled Barwing *Actinodura ramsayi*, Blue-winged Minla, Streak-throated Fulvetta *Alcippe cinereiceps*, Grey-cheeked Fulvetta, Black-headed Sibia, Striated Yuhina *Yuhina castaniceps*, Black-chinned Yuhina *Y. nigrimenta*, Grey-headed Parrotbill, Spot-breasted Parrotbill *Paradoxornis guttaticollis*, Golden Parrotbill *P. verreauxi*, Lesser Rufous-headed Parrotbill *P. atrosuperciliaris*, Fork-tailed Sunbird *Aethopyga christinae*, Black-throated Sunbird *A. saturata* and Streaked Spiderhunter *Arachnothera magna*.

Furthermore, seven species restricted to the Indochinese Tropical Moist Forests Biome have been recorded in Van Ban district to date: Grey Peacock Pheasant, Red-vented Barbet *Megalaima lagrandieri*, Sultan Tit *Melanochlora sultanea*, Lesser Necklaced Laughingthrush *Garrulax monileger*, Greater Necklaced Laughingthrush *G. pectoralis*, Black-throated Laughingthrush *G. chinensis* and Rufous-throated Fulvetta *Alcippe rufogularis*.

2.4 Recommendations

1. Further bird survey work in Van Ban district should concentrate on Khanh Yen Ha commune, or any other site that supports a contiguous altitudinal gradient of relatively undisturbed forest habitats, particularly over the range between 1,200 and 2,700 m. Such areas are likely to support a population of Wards's Trogon, and may also support populations of Red-winged Laughingthrush and other key species not recorded in the district to date.
2. Additional studies are also required to investigate the habitat requirements of Beautiful Nuthatch and, in particular, to determine whether this species has an association with *Fokienia hodginsii*. If this is the case, specific conservation measures should be implemented to prevent the over-exploitation of this conifer species.
3. In the short term, conservation measures should be implemented to control hunting of birds, particularly medium-sized birds, such as trogons, pigeons and cochoas. Such measures might include conducting conservation awareness activities, enforcing forest management regulations, and incorporating selective hunting restrictions into forest protection contracts.
4. In the longer term, habitat fragmentation and loss are the biggest threats to bird conservation in Van Ban district. This threat is particularly significant for species restricted to lowland evergreen forest, as this habitat type is being lost at the greatest rate, and most remaining areas are already degraded. Forest management at the site should focus on maintaining existing forest cover, particularly at elevations below 900 m asl.

3. Reptiles and amphibians

3.1 Methods

Reptiles and amphibians were mainly surveyed by specimen collection. The specimens collected were stabilised by immersion in 10% formaldehyde for 8 to 10 hours and then placed in 60% or 70% ethanol (for amphibians and reptiles respectively). All specimens were stored at the Institute of Ecology and Biological Resources (IEBR), where they were identified by reference to relevant literature and other specimens. In addition, a number of common species were recorded on the basis of observation of live animals or remains.

All survey work took place in Khanh Yen Ha commune. Due the absence of aquatic habitats, no specific reptile and amphibian survey work was conducted above 1,800 m asl, although a few *ad hoc* records were made above this elevation. Two nights were spent surveying in secondary habitats around 1,800 m asl, four nights were spent surveying in anthropogenic habitats and lowland evergreen forest around Na Nheo village at 800 m asl, and two nights were spent surveying in lower montane evergreen forest at 1,000 m asl.

3.2 Results

A total of 10 reptile and 22 amphibian species were recorded during the survey (Appendix 2). Due to the limitations of the survey in terms of time and range of habitats surveyed, these totals should not be considered as indications of overall levels of reptile and amphibian diversity at the site.

Three reptile species and one amphibian species recorded during the survey are listed in the *Red Data Book of Vietnam* (Anon. 1992): *Acanthosaura lepidogaster*, *Ptyas korros*, *Bungarus fasciatus* and *Paramesotriton cf. deloustali*. Of these species, *P. cf. deloustali*, is also listed in the *2000 IUCN Red List of Threatened Species* (IUCN 2000) as vulnerable. In addition, a number of species with a restricted distribution in Vietnam were recorded during the survey, including *Amolops chapaensis*, *Paa* spp. and *Rhacophorus appendiculatus*. These species are distributed in high mountain areas, and are associated with forested watercourses.

No turtles were recorded during the survey. However, based on information from local people, the following two species may occur in the area: *Platysternon megacephalum* and *Manouria impressa*. Furthermore, information from local people indicates that several other reptile species with high economic value are present, including *Ophiophagus hannah*, *Naja naja*, *Physignathus cocincinus* and *Varanus salvator*. This information needs to be verified in future surveys.

Key species accounts

Acanthosaura lepidogaster

This species is characteristic of montane evergreen forest. During the survey, a single specimen was collected in lowland evergreen forest at 500 m asl.

Bungarus fasciatus

This species often inhabits forest edge. During the field survey, one dead individual was observed beside a river in degraded lowland evergreen forest, close to Na Nheo village, at 750 m asl.

Paramesotriton cf. deloustali

Specimens of a salamander were collected from rivers and broad streams around Na Nheo village, at elevations between 600 and 900 m asl, and from a broad stream in lower montane evergreen forest at 1,000 m asl. All salamanders observed during the survey were in forested watercourses, in pools with sandy substrates and relatively gentle currents. The specimens were provisionally identified as Vietnamese Salamander *Paramesotriton deloustali*, although further studies are required to confirm this identification. *P. deloustali* is known only from northern Vietnam. Prior to this survey, the only confirmed records of this species were from north-eastern Vietnam, including from Tam Dao National

Park and from Ba Be National Park and surrounding areas. The records from Van Ban district, if confirmed as *P. deloustali*, would be the first records of this species to the west of the Red River, and would significantly extend its known distribution.

3.3 Conclusions

The results of this survey provide only preliminary information on the reptile and amphibian diversity of Van Ban district. At Hoang Lien Nature Reserve, Sa Pa district, which supports a similar range of montane habitats to Van Ban district, 42 species of amphibian have been recorded to date (Ohler *et al.* 2000). Therefore, although only 22 species were recorded in Van Ban district during the survey, the total amphibian diversity at the site can be predicted to be much higher.

The most important finding of the survey was the record of *Paramesotriton* cf. *deloustali*. This is the first record of the genus *Paramesotriton* from the Hoang Lien mountains, despite extensive survey effort in other parts of the mountain range. This can be attributed to the fact that Van Ban district still supports aquatic habitats that have been lost from other parts of the Hoang Lien mountains, particularly forested streams below 1,200 m asl.

One of the major threats to the reptiles and amphibians in Van Ban district is habitat loss. The forest in Khanh Yen Ha commune is being degraded by selective timber extraction and creation of cardamom plantations, and being converted into agricultural land. Another major threat is hunting, which particularly affects turtle and snake species, for which there is high demand in the wildlife trade. According to information from local people, turtles were common near the forest edge and along rivers near Na Nheo village five years ago but have now almost disappeared as a result of exploitation to supply outside traders.

3.4 Recommendations

1. Further surveys are required to more completely investigate the diversity and distribution of reptiles and amphibians in Van Ban district, particularly of turtles, snakes and monitor lizards; three groups that contain high proportions of globally and nationally threatened species. These surveys should take place at different times of the year, in order to allow for seasonal variations in reptile and amphibian activity, and cover all areas of the district.
2. Further studies are required to evaluate the importance of Van Ban district for the conservation of *Paramesotriton deloustali*, to investigate its distribution and ecology, to identify threats, and to propose appropriate conservation measures.

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province, Vietnam. *Forktail*.

Appendix 1: List of bird species recorded during the survey

No.	Common Name	Order, Family, Genus and Species	Site	Altitude Range (m)	Habitats	Notes
		Galliformes				
		Phasianidae				
1	Hill Partridge	<i>Arborophila torqueola</i>	1	1,900-2,000	D	AE
2	Rufous-throated Partridge	<i>A. rufogularis</i>	1	1,800-2,150	C,D	
3	Grey Peacock Pheasant	<i>Polyplectron bicalcaratum</i>	1	1,050-1,500	C	
		Piciformes				
		Picidae				
4	White-browed Piculet	<i>Sasia ochracea</i>	1	300-800	B	
5	Grey-capped Pygmy Woodpecker	<i>Dendrocopos canicapillus</i>	1	1,050-1,900	A,C,D	AE
6	Darjeeling Woodpecker	<i>D. darjellensis</i>	1	2,300	D	
7	Great Spotted Woodpecker	<i>D. major</i>	1	1,850	A,D	
8	Greater Yellownape	<i>Picus flavinucha</i>	1	2,000	D	
9	Bay Woodpecker	<i>Blythipicus pyrrhotis</i>	1	1,850	D	
		Megalaimidae				
10	Great Barbet	<i>Megalaima virens</i>	1	1,800-2,350	C,D	
11	Red-vented Barbet	<i>M. lagrandieri</i>	1,2	300-1,200	B,C	
12	Golden-throated Barbet	<i>M. franklinii</i>	1,2	800-2,200	B,C,D	
		Trogoniformes				
		Trogonidae				
13	Red-headed Trogon	<i>Harpactes erythrocephalus</i>	1	1,050-1,100	C	
		Cuculiformes				
		Cuculidae				
14	Large Hawk Cuckoo	<i>Hierococcyx sparverioides</i>	1	800-2,300	B,C,D	
15	Hodgson's Hawk Cuckoo	<i>H. fugax</i>	1	1,050	C	
16	Oriental Cuckoo	<i>Cuculus saturatus</i>	1	1,000-2,400	C,D	AE
17	Plaintive Cuckoo	<i>Cacomantis merulinus</i>	3	200	A	
		Apodiformes				
		Apodidae				
18	Brown-backed Needletail	<i>Hirundapus giganteus</i>	1	1,900	D	AE
19	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	1	200-1,100	A,C	RE
20	Fork-tailed Swift	<i>Apus pacificus</i>	1,2	800	A	
		Strigiformes				
		Strigidae				
21	Mountain Scops Owl	<i>Otus spilocephalus</i>	1	800-1,800	B,C	
22	Collared Owlet	<i>Glaucidium brodiei</i>	1	1,000-2,050	C,D	
23	Asian Barred Owlet	<i>G. cuculoides</i>	1	800-1,050	B,C	
		Caprimulgidae				
24	Grey Nightjar	<i>Caprimulgus indicus</i>	1	1,000-1,800	A,C	
		Ciconiiformes				
		Accipitridae				
25	Hawk species	<i>Accipiter</i> sp.	1	2,000	D	
26	Black Eagle	<i>Ictinaetus malayensis</i>	1	2,150-2,450	D	
27	Mountain Hawk Eagle	<i>Spizaetus nipalensis</i>	2	1,100	C	
		Falconidae				
28	Amur Falcon	<i>Falco amurensis</i>	3	200	A	
		Ardeidae				
29	Chinese Pond Heron	<i>Ardeola bacchus</i>	3	200	A	

No.	Common Name	Order, Family, Genus and Species	Site	Altitude Range (m)	Habitats	Notes
		Passeriformes				
		Eurylaimidae				
30	Silver-breasted Broadbill	<i>Serilophus lunatus</i>	1	1,050	C	
		Irenidae				
31	Blue-winged Leafbird	<i>Chloropsis cochinchinensis</i>	1	800	B	
32	Orange-bellied Leafbird	<i>C. hardwickii</i>	1,2	800-1,150	B,C	
		Laniidae				
33	Long-tailed Shrike	<i>Lanius schach</i>	3	200	A	
		Corvidae				
34	Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>	1	2,600	D	
35	Common Green Magpie	<i>Cissa chinensis</i>	1	1,050	C	
36	Large-billed Crow	<i>Corvus macrorhynchos</i>	2	800	A	
37	Maroon Oriole	<i>Oriolus trailii</i>	1	900-1,050	A,C	
38	Large Cuckoshrike	<i>Coracina macei</i>	1	2,000	D	
39	Grey-chinned Minivet	<i>Pericrocotus solaris</i>	1,2	950-2,000	C,D	
40	Scarlet Minivet	<i>P. flammeus</i>	1,2	300-1,050	B,C	
41	Bar-winged Flycatcher-shrike	<i>Hemipus picatus</i>	1,2	800-1,050	B,C	
42	Yellow-bellied Fantail	<i>Rhipidura hypoxantha</i>	1	1,950-2,350	D	
43	White-throated Fantail	<i>R. albicollis</i>	1	1,050-2,150	C,D	
44	Ashy Drongo	<i>Dicrurus leucophaeus</i>	1	800-1,800	A,B,C	
45	Bronzed Drongo	<i>D. aeneus</i>	1	1,850	A	
46	Lesser Racket-tailed Drongo	<i>D. remifer</i>	1	1,050-1,950	C,D	
47	Greater Racket-tailed Drongo	<i>D. paradiseus</i>	1	1,050	C	
		Muscicapidae				
48	Chestnut-bellied Rock Thrush	<i>Monticola rufiventris</i>	1	1,850	A	
49	Plain-backed Thrush	<i>Zoothera mollissima</i>	1	2,000	D	
50	White-browed Shortwing	<i>Brachypteryx montana</i>	1	1,800	A	
51	Rufous-gorgeted Flycatcher	<i>Ficedula strophciata</i>	1	2,300	D	
52	White-gorgeted Flycatcher	<i>F. monileger</i>	1	1,950	D	AE
53	Little Pied Flycatcher	<i>F. westermanni</i>	1	2,000	D	
54	Sapphire Flycatcher	<i>F. sapphira</i>	1	2,150-2,350	D	
55	Verditer Flycatcher	<i>Eumyias thalassina</i>	1	800	B	
56	Large Niltava	<i>Niltava grandis</i>	1	2,100	D	
57	Small Niltava	<i>N. macgrigoriae</i>	1	1,950	D	
58	Hill Blue Flycatcher	<i>Cyornis banyumas</i>	1	1,100	C	
59	Grey-headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	1,2	1,050-1,950	C,D	
60	Oriental Magpie Robin	<i>Copsychus saularis</i>	3	200	A	
61	Plumbeous Water Redstart	<i>Rhyacornis fuliginosus</i>	1,2	450-800	A,B	
62	Slaty-backed Forktail	<i>Enicurus schistaceus</i>	1	800	B	
63	Green Cochoa	<i>Cochoa viridis</i>	1	1,050	C	
		Sittidae				
64	Chestnut-vented Nuthatch	<i>Sitta nagaensis</i>	1	2,000	A,D	
65	White-tailed Nuthatch	<i>S. himalayensis</i>	1	2,150-2,450	D	
66	Velvet-fronted Nuthatch	<i>S. frontalis</i>	1	800	B	
67	Yellow-billed Nuthatch	<i>S. solangiae</i>	1	1,050-1,400	C	RRS,NT
68	Beautiful Nuthatch	<i>S. formosa</i>	1	1,050-2,350	C,D	VU,AE
		Paridae				
69	Great Tit	<i>Parus major</i>	1	200	A	
70	Yellow-cheeked Tit	<i>P. sibilnotus</i>	1	1,800-2,350	A,D	
71	Sultan Tit	<i>Melanochlora sultanea</i>	1,2	800-1,400	B,C	

No.	Common Name	Order, Family, Genus and Species	Site	Altitude Range (m)	Habitats	Notes
		Aegithalidae				
72	Black-throated Tit	<i>Aegithalos concinnus</i>	1	1,850-1,900	A	
		Hirundinidae				
73	Barn Swallow	<i>Hirundo rustica</i>	2,3	200-600	A	
		Pycnonotidae				
74	Black-crested Bulbul	<i>Pycnonotus melanicterus</i>	1	650	B	
75	Red-whiskered Bulbul	<i>P. jocosus</i>	3	200	A	
76	Brown-breasted Bulbul	<i>P. xanthorrhous</i>	1	900	A	
77	Sooty-headed Bulbul	<i>P. aurigaster</i>	1,2	200-1,000	A,B	
78	Flavescent Bulbul	<i>P. flavescens</i>	2	1,000	A	
79	Puff-throated Bulbul	<i>Alophoixus pallidus</i>	1	300-1,050	B,C	
80	Ashy Bulbul	<i>Hemixos flavala</i>	1,2	800-1,050	B,C	
81	Mountain Bulbul	<i>Hypsipetes mcclllandii</i>	1,2	1,050-2,200	A,C,D	
82	Black Bulbul	<i>H. leucocephalus</i>	1	250-800	B	
		Zosteropidae				
83	Japanese White-eye	<i>Zosterops japonicus</i>	3	200	A	
		Sylviidae				
84	Slaty-bellied Tesia	<i>Tesia olivea</i>	1,2	1,000-1,950	C,D	
85	Grey-bellied Tesia	<i>T. cyaniventer</i>	1	1,950	D	
86	Mountain Tailorbird	<i>Orthotomus cuculatus</i>	1,2	1,150-1,950	A,C,D	
87	Common Tailorbird	<i>O. sutorius</i>	3	200	A	
88	Dark-necked Tailorbird	<i>O. atrogularis</i>	1	1,000	C	
89	Ashy-throated Warbler	<i>Phylloscopus maculipennis</i>	1	2,400-2,500	D	
90	Yellow-browed Warbler	<i>P. inornatus</i>	1	2,450	D	
91	Blyth's Leaf Warbler	<i>P. reguloides</i>	1	1,850	A	
92	White-tailed Leaf Warbler	<i>P. davisoni</i>	1	2,350-2,400	D	
93	Sulphur-breasted Warbler	<i>P. ricketti</i>	1	1,050	C	
94	Grey-crowned Warbler	<i>Seicercus tephrocephalus</i>	1	1,950	D	
95	White-spectacled Warbler	<i>S. affinis</i>	1	2,150	D	
96	Grey-cheeked Warbler	<i>S. poliogenys</i>	1	1,800-1,950	A,D	
97	Chestnut-crowned Warbler	<i>S. castaniceps</i>	1	1,950-2,100	D	
98	Rufous-faced Warbler	<i>Abroscopus albogularis</i>	1	1,000-1,650	C	RE
99	Black-faced Warbler	<i>A. schisticeps</i>	1	1,950-2,500	D	AE
100	Yellow-bellied Warbler	<i>A. superciliaris</i>	1	400-1,050	A,B,C	
101	Striated Grassbird	<i>Megalurus palustris</i>	2	600	A	
102	Lesser Necklaced Laughingthrush	<i>Garrulax monileger</i>	1	1,050	C	
103	Greater Necklaced Laughingthrush	<i>G. pectoralis</i>	1	1,050	C	
104	Grey Laughingthrush	<i>G. maesi</i>	1	950-1,050	C	
105	Black-throated Laughingthrush	<i>G. chinensis</i>	2	1,100	A	
106	Chestnut-crowned Laughingthrush	<i>G. erythrocephalus</i>	1	1,950-2,350	D	
107	Red-tailed Laughingthrush	<i>G. milnei</i>	1	1,950-2,350	D	
108	Red-billed Scimitar Babbler	<i>Pomatorhinus ochraceps</i>	1	1,100	C	
109	Long-billed Wren Babbler	<i>Rimator malacoptilus</i>	1	2,500	D	AE
110	Streaked Wren Babbler	<i>Napothera brevicaudata</i>	1	1,000	C	
111	Pygmy Wren Babbler	<i>Pnoepyga pusilla</i>	1	1,850-2,500	D	
112	Rufous-fronted Babbler	<i>Stachyris rufifrons</i>	1	1,950	D	
113	Rufous-capped Babbler	<i>S. ruficeps</i>	1,2	1,200-2,400	C,D	AE
114	Golden Babbler	<i>S. chrysaea</i>	1	1,050-2,050	C,D	
115	Grey-throated Babbler	<i>S. nigriceps</i>	1	300-1,500	B,C	

No.	Common Name	Order, Family, Genus and Species	Site	Altitude Range (m)	Habitats	Notes
116	Striped Tit Babbler	<i>Macronous gularis</i>	1	400-1,700	B,C	AE
117	Chestnut-capped Babbler	<i>Timalia pileata</i>	2	700	A	RE
118	Silver-eared Mesia	<i>Leiothrix argentauris</i>	1,2	800-1,800	A,C	
119	Red-billed Leiothrix	<i>L. lutea</i>	1	1,900-2,450	D	AE
120	Black-headed Shrike Babbler	<i>Pteruthius rufiventer</i>	1	2,350	D	
121	White-browed Shrike Babbler	<i>P. flaviscapris</i>	1	1,850-2,450	D	
122	Black-eared Shrike Babbler	<i>P. melanotis</i>	1	2,000-2,350	D	AE
123	Chestnut-fronted Shrike Babbler	<i>P. aenobarbus</i>	1	1,050-2,300	C,D	
124	White-hooded Babbler	<i>Gampsorhynchus rufulus</i>	1	1,050	C	
125	Spectacled Barwing	<i>Actinodura ramsayi</i>	1	1,950	D	
126	Streaked Barwing	<i>A. souliei</i>	1	2,300-2,450	D	
127	Blue-winged Minla	<i>Minla cyanouroptera</i>	1,2	1,000-2,350	C,D	
128	Chestnut-tailed Minla	<i>M. strigula</i>	1	2,350-2,500	D	
129	Red-tailed Minla	<i>M. ignotincta</i>	1	2,050-2,400	D	
130	Golden-breasted Fulvetta	<i>Alcippe chrysotis</i>	1	1,950-2,500	D	
131	Rufous-winged Fulvetta	<i>A. castaneiceps</i>	1	1,950-2,500	D	
132	White-browed Fulvetta	<i>A. vinipectus</i>	1	2,650	D	
133	Streak-throated Fulvetta	<i>A. cinereiceps</i>	1	1,850-2,400	D	
134	Rusty-capped Fulvetta	<i>A. dubia</i>	1	1,850-1,950	D	
135	Grey-cheeked Fulvetta	<i>A. morrisonia</i>	1,2	950-2,200	C,D	
136	Black-headed Sibia	<i>Heterophasia melanoleuca</i>	1	1,950-2,650	D	AE
137	Long-tailed Sibia	<i>H. picaoides</i>	1	1,950-2,000	D	
138	Whiskered Yuhina	<i>Yuhina flavicollis</i>	1	1,000-2,450	A,C,D	
139	Stripe-throated Yuhina	<i>Y. gularis</i>	1	2,200-2,650	D	
140	Black-chinned Yuhina	<i>Y. nigrimenta</i>	1	1,100	C	
141	White-bellied Yuhina	<i>Y. zantholeuca</i>	1	300-2,000	B,C,D	
142	Grey-headed Parrotbill	<i>Paradoxornis gularis</i>	1	1,050	C	
143	Spot-breasted Parrotbill	<i>P. guttaticollis</i>	2	1,100	A	
144	Golden Parrotbill	<i>P. verreauxi</i>	1	2,000-2,650	D	AE
		Nectariniidae				
145	Mrs Gould's Sunbird	<i>Aethopyga gouldiae</i>	1	1,850-2,350	A,D	
146	Green-tailed Sunbird	<i>A. nipalensis</i>	1	1,800-2,500	A,D	
147	Crimson Sunbird	<i>A. siparaja</i>	1,2	200-1,300	A,C	
148	Little Spiderhunter	<i>Arachnothera longirostra</i>	2	700	A	
149	Streaked Spiderhunter	<i>A. magna</i>	1	800-900	A,B	
		Passeridae				
150	Eurasian Tree Sparrow	<i>Passer montanus</i>	3	200	A	
151	White Wagtail	<i>Motacilla alba</i>	1,2	200-800	A	
152	Grey Wagtail	<i>M. cinerea</i>	1,2	200-800	A	
153	Olive-backed Pipit	<i>Anthus hodgsoni</i>	1,2	200-800	A	
154	White-rumped Munia	<i>Lonchura striata</i>	2	600	A	
		Fringillidae				
155	Crested Bunting	<i>Melophus lathami</i>	2	700	A	
156	Yellow-breasted Bunting	<i>Emberiza aureola</i>	2	1,100	A	

Bird names, sequence and species limits follow Inskipp *et al.* (1996), apart from Grey-crowned Warbler *Seicercus tephrocephalus*, which follows Alström and Olsson (1999).

Site: 1= Khanh Yen Ha commune, 2 = Nam Xe commune, 3 = Van Ban town.

Habitats: A = Anthropogenic habitats, B = Lowland evergreen forest, C = Lower montane evergreen forest, D = Upper montane evergreen forest.

Notes: VU = Vulnerable, NT = Near Threatened as per BirdLife International (2001); RRS = Restricted-range Species as per Stattersfield *et al.* (1998); AE = Altitudinal extension, RE = Range extension from that stated in Robson (2000).

Appendix 2: List of reptile and amphibian species recorded during the survey

No.	Class, Order, Family, Genus and Species	Data Source	Altitude Range (m)	Habitat	Notes
	Reptilia				
	Squamata:				
	Gekkonidae				
1	<i>Hemidactylus frenatus</i>	O	800	4	
	Agamidae				
2	<i>Acanthosaura lepidogaster</i>	S	500	2	T
	Scincidae				
3	<i>Mabuya multifasciata</i>	O	400-700	4	
4	<i>M. sp.</i>	O	2,000	1	
	Lacertidae				
5	<i>Takydromus sp.</i>	O	400	2	
	Colubridae				
6	<i>Elaphe prasina</i>	S	500	2	
7	<i>Sinonatrix percarinata</i>	S	1,100	1	
8	<i>Ptyas korros</i>	O	800	3	T
9	<i>Xenochrophis piscator</i>	S	800	4	
	Elapidae				
10	<i>Bungarus fasciatus</i>	O	750	2	T
	Amphibia				
	Caudata:				
	Salamandridae				
1	<i>Paramesotriton cf. deloustali</i>	S	600-1,000	1, 2	VU,E
	Anura:				
	Megophryidae				
2	<i>Leptobrachium hasselti</i>	S	900	1	
3	<i>Leptolalax pelodytoides</i>	S	900	1, 2	
4	<i>L. sp.</i>	S	800-1,800	1, 2	
5	<i>Megophrys lateralis</i>	S	800-1,100	1, 2	
	Bufonidae				
6	<i>Bufo melanostictus</i>	O	750	4	
	Ranidae				
7	<i>Amolops chapaensis</i>	S	800-1,200	1, 2	
8	<i>A. ricketti</i>	S	700-1,200	1, 2	
9	<i>Phrynoglossus laevis</i>	S	700-800	3, 4	
10	<i>Rana guentheri</i>	S	800	4	
11	<i>R. kuhlii</i>	S	750-1,800	1, 2	
12	<i>R. limnocharis</i>	S	700-900	3, 4	
13	<i>R. livida</i> (complex)	S	700-1,200	1, 2	
14	<i>R. maosonensis</i>	S	900	1	
15	<i>R. rugulosa</i>	S	700-800	3, 4	
16	<i>Paa cf. yunnanensis</i>	S	700-1,800	1, 2	
17	<i>P. verrucospinosa</i>	S	700-1,800	1, 2	
	Rhacophoridae				
18	<i>Polypedates leucomystax</i>	S	900	2, 3	
19	<i>Rhacophorus appendiculatus</i>	S	1,000	1	
20	<i>R. sp.</i>	S	2,600	1	
	Microhylidae				
21	<i>Microhyla heymonsi</i>	S	750-850	3, 4	
22	<i>M. pulchra</i>	S	800	3, 4	

Reptile and amphibian names, sequence and species limits follow Cox *et al.* (1998) and Ohler *et al.* (2000).

Data source: O = Observed, S = Specimen.

Habitat: 1 = Primary evergreen forest, 2 = Mixed bamboo forest, 3 = Grassland and scrub, 4 = Agricultural land and human settlement.

Notes: VU = Vulnerable as per IUCN (2000); E = Endangered, T = Threatened as per Anon. (1992).