

Ke Go

Criteria: A1, A2 & A3

Province(s): Ha Tinh
PA Status: Nature Reserve

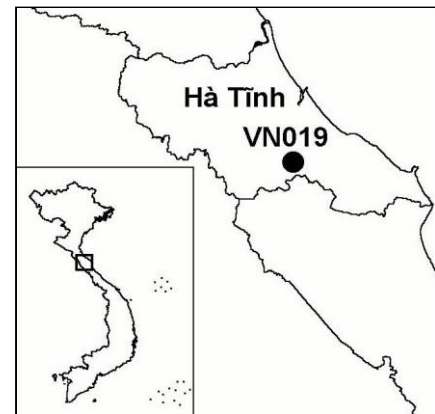
Latitude: 18°05'N
Longitude: 105°59'E
Area: 24,801 ha
Altitude Range: 50-497 m asl

EBA / SA:

Annamese Lowlands EBA

Priority Landscape:

NA5 - Ke Go and Khe Net Lowlands

**General Description**

The IBA comprises Ke Go Nature Reserve, which is situated within the Annamese lowlands. The topography of the IBA is dominated by a range of gently undulating hills, at elevations below 300 m asl, which support an extensive area of lowland evergreen forest. Almost all the forest has been logged at some stage, and undisturbed primary forest is virtually absent. The IBA includes Ke Go lake, a man-made reservoir. To the south, Ke Go IBA is contiguous with Khe Net IBA in Quang Binh province¹.

Bird Fauna: Key Features

Ke Go IBA is situated in the Annamese Lowlands Endemic Bird Area (EBA) and supports populations of five restricted-range bird species: Vietnamese Pheasant *Lophura hatinhensis*, Imperial Pheasant *L. imperialis*, Crested Argus *Rheinardia ocellata*, Short-tailed Scimitar Babbler *Jabouilleia danjoui* and Grey-faced Tit Babbler *Macronous kelleyi*. Of greatest significance, Ke Go IBA, together with the contiguous Khe Net IBA, supports the only known wild population of Vietnamese Pheasant in the world.

Species	IBA Criteria	Global Threat Status	Other IBAs	Notes
Vietnamese Pheasant <i>Lophura hatinhensis</i>	A1, A2	EN	1	In early 1990, one male was trapped to the north-west of Cat Bin town, and 11 males and two females were trapped in forest up to 12 km west of the town. In addition, one male was trapped by rattan collectors at Rao Cai in January 1997 ² .
†White-winged Duck <i>Cairina scutulata</i>	A1	EN	2	A pair and a single individual were recorded on separate occasions flying over Ke Go lake in May 1993 ³ . The site is unlikely to regularly support a significant population of this species.
Crested Argus <i>Rheinardia ocellata</i>	A1, A2	VU	15	During 1994, the species was regularly heard and a single male was observed in closed canopy forest on ridge tops ⁴ .
Chestnut-necklaced Partridge <i>Arborophila charltonii</i>	A1	NT	7	Three individuals were trapped in snares set near Ke Go lake in 1994 ⁴ . The species was also recorded between April and August 1995 ² .
Siamese Fireback <i>Lophura diardi</i>	A1, A3	NT	13	The species was recorded between April and August 1995 ² .
Red-collared Woodpecker <i>Picus rabieri</i>	A1, A3	NT	11	The species was recorded in 1994, when it was considered to be 'relatively common' ⁴ .
Great Hornbill <i>Buceros bicornis</i>	A1	NT	13	The species was observed at Ke Go in June-July 1994 ⁴
Brown Hornbill <i>Anorrhinus tickelli</i>	A1, A3	NT	16	The species was recorded in 1994 ⁴ .
Blyth's Kingfisher <i>Alcedo hercules</i>	A1, A3	NT	8	The species was recorded along forested streams in 1994 ⁴ .
Lesser Fish Eagle <i>Ichthyophaga humilis</i>	A1	NT	6	A single bird was recorded in June 1995 ³ .

Species	IBA Criteria	Global Threat Status	Other IBAs	Notes
Grey-headed Fish Eagle <i>Ichthyophaga ichthyaetus</i>	A1	NT	8	The species was recorded at Ke Go between April and August 1995 ² .
Short-tailed Scimitar Babbler <i>Jabouilleia danjoui</i>	A1, A2	NT	17	In 1994, the species was observed only in taller, selectively logged forest, outside of the Ke Go lake catchment, where it appeared 'rare' ⁴ .
Imperial Pheasant <i>Lophura imperialis</i>	A1, A2	DD	2	In February 1990, an immature male was trapped by rattan collectors 12 km to the west of Cat Bin ⁵ . While the precise locality is not certain, it appears to lie on the border between Ke Go Nature Reserve and Khe Net proposed nature reserve.
Grey-faced Tit Babbler <i>Macronous kelleyi</i>	A2		12	In 1994, the species was observed only in taller, selectively logged forest, outside of the Ke Go lake catchment, where it appeared 'rare' ⁴ .

Notes: † = not confirmed to regularly occur in significant numbers.

Biome Restricted Species: The site qualifies under criterion A3 because it supports 27 species restricted to the Sino-Himalayan Subtropical Forests (Biome 08) and 20 species restricted to the Indochinese Tropical Moist Forests (Biome 09). See Appendix 4 for details.

Secondary Criteria

Species	Status	Species	Status
[Northern Slow Loris <i>Nycticebus bengalensis</i>] ²	DD	Chinese Striped-necked Turtle <i>Ocadia sinensis</i> ⁶	EN
Northern Pigtail Macaque <i>Macaca leonina</i> ²	VU	Keeled Box Turtle <i>Pyxidea mouhotii</i> ⁶	EN
[Assamese Macaque <i>Macaca assamensis</i>] ²	VU	Four-eyed Turtle <i>Sacalia quadriocellata</i> ⁶	EN
[Rhesus Macaque <i>Macaca mulatta</i>] ²	NT	Elongated Tortoise <i>Indotestudo elongata</i> ⁶	EN
Stump-tailed Macaque <i>Macaca arctoides</i> ²	VU	Wattle-necked Softshell Turtle <i>Palea steindachneri</i> ⁶	EN
[Red-shanked Douc <i>Pygathrix nemaus nemaus</i>] ²	EN	Chinese Softshell Turtle <i>Pelodiscus sinensis</i> ⁶	VU
White-cheeked Gibbon <i>Nomascus leucogenys</i> ²	DD	<i>Podocarpus neriifolius</i> ²	DD
Big-headed Turtle <i>Platysternon megacephalum</i> ⁶	EN	*Asian Elephant <i>Elephas maximus</i> ²	EN
Indochinese Box Turtle <i>Cuora galbinifrons</i> ⁶	CR	[Gaur <i>Bos gaurus</i>] ²	VU
Asian Leaf Turtle <i>Cyclemys dentata</i> ⁶	NT	[Southern Serow <i>Naemorhedus sumatraensis</i>] ²	VU
Asian Yellow Pond Turtle <i>Mauremys mutica</i> ⁶	EN		

Notes: [] = unconfirmed record; * = believed to be locally extinct².

Threats to Biodiversity

The inhabitants of the buffer zone of Ke Go Nature Reserve mainly belong to the Kinh ethnic group. Around half the households in the buffer zone supplement their incomes through the exploitation of forest resources. Fragrant oil distillation is a particularly severe threat to biodiversity at Ke Go, as the process requires large quantities of firewood. Small-scale timber extraction also contributes to forest degradation².

Perhaps the biggest threat to biodiversity at Ke Go is hunting, which plays an important role in the local economy. Despite declining mammal and bird populations, hunting pressure remains high, partly in response to demand from the wildlife trade. Most significantly for the populations of key bird species at Ke Go, the use of non-specific hunting methods, such as traps and snares, threatens ground birds, such as Vietnamese Pheasant and Crested Argus².

Threat	Severity
Hunting	• •
Selective logging / cutting	• •

Conservation Actions

- Prior to the establishment of the Ke Go Nature Reserve, the Centre for Natural Resources and Environmental Studies, Ky Anh District People's Committee and Ha Tinh Provincial Department of Science, Technology and Environment implemented a project to protect the Gat Che Me area in the east of the IBA¹.
- Ke Go was decreed as a nature reserve by the government of Vietnam in 1996, and a management board was established in 1997¹.
- In 1996, with funding from the Danish Embassy in Hanoi, BirdLife and Oxfam UK-Ireland implemented a one-year environmental education project, in collaboration with Ky Anh District Department of Education and Training¹.

- Between 1997 and 1999, with funding from the British Birdwatching Fair, BirdLife International implemented a project entitled the *Ke Go Forest Project*, the activities of which included construction of two guard stations, provision of motorbikes and other equipment, and training for nature reserve staff¹.
- In 1998, with funding from the Netherlands Government and technical support from IUCN, the Forest Science Institute of Vietnam initiated a project entitled *Sustainable Utilisation of Non-timber Forest Products at Ke Go Nature Reserve*¹.
- In 2002, BirdLife International, in collaboration with Ha Tinh Provincial Department of Agriculture and Rural Development propose to begin implementing a Danida-funded integrated conservation and development project entitled *Sustainable Management of the Ke Go Nature Reserve*.

Recommendations

- The capacity of the management board of Ke Go Nature Reserve should be strengthened.
- Forest management regulations regarding hunting and exploitation of timber and non-timber forest products should be effectively enforced.
- Mechanisms for community-based natural resource management should be developed and piloted in the buffer zone of the nature reserve.
- Activities should be implemented to raise awareness among local communities of the values of Ke Go, and to promote sustainable use of natural resources.
- Opportunities for collaboration in forest management between the management boards of Ke Go Nature Reserve and Khe Net proposed nature reserve should be sought.
- The taxonomic status of Vietnamese Pheasant and Imperial Pheasant should be reviewed, as this is likely to affect the global conservation importance of the IBA.

References

1. BirdLife International and the Forest Inventory and Planning Institute (2001) *Sourcebook of existing and proposed protected areas in Vietnam*. Hanoi: BirdLife International Vietnam Programme and the Forest Inventory and Planning Institute.
2. Le Trong Trai, Nguyen Huy Dung, Nguyen Cu, Le Van Cham, Eames, J. C. and Chicoine, G. (1999) *An investment plan for Ke Go Nature Reserve, Ha Tinh province, Vietnam: a contribution to the management plan*. Hanoi: BirdLife International Vietnam Programme and the Forest Inventory and Planning Institute.
3. Eames, J. C. and Tordoff, A. W. (in prep) Recent records and a conservation status review of some threatened and near-threatened bird species in Vietnam.
4. Eames, J. C., Lambert, F. R. and Nguyen Cu (1994) A survey of the Annamese lowlands, Vietnam and its implications for the conservation of Vietnamese and Imperial Pheasants *Lophura hatinhensis* and *L. imperialis*. *Birdlife Conservation International* 4(4): 343-382.
5. Robson, C. R., Eames, J. C., Newman, M., Nguyen Cu and Truong Van La (1990) *Forest bird surveys in Vietnam 1989/90: final report*. Unpublished report to the International Council for Bird Preservation
6. Zeigler, T. (2000) *Studies on the herpetofauna of a lowland humid forest protected area in the south of northern Vietnam*. Unpublished dissertation: Rheinischcen Friedrich-Wilhelms-Universitat Bonn, Germany. (In German).



Vietnamese Pheasant *Lophura hatinhensis*

Vu Quang

Criteria: A1, A2 & A3

Province(s): Ha Tinh
PA Status: National Park

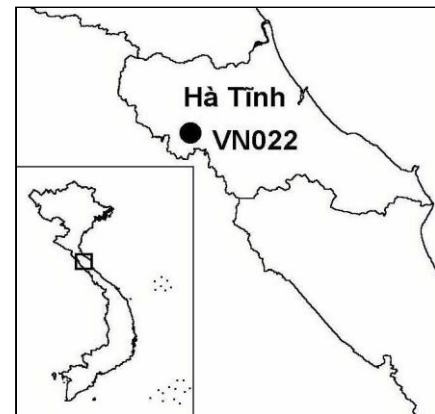
Latitude: 18°17'N
Longitude: 105°26'E
Area: 55,950 ha
Altitude Range: 30-2,286 m asl

EBA / SA:

Annamese Lowlands EBA

Priority Landscape:

NA4 - Northern Annamites

**General Description**

The IBA comprises Vu Quang National Park, which is situated in the northern Annamite mountains. The IBA supports a range of habitat types. At low elevations, the landscape is largely anthropogenic and dominated by agricultural land, grassland and scrub, although there are also a few remaining patches of lowland evergreen forest, especially in inaccessible areas along river valleys^{1,2}. Higher elevations support a range of montane habitat types, including elfin forest along ridge crests at the highest elevations. Below 500 m asl, however, much of the forest has been selectively logged³. To the south, Vu Quang IBA is contiguous with Phou Laoko IBA in Laos.

Bird Fauna: Key Features

Due to the diversity of natural habitats, Vu Quang IBA supports a rich and diverse avifauna. A total of 273 bird species have been recorded at the IBA to date, including 11 globally threatened or near-threatened species. Vu Quang IBA supports a total of 76 biome-restricted species, including Rufous-vented Laughingthrush *Garrulax gularis*, which is not known from any other site in Vietnam. Although Vu Quang IBA lies within the Annamese Lowlands Endemic Bird Area (EBA), the IBA only supports three restricted-range species, none of which are restricted to the EBA⁴.

Species	IBA Criteria	Global Threat Status	Other IBAs	Notes
Crested Argus <i>Rheinardia ocellata</i>	A1, A2	VU	15	Between 10 and 14 males were heard between July and September 1997. The species was also heard in July 1999 ⁴ .
†Spot-billed Pelican <i>Pelecanus philippensis</i>	A1	VU	6	An upper mandible of this species was found in a hunter's house in Kim Quang village in 1992; the mandible reportedly belonged to a bird that was shot from a flock of six seen perched in a tree around 1988 ⁴ . The site does not regularly support a significant population of this species.
Chestnut-necklaced Partridge <i>Arborophila charltonii</i>	A1	NT	7	The species was observed and heard on several occasions in lowland evergreen forest in June 1994 ^{1,2,4} .
Siamese Fireback <i>Lophura diardi</i>	A1, A3	NT	13	A single male was seen in secondary scrub in August 1997 ⁴ .
Red-collared Woodpecker <i>Picus rabieri</i>	A1, A3	NT	11	A male was caught in a mist net in August 1997, and single birds were seen in August and September 1997 ⁴ .
Great Hornbill <i>Buceros bicornis</i>	A1	NT	13	The species was recorded in May 1992 and June 1994 ^{1,2,4} .
Brown Hornbill <i>Anorrhinus tickelli</i>	A1, A3	NT	16	Four flocks of between 5 and 30 birds were seen and two additional flocks were heard in August and September 1997. A flock of 25 birds was seen in July 1999 ⁴ .
Blyth's Kingfisher <i>Alcedo hercules</i>	A1, A3	NT	8	Two specimens were mist-netted above the Con river in July and August 1997, and a single bird was observed on rocks in this river in July 1997 ⁴ .
Lesser Fish Eagle <i>Ichthyophaga humilis</i>	A1	NT	6	One bird was seen in June 1994 and two birds were seen in July 1999 ^{1,2,4} .

Species	IBA Criteria	Global Threat Status	Other IBAs	Notes
[Grey-headed Fish Eagle <i>Ichthyophaga ichthyaetus</i>]	A1	NT	9	The species was included on a list of birds at Vu Quang Nature Reserve on the basis of anecdotal evidence ⁵ . There are no other records of this species from the IBA ⁴ .
Short-tailed Scimitar Babbler <i>Jabouilleia danjoui</i>	A1, A2	NT	17	The species was frequently recorded between July and September 1997. The species was also recorded in July 1999 ⁴ .
Grey-faced Tit Babbler <i>Macronous kelleyi</i>	A2		12	The species was heard in June 1994 ^{1,2,4} . Fledged young were seen in July 1997 ⁴ .

Notes: [] = unconfirmed record; † = not confirmed to regularly occur in significant numbers.

Biome Restricted Species: The site qualifies under criterion A3 because it supports 47 species restricted to the Sino-Himalayan Subtropical Forests (Biome 08) and 19 species restricted to the Indochinese Tropical Moist Forests (Biome 09). See Appendix 4 for details.

Secondary Criteria

Species	Status	Species	Status
Rhesus Macaque <i>Macaca mulatta</i> ⁶	NT	Four-eyed Turtle <i>Sacalia quadriocellata</i> ⁶	EN
Stump-tailed Macaque <i>Macaca arctoides</i> ⁶	VU	Impressed Tortoise <i>Manouria impressa</i> ⁶	VU
Red-shanked Douc <i>Pygathrix nemaeus nemaeus</i> ⁶	DD	<i>Fokienia hodginsii</i> ⁶	NT
White-cheeked Gibbon <i>Nomascus leucogenys</i> ⁶	DD	<i>Podocarpus neriifolius</i> ⁶	DD
Big-headed Turtle <i>Platysternon megacephalum</i> ⁶	EN	[<i>Amenotaxus yunnanensis</i>] ⁶	VU
Indochinese Box Turtle <i>Cuora galbinifrons</i> ⁶	CR	Asian Elephant <i>Elephas maximus</i> ⁶	EN
Chinese Three-striped Box Turtle <i>Cuora trifasciata</i> ⁶	CR	Gaur <i>Bos gaurus</i> ⁶	VU
Asian Leaf Turtle <i>Cyclemys dentata</i> ⁶	NT	Southern Serow <i>Naemorhedus sumtraensis</i> ⁶	VU
		Saola <i>Pseudoryx nghetinhensis</i> ⁶	EN

Notes: [] = unconfirmed record.

Threats to Biodiversity

The major threats to biodiversity at Vu Quang IBA are clearance of forest for agriculture, hunting, timber extraction and grazing of livestock. Clearance of forest for agriculture is a particular threat at lower elevations, and may increase following the construction of National Highway 2, the proposed route of which runs alongside the IBA⁶. This road development may facilitate human settlement in the area. Bird and mammal populations at the IBA are under high hunting pressure, mainly in response to demand from the wildlife trade. Illegal timber extraction is widespread in the IBA, as is firewood collection. It is estimated that a quantity of firewood equivalent to the clear-felling of over 400 ha of forest is extracted from the IBA each year^{2,6}.

Threat	Severity
Agricultural intensification / expansion	● ●
Forest grazing	●
Hunting	● ●
Infrastructure development	● ●
Selective logging / cutting	● ●

Conservation Actions

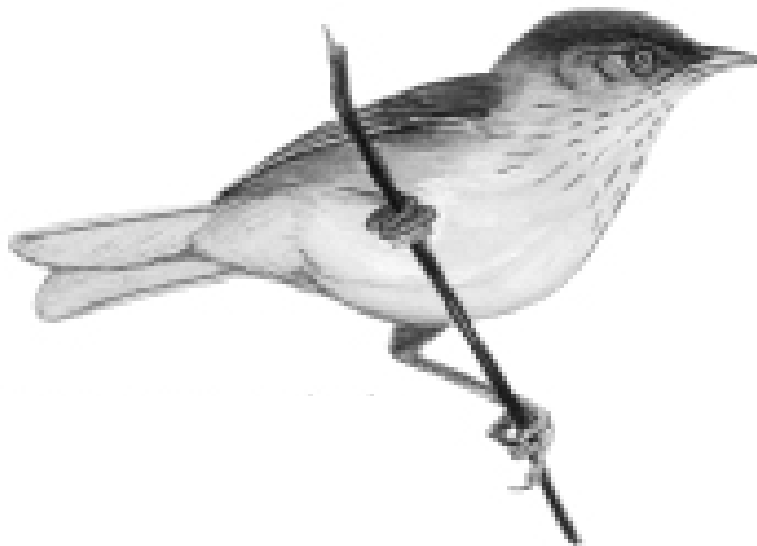
- Vu Quang was decreed as a nature reserve by the government of Vietnam in 1986, and a management board was established in 1994².
- Between June 1995 and June 2000, a project entitled the *Vu Quang Conservation Project* was implemented by the WWF Indochina Programme, with funding from the Royal Netherlands Embassy^{2,6}.
- Vu Quang Nature Reserve was upgraded to national park status in 2002.

Recommendations

- Measures to reduce the impacts of National Highway 2 on biodiversity should be implemented. In particular, human settlement into the buffer zone of the national park should be strictly controlled.
- The enforcement of protected area management regulations, particularly controls on hunting, timber extraction and firewood collection, should be strengthened.

References

1. Eames, J. C., Lambert, F. R. and Nguyen Cu (1994) A survey of the Annamese lowlands, Vietnam and its implications for the conservation of Vietnamese and Imperial Pheasants *Lophura hatinhensis* and *L. imperialis*. *Birdlife Conservation International* 4(4): 343-382.
2. Lambert, F. R., Eames, J. C. and Nguyen Cu (1994) *Surveys for endemic pheasants in the Annamese lowlands of Vietnam, June-July 1994: status of and conservation recommendations for Vietnamese Pheasant Lophura hatinhensis and Imperial Pheasant L. imperialis*. Gland, Switzerland and Cambridge, U.K.: IUCN Species Survival Commission.
3. BirdLife International and the Forest Inventory and Planning Institute (2001) *Sourcebook of existing and proposed protected areas in Vietnam*. Hanoi: BirdLife International Vietnam Programme and the Forest Inventory and Planning Institute.
4. Eames, J. C., Eve, R. and Tordoff, A. W. (2001) The importance of Vu Quang Nature Reserve for bird conservation, in the context of the Annamese Lowlands Endemic Bird Area. *Bird Conservation International* 11: 247-285.
5. MacKinnon, J. R. and Vu Van Dung (1992) *Draft management plan for Vu Quang Nature Reserve, Huong Khe district, Ha Tinh province, Vietnam*. Unpublished report to the Ministry of Forestry, Hanoi, Vietnam.
6. Eve, R., Madhavan, S., and Vu Van Dzung (2000) *Spatial planning for nature conservation in Vu Quang Nature Reserve: a landscape ecology approach*. Vu Quang Nature Reserve Conservation Project, WWF Indochina Program, Hanoi.



Grey-faced Tit Babbler *Macronous kelleyi*

Pu Mat

Criteria: A1, A2 & A3

Province(s): Nghe An
PA Status: National Park

Latitude: 18°57'N
Longitude: 104°42'E
Area: 91,113 ha
Altitude Range: 100-1,841 m asl

EBA / SA:

Annamese Lowlands EBA

Priority Landscape:

NA 4 - Northern Annamites

**General Description**

The IBA comprises Pu Mat National Park, which is situated in the northern Annamite mountains. The highest points in the national park are found along the main ridge of the Annamite mountains, which forms the international border with Laos. The topography of the IBA is dominated by the valleys of three major rivers, which drain eastwards, away from the main ridge. The IBA is extensively forested, with large areas of lowland evergreen forest at lower elevations and smaller areas of lower montane evergreen forest at higher elevations. Along river valleys and at other easily accessible points, the forest has been degraded by illegal timber extraction. However, most of the forest in the IBA remains relatively undisturbed. Pu Mat IBA is an important site for the conservation of plant and animal taxa endemic to the Annamite mountains. For example, the IBA is known to support populations of Saola *Pseudoryx nghetinhensis*, Annamite Muntjac *Muntiacus truongsonensis* and Annamite Striped Rabbit *Nesolagus timminsi*^{1,2}.

Bird Fauna: Key Features

Pu Mat IBA supports a large area of relatively undisturbed evergreen forest, over a wide altitudinal gradient. Consequently, the IBA supports a rich and diverse avifauna. Most significantly the IBA supports one of the most extensive areas of lowland evergreen forest remaining in the Annamite Lowlands Endemic Bird Area (EBA). While Pu Mat only supports two of the nine restricted-range species that define this EBA, it supports a significant number of globally threatened and near-threatened species, including several that are characteristic of relatively undisturbed lowland evergreen forest, such as Red-collared Woodpecker *Picus rabieri*, Blyth's Kingfisher *Alcedo hercules* and Lesser Fish Eagle *Ichthyophaga humilis*. In addition to species characteristic of lowland evergreen forest, Pu Mat IBA supports a large number of species characteristic of lower montane evergreen forest, including over 50 species restricted to the Sino-Himalayan Subtropical Forests Biome. These species include a number that are known from few other IBAs in Vietnam, such as Dark-sided Thrush *Zoothera marginata*, Yellow-throated Fulvetta *Alcippe cinerea* and, provisionally, Blue-naped Pitta *Pitta nipalensis*. Most significantly, lower montane evergreen forest at Pu Mat supports a population of the globally vulnerable Rufous-necked Hornbill *Aceros nipalensis*, which is currently known to occur at only one other site in Vietnam: Che Tao IBA. However, the population of Rufous-necked Hornbill at Pu Mat has been much reduced by heavy hunting pressure².

Species	IBA Criteria	Global Threat Status	Other IBAs	Notes
Crested Argus <i>Rheinardia ocellata</i>	A1, A2	VU	15	The species was frequently heard, from low elevations up to at least 1,300 m asl, between April and May 1999 ³ .
Rufous-necked Hornbill <i>Aceros nipalensis</i>	A1, A3	VU	1	Three birds were seen between November and December 1994 ⁴ . Small numbers were recorded at four locations during 1998 ³ . A group of two to four birds was recorded at 1,400 m asl on the north-west face of Mount Pu Mat in April 1999 ³ .
Chestnut-necklaced Partridge <i>Arborophila charltonii</i>	A1	NT	7	Several birds were heard between July and November 1998 ³ and between April and May 1999 ³ .
Red-collared Woodpecker <i>Picus rabieri</i>	A1, A3	NT	11	A single sighting was made between July and November 1998 ³ . Single individuals were recorded on two separate occasions in April 1999 ³ .

Species	IBA Criteria	Global Threat Status	Other IBAs	Notes
Great Hornbill <i>Buceros bicornis</i>	A1	NT	13	One or two individuals were recorded in the Khe Thoi area and two or three birds were recorded on Mount Pu Xam Liem in November 1998 ³ . Single birds were heard calling on four occasions during April 1999 ³ .
Brown Hornbill <i>Anorrhinus tickelli</i>	A1, A3	NT	16	The species was recorded between November and December 1994 ⁵ and between April and May 1999 ³ . Flocks of at least 25 birds were observed between July and November 1998 ³ .
Blyth's Kingfisher <i>Alcedo hercules</i>	A1, A3	NT	8	The species was found to be widely distributed on forested rivers and larger streams during surveys between July and November 1998 and between April and May 1999 ³ .
Lesser Fish Eagle <i>Ichthyophaga humilis</i>	A1	NT	6	Two birds, thought to be this species, were seen in July 1998 ³ . A single individual was recorded in April 1999 ³ .
Grey-headed Fish Eagle <i>Ichthyophaga ichhyaetus</i>	A1	NT	8	A single bird was seen along the Khe Bong river in lowland evergreen forest at c.500 m asl in May or June 2002 ⁶ .
Short-tailed Scimitar Babbler <i>Jabouilleia danjoui</i>	A1, A2	NT	17	Two individuals were recorded in November 1998 ³ . In addition, two birds were recorded at c.800 m asl and a single bird was seen at c.900 m asl in April 1999 ³ .

Biome Restricted Species: The site qualifies under criterion A3 because it supports 51 species restricted to the Sino-Himalayan Subtropical Forests (Biome 08) and 19 species restricted to the Indochinese Tropical Moist Forests (Biome 09). See Appendix 4 for details.

Secondary Criteria

Species	Status	Species	Status
Northern Slow Loris <i>Nycticebus bengalensis</i> ²	DD	[Chinese Stripe-necked Turtle <i>Ocadia sinensis</i>] ²	EN
Pygmy Loris <i>Nycticebus pygmaeus</i> ²	VU	[Keeled Box Turtle <i>Pyxidea mouhotii</i>] ²	EN
[Northern Pigtail Macaque <i>Macaca leonina</i>] ²	VU	Four-eyed Turtle <i>Sacalia quadriocellata</i> ²	EN
Assamese Macaque <i>Macaca assamensis</i> ²	VU	[Elongated Tortoise <i>Indotestudo elongata</i>] ²	EN
Rhesus Macaque <i>Macaca mulatta</i> ²	NT	Impressed Tortoise <i>Manouria impressa</i> ²	VU
Long-tailed Macaque <i>Macaca fascicularis</i> ²	NT	[Asiatic Softshell Turtle <i>Amyda cartilaginea</i>] ²	VU
Stump-tailed Macaque <i>Macaca arctoides</i> ²	VU	Wattle-necked Softshell Turtle <i>Palea steindachneri</i> ²	EN
*[Red-shanked Douc <i>Pygathrix nemaus nemaus</i>] ²	EN	[Chinese Softshell Turtle <i>Pelodiscus sinensis</i>] ²	VU
White-cheeked / Buff-cheeked Gibbon <i>Nomascus leucogenys/ gabriellae</i> ²	DD/VU	<i>Fokienia hodginsii</i> ²	NT
Big-headed Turtle <i>Platysternon megacephalum</i> ²	EN	Asian Elephant <i>Elephas maximus</i> ²	EN
Indochinese Box Turtle <i>Cuora galbinifrons</i> ²	CR	*[Lesser One-horned Rhinoceros <i>Rhinoceros sondaicus</i>] ²	CR
[Chinese Three-striped Box Turtle <i>Cuora trifasciata</i>] ²	CR	[Indochinese Warty Pig <i>Sus bucculentus</i>] ²	DD
[Asian Leaf Turtle <i>Cyclemys dentata</i>] ²	NT	Gaur <i>Bos gaurus</i> ²	VU
[Black-breasted Leaf Turtle <i>Geoemyda spengleri</i>] ²	EN	Southern Serow <i>Naemorhedus sumatraensis</i> ²	VU
		Saola <i>Pseudoryx nghetinhensis</i> ²	EN

Notes: [] = unconfirmed record; * = possibly extinct at the site.

Threats to Biodiversity

The relatively large area of forest at Pu Mat IBA provides a certain degree of natural protection to the biodiversity of the IBA. However, the natural resources of Pu Mat remain under high human pressure. One of the major threats to biodiversity at Pu Mat is large-scale illegal timber extraction, which is degrading significant areas of lowland evergreen forest place along the main river valleys. In addition, most other areas of forest in the IBA have been affected by small-scale illegal timber extraction, although the impact of this has been limited in most places.

Another major threat to biodiversity is over-exploitation of animals, which is widespread at Pu Mat in response to the high level of demand from the wildlife trade. Over-exploitation is a particular threat to populations of certain mammal and reptile species, and results of recent surveys indicate that at least some globally threatened mammals, such as Red-shanked Douc *Pygathrix nemaus nemaus*, may have already been eradicated from the IBA². Additional threats to biodiversity at Pu Mat include over-exploitation of non-timber forest products, such as rattans and orchids, clearance of forest for cultivation, and gold mining².

Threat	Severity
Agricultural intensification / expansion	●
Extraction industry (mining)	●
Hunting	● ● ●
Selective logging / cutting	● ●
Unsustainable exploitation of NTFPs	● ●

Conservation Actions

- In 1986, the establishment of Pu Mat Nature Reserve was decreed by the government of Vietnam, and, subsequently, a management board was established¹.
- In 1997, the Ministry for Agriculture and Rural Development, with support from the European Union, began implementation of an integrated conservation and development project, entitled *Social Forestry and Nature Conservation*, at the IBA¹.
- In 2001, Pu Mat Nature Reserve was upgraded to national park status.

Recommendations

- The enforcement of national park management regulations should be strengthened, particularly controls on hunting and timber extraction.
- Effective measures should be introduced to control the rampant trade in wildlife within the northern Annamites in general and Nghe An province in particular.
- Special emphasis should be placed on protecting remaining areas of lowland evergreen forest within the main river valleys at the site and promoting regeneration of degraded forest in these areas.
- Biological surveys should be carried out in contiguous forest areas to the north-west and south-east of the IBA, particularly the 2,711 m asl Mount Pu Xai Lai Leng, the highest peak in the Annamite mountains.

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Blyth's Kingfisher *Alcedo hercules*