

Copia Proposed Nature Reserve

Alternative site name(s)

None

Province(s)

Son La

Area

19,353 ha

Coordinates

21°17' - 21°25'N, 103°32' - 103°44'E

Agro-ecological zone

North-western

Decreed by government

No

Management board established

Yes

Investment plan prepared

Yes

VCF eligibility criteria met

B, C

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Copia is not included on any government decision or official set of proposals regarding the national Special-use Forests system (MARD 1997, FPD 2003). However, an investment plan to establish a 19,353 ha nature reserve at the site was prepared by Son La Provincial FPD in 2002 (Son La Provincial FPD 2002). Later in 2002, the investment plan was approved by Son La Provincial People's Committee, and a management board was established, following Decision No. 3440/QD-UB. The management board currently has 20 members of staff, based at four guard stations, and is under the management of Son La Provincial FPD (Nguyen Van Luan, Son La Provincial FPD *in litt.* 2002).

Topography and hydrology

Copia proposed nature reserve is located in Thuan Chau district, Son La province. The proposed nature reserve is centred on Mount Copia, a 1,800 m peak.

Biodiversity values

Copia proposed nature reserve supports around 12,000 ha of natural forest, mostly lower montane evergreen forest. There is little additional information available about the biodiversity values of the proposed nature reserve.

Conservation issues

The major threats to biodiversity at the proposed nature reserve are reported to be agricultural encroachment and hunting (S. Swan *in litt.* 2003). Little forest remains at lower elevations within the nature reserve, apparently as a result of clearance for shifting cultivation.

Other documented values

Son La Provincial FPD are considering developing the site for ecotourism, along the lines of Ba Vi and Tam Dao National Parks (S. Swan *in litt.* 2003).

Related projects

There exists a plan to implement a government-funded pilot rural development project at the site, focussing on sedentarised Hmong communities (S. Swan *in litt.* 2003).

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

Copia is ineligible for VCF support because it does not meet the criteria for supporting forest biodiversity of international importance.

Criterion	Eligibility
A _I	
A _{II}	
B _I	Proposed Special-use Forest
B _{II}	Nature Reserve
B _{III}	Under provincial management
C _I	Management board established
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

Son La Provincial FPD (2002) [Investment plan to protect and develop Copia Nature Reserve, Son La province]. Son La: Son La Provincial Forest Protection Department. In Vietnamese.

Dao Ho Song Da Cultural and Historical Site

Alternative site name(s)

Hoa Trang

Province(s)

Hoa Binh

Area

3,000 ha

Coordinates

20°42' - 20°52'N, 105°00' - 105°20'E

Agro-ecological zone

North-western

Decreed by government

Yes

Management board established

No

Investment plan prepared

Yes

VCF eligibility criteria met

None

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Dao Ho Song Da, which means islands in the Black River reservoir, was included on Decision No. 194/CT of the Chairman of the Council of Ministers, dated 9 August 1986 (MARD 1997). This decision decreed the establishment of a 3,000 ha cultural and historical site, for the "protection of the reservoir basin and the conservation of birds and animals" (Cao Van Sung 1995). In 1989, the Forest Resources and Environment Centre of FIPI conducted a field survey of Hao Trang island, one of the biggest islands in the Black River reservoir, which provided information for the preparation of an investment plan for the site. This investment plan was approved by Hoa Binh Provincial People's Committee later that year (Vu Van Dung pers. comm.). However, an investment plan for Dao Ho Song Da Cultural and Historical Site has never been approved by MARD, and a management board has not been formed. Nevertheless, Dao Ho Song Da is included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD, as a 3,000 ha cultural and historical site (FPD 2003); this list has not yet been approved by the government.

Topography and hydrology

The Black River reservoir was formed following the construction of the Hoa Binh dam, which took

place between 1979 and 1994. The dam was built to generate hydroelectricity, and the power station at the base of the dam has one of the largest capacities in Vietnam. The formation of the reservoir has inundated a 200 km stretch of the Black River valley to a depth of up to 100 m, and created many islands.

Biodiversity values

Data on the flora and fauna of Dao Ho Song Da Cultural and Historical site are scarce. The natural vegetation on most of the islands in the reservoir was tropical evergreen forest. However, the forest on most islands experienced a high degree of disturbance prior to and following the creation of the reservoir.

Conservation issues

Timber extraction on the islands and dynamite fishing in the reservoir are two of the principal threats to biodiversity at the site (Le Trong Trai pers. comm.).

Other documented values

The numerous forested islands in the reservoir have potential value for tourism. Indeed, the site already receives domestic and foreign visitors. The site has some water catchment protection value for the Hoa Binh hydroelectric dam. However, as a proportion of the total catchment of the Black River, the area

Dao Ho Song Da Cultural and Historical Site

covered by Dao Ho Song Da Cultural and Historical Site is probably not very significant.

Related projects

No information.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

The site is ineligible for VCF support because it does not meet the criteria for supporting forest biodiversity of international importance. In addition, the site is a cultural and historical site, and it is not under appropriate conservation management.

Criterion	Eligibility
A _I	
A _{II}	
B _I	Decision No. 194/CT, dated 09/08/86
B _{II}	
B _{III}	Under provincial management
C _I	
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

Ho Thanh Hai (1995) [The classification of Hoa Binh reservoir]. Pp 320-328 in: Dang Huy Huynh, Nguyen Tien Ban, Vu Quang Con, Nguyen Thi Le, Pham Van Luc, Tran Dinh Ly, La Dinh Moi and Cao Van Sung eds. [Results of research by IEBR] Hanoi: Institute of Ecology and Biological Resources. In Vietnamese.

Scott, D. A. (1989) A directory of Asian wetlands. Gland: IUCN.

Hoang Lien Son-Lai Chau Proposed Nature Reserve

Hoang Lien Son-Lai Chau Proposed Nature Reserve

Alternative site name(s)

None

Province(s)

Lai Chau

Area

19,739 ha

Coordinates

22°19'N, 103°43'E

Agro-ecological zone

North-western

Decreed by government

No

Management board established

No

Investment plan prepared

Yes

VCF eligibility criteria met

A, B

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Decision No. 194/CT of the Chairman of the Council of Ministers, dated 9 August 1986, decreed the establishment of a 5,000 ha nature reserve called Nui Hoang Lien (see Hoang Lien National Park site card). According to this decision, however, the nature reserve was in the former Hoang Lien Son province (now Lao Cai and Yen Bai provinces) (MARD 1997). Consequently, the establishment of a nature reserve on the Lai Chau side of the Hoang Lien mountains has not been decreed by the government.

In October 2000, an investment plan prepared by North-western Sub-FIPI proposed establishing a nature reserve in Ho Thau, Binh Lu and Ban Bo communes, Phong Tho district, Lai Chau province. The total area of the nature reserve given in the investment plan is 19,739 ha, comprising a strict protection area of 13,921 ha, a forest rehabilitation area of 4,554 ha and an administration and services area of 1,264 ha (Anon. 2000). To date, however, this investment plan has not been approved, and a management board has not been established. In addition, the site is not included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD (FPD 2003).

Topography and hydrology

Hoang Lien Son-Lai Chau proposed nature reserve is situated on the south-western flank of the Hoang

Lien mountains. The Hoang Lien mountains extend south from the Ailao Shan mountains in China, the south-easternmost extension of the Himalayan chain. The highest point in the proposed nature reserve is Mount Fansipan, which, at 3,143 m, is the highest mountain in Vietnam. Mount Fansipan is situated on the border between Lai Chau and Lao Cai provinces, and the north-eastern face of the mountain lies within Hoang Lien National Park. To the south-west of Mount Fansipan, elevations drop sharply to under 800 m at the foot of the mountain. Further north-west along the ridge of the Hoang Lien mountains, there are a number of other peaks above 2,800 m.

The south of the proposed nature reserve is in the catchment of the Nam Mu river, while the north is in the catchment of the Nam Na river. Both of these rivers are part of the Black River watershed.

Biodiversity values

There is little specific information available about the biodiversity value of Hoang Lien Son-Lai Chau proposed nature reserve. However, given that the proposed nature reserve is contiguous with and supports the same range of habitats as Hoang Lien National Park, it can be assumed that the biodiversity values of the two sites are similar (see Hoang Lien National Park site card). Given the lower human population density and more inaccessible nature of the forest at Hoang Lien Son-Lai Chau, it is possible that levels of human impact may be lower than at Hoang

Hoang Lien Son-Lai Chau Proposed Nature Reserve

Lien National Park, and that certain mammal and bird species may occur at higher densities (A. Tordoff pers. obs.). However, detailed field surveys are required to accurately assess the biodiversity value of Hoang Lien Son-Lai Chau.

Hoang Lien Son-Lai Chau supports two main forest types: lower montane evergreen forest and upper montane evergreen forest. Both these forest types are dominated by species in the Fagaceae, Magnoliaceae and Lauraceae families, including *Lithocarpus* spp., *Castanopsis* spp., *Michelia* spp. and *Manglietia* spp. Ridges at high elevations support sub-alpine forest formations, characterised by trees with stunted growth forms, and the presence of *Rhododendron* spp. and several conifer species. At the highest elevations, there are stands of dwarf bamboo, cf. *Arundinaria* (A. Tordoff pers. obs.). The precise altitudinal ranges of each vegetation type are not currently known.

According to the investment plan, Hoang Lien Son-Lai Chau proposed nature reserve supports 10,871 ha of natural forest, equivalent to 55% of the proposed nature reserve. Most of the remaining area of the proposed nature reserve supports scrub, grassland and agricultural land (Anon. 2000).

Hoang Lien Son-Lai Chau proposed nature reserve is situated within the Fansipan and Northern Laos Secondary Area (Stattersfield *et al.* 1998), and probably supports populations of one or more of the four restricted-range bird species that occur in the secondary area. Together with the adjacent Hoang Lien National Park, the proposed nature reserve qualifies as an Important Bird Area (Tordoff 2002). In addition, it is probable that the proposed nature reserve supports a significant proportion of the plant species endemic to the Hoang Lien mountains.

Conservation issues

According to the investment plan, a total of 2,651 people in 14 villages live inside the nature reserve, while a further 4,040 people in 16 villages live in the buffer zone. Most of these people belong to the Kinh, Hmong, Thai, Giay and Dao ethnic groups. At 2.4% per year, the population growth rate in the proposed nature reserve and buffer zone is significantly higher than that of the country as a whole (Anon. 2000).

Threats to biodiversity at Hoang Lien Son-Lai Chau proposed nature reserve include hunting, and over-exploitation of timber and non-timber forest products. However, the biggest threat is probably fire. Fires are frequent during the dry season, and are usually associated with the clearance of vegetation from hill agricultural land. Large areas of the proposed nature reserve have been cleared of forest as a result of fire, even at elevations above 2,000 m (A. Tordoff pers. obs.).

Other documented values

Hoang Lien Son-Lai Chau proposed nature reserve has an important role in protecting the water resources of local communities and the watershed of the Black River.

Related projects

No information.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

The site is currently ineligible for VCF support because it is not under appropriate conservation management.

Criterion	Eligibility
A _I	NH1 - Hoang Lien Mountains
A _{II}	VN057 - Fan Si Pan
B _I	Proposed Special-use Forest
B _{II}	Nature reserve
B _{III}	Under provincial management
C _I	
C _{II}	

Hoang Lien Son-Lai Chau Proposed Nature Reserve

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

Anon. (2000) [Investment plan for Hoang Lien Son Nature Reserve, Lai Chau province]. Hanoi: North-western Sub-FIPI. In Vietnamese.

Tordoff, A. W. ed. (2002) Directory of important bird areas in Vietnam: key sites for conservation. Hanoi: BirdLife International in Indochina and the Institute of Ecology and Biological Resources.

Muong Nhe Nature Reserve

Alternative site name(s)

Muong Nhe-Muong Cha, Muong Te

Province(s)

Lai Chau

Area

182,000 ha

Coordinates

21°50' - 22°35'N, 102°10' - 102°58'E

Agro-ecological zone

North-western

Decreed by government

Yes

Management board established

No

Investment plan prepared

Yes

VCF eligibility criteria met

B

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

The first attempt to establish a protected area at Muong Nhe was made on 8 July 1976, when Decision No. 6/QD-TKNN of Lai Chau Provincial People's Committee decreed the establishment of a wildlife reserve at the site (Anon. 1993). Subsequently, Muong Nhe was included on Decision No. 194/CT of the Chairman of the Council of Ministers, dated 9 August 1986, which decreed the establishment of a 182,000 ha nature reserve (MARD 1997).

In 1991, a field survey of Muong Nhe Nature Reserve was conducted by WWF and the former Ministry of Forestry. This field survey led to the preparation of a feasibility study, which proposed establishing a nature reserve of around 300,000 ha (Cox *et al.* 1992). In 1993, FIPI prepared an investment plan for Muong Nhe Nature Reserve. This investment plan gave the area of the nature reserve as 396,176 ha, comprising a strict protection area of 109,625 ha, a forest rehabilitation area of 268,566 ha and an agriculture and residential area of 17,985 ha (Anon. 1993). On 24 June 1993, this investment plan was approved by Lai Chau Provincial People's Committee, who then submitted the investment plan to the former National Planning Committee and the former Ministry of Forestry for approval. However, because of large demographic changes in the Muong Nhe area, the investment plan was not approved at the

ministerial level. Instead, the former Ministry of Forestry and the Ministry of Planning and Investment requested the provincial people's committee to prepare a revised investment plan. Consequently, a second investment plan was prepared in 1996, which recommended establishing a 310,216 ha nature reserve, comprising a strict protection area of 173,025 ha and a forest rehabilitation area of 137,191 ha (Anon. 1996).

The second investment plan was approved by Lai Chau Provincial People's Committee, by Official Letter No. 8/TT/UB, dated 18 December 1996, and by MARD, by Official Letter No. 1262/NN-KHTD, dated 19 April 1997 (Anon. 1999). Despite the approval of the investment plan by MARD, the release of funds was not approved by the Ministry of Planning and Investment (Le Trong Trai verbally 2000). Because the funds requested by the second investment plan were not released, Lai Chau Provincial FPD prepared a third investment plan, based upon the second one, which gave the area of the nature reserve as 172,480 ha (Anon. 1999). However, this investment plan has not been approved at any level (Nguyen Duc Tu verbally 2000).

A management board for Muong Nhe Nature Reserve has not been established, and all forest land within the proposed boundary of Muong Nhe Nature Reserve is currently under the management of Muong Lay and Muong Te District FPDs. Over the 1990s, there were major demographic changes in and around

the nature reserve, including the settlement of large numbers of migrants, with the result that forest cover decreased and remaining forest areas became severely fragmented. During their review of Vietnam's Special-use Forests system, BirdLife International and FIPI calculated that establishment of Muong Nhe Nature Reserve with an area of 314,000 ha would result in the inclusion of over 250,000 ha of agricultural land, scrub and non-natural grassland within the national Special-use Forests system. Consequently, they recommended seeking ways to reduce the area of non-forest through redefinition of the nature reserve's boundary (Wege *et al.* 1999).

In response to this recommendation, BirdLife and FIPI conducted a rapid field survey of Muong Nhe in November 2000. Based on the results of this rapid field survey, the two organisations recommended a significant reduction in the area of the nature reserve (Nguyen Duc Tu *et al.* 2001). Nevertheless, Muong Nhe is included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD, as a 182,000 ha nature reserve (FPD 2003); this list has not yet been approved by the government.

Topography and hydrology

Muong Nhe Nature Reserve is located in Muong Te and Muong Lay districts in the extreme north-west of Vietnam. The nature reserve is bounded by the international border with Laos in the west and the international border with China. The topography of Muong Nhe Nature Reserve is dominated by medium-high mountains. The average height of these mountains is around 1,200 m but there are several peaks above 1,800 m, and the highest point, Mount Phu Nam Man, reaches 2,124 m.

Biodiversity values

According to the third investment plan, Muong Nhe Nature Reserve supports only 47,400 ha of forest, equivalent to 15% of the total area of the nature reserve. This figure comprises 9,920 ha of lowland evergreen forest (distributed at elevations below 800 m), 19,850 ha of lower montane evergreen forest (distributed at elevations between 800 and 1,800 m), 1,705 ha of upper montane evergreen forest (distributed at elevations above 1,800 m) and

15,925 ha of bamboo forest. The remaining area of the nature reserve comprises 204,201 ha of grassland, and 43,980 ha of shifting cultivation and scrub (Anon. 1999). The dominant vegetation type at Muong Nhe Nature Reserve is, therefore, grassland, which accounts for 66% of the total area. This vegetation type is dominated by *Imperata cylindrica*, *Themeda gigantea*, *Thysanolaena maxima*, *Saccharum spontaneum* and *Erianthus arundinaceus* (Nguyen Duc Tu *et al.* 2001).

Before the 1990s, Muong Nhe was considered to be an important area for the conservation of large mammals. For instance, Cox *et al.* (1992) estimated that there were more than 200 Asian Elephant *Elephas maximus* at Muong Nhe in the early 1970s. However, following the border war with China in 1979, automatic weapons became more widely available in the area, and the population sizes of most large mammal species declined. By the time of the WWF/Ministry of Forestry survey in 1991, large mammals were already scarce at Muong Nhe: Tiger *Panthera tigris* was described as "rare", Gaur *Bos gaurus* was described as "possibly facing extinction" and Asian Elephant was described as "almost extinct" (Cox *et al.* 1992).

Based on the results of the BirdLife/FIPI rapid field survey, there is no evidence for the continued occurrence of Asian Elephant at Muong Nhe, while other large mammals only survive in small, isolated groups, as a result of habitat fragmentation and hunting pressure.

In addition, the BirdLife/FIPI team received reports from local people that indicate that White-cheeked Crested Gibbon *Hylobates leucogenys* may still occur at the nature reserve (Nguyen Duc Tu *et al.* 2001).

The feasibility study prepared by WWF and the former Ministry of Forestry contains a provisional list of 222 bird species (Cox *et al.* 1992), while the first and second investment plans report that 270 bird species occur at Muong Nhe Nature Reserve (Anon. 1993, 1996). However, as it is unclear whether these data were collected by field survey, compiled from past reports or predicted based on known distributions, few conclusions can be drawn from these figures. A more reliable source of information on the avifauna of Muong Nhe is the field survey conducted by Frontier-Vietnam in 1997. This field survey recorded 158 bird

species in the nature reserve and the area immediately to the south (Hill *et al.* 1997).

Conservation issues

To date, a management board for Muong Nhe Nature Reserve has not been established, the nature reserve boundary has not been clearly demarcated, and no conservation extension activities have been carried out. Almost none of the people who live inside the nature reserve are aware of the existence of the protected area, as a result of which violations of nature reserve regulations are widespread and regular (Nguyen Duc Tu *et al.* 2001).

The natural habitat at Muong Nhe Nature Reserve has been severely fragmented and reduced in area, principally as a result of shifting cultivation and associated fire. The remaining areas of natural habitat are under increasing human pressure, because of natural population growth and in-migration (Nguyen Duc Tu verbally 2000).

Because of the remoteness of the area, no commercial logging is taking place inside the nature reserve. However, all housing materials used by the inhabitants of the nature reserve come from the forest. Exploitation of these materials reportedly takes place without any control by the commune authorities or the FPD. Other forest products that are exploited by local people include fuelwood, rattans, bamboo shoots and honey. Grazing of livestock is an additional problem, as it impedes the natural process of forest regeneration (Nguyen Duc Tu verbally 2000).

One of the biggest threats to biodiversity at Muong Nhe Nature Reserve is hunting. Information from local people indicates that Asian Elephant had largely been eradicated from the area by 1990, and that, by 2000, Gaur and Tiger had met with the same fate. Although remnant populations of the latter two species are reported to survive, it is very unlikely that hunting activities will be curtailed rapidly enough to prevent their local extinction. Sambar *Cervus unicolor* is another species that has become increasingly rare, and the only ungulates which remain relatively common are Red Muntjac *Muntiacus muntjak* and Eurasian Wild Pig *Sus scrofa*. Almost all households in the nature reserve keep firearms, and many children possess crossbows for hunting small mammals and

birds. With the current high levels of in-migration, levels of hunting are unlikely to decrease in the near future (Nguyen Duc Tu *et al.* 2001).

Other documented values

Remaining forest areas in the nature reserve have an important role in protecting the water resources of local communities and the watershed of the Black River.

Related projects

The national 135 Programme is being implemented in the area. A number of infrastructure development projects are being funded under this programme, including the construction of schools, health centres and irrigation systems. However, the programme budget of only VND 400,000,000 (US\$29,000) per commune is too low in comparison with the infrastructure requirements of the area.

Between 2000 and 2009, a project entitled *Development of the Muong Cha Economic and Defense Zone in Lai Chau Province* is being implemented in Cha Nua, Cha Cang and Si Pha Phin communes, Muong Lay district, and Muong Nhe and Muong Toong communes, Muong Te district. This project is also focussing on infrastructure development, including the construction of a road from Muong Te town to Muong Nhe commune in the heart of the nature reserve, and another road linking Muong Toong and Muong Nhe communes. These roads are an important prerequisite for economic development in the area but are also likely to increase the human pressure on the natural resources of Muong Nhe Nature Reserve.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

Muong Nhe is ineligible for VCF support because it does not meet the criteria for supporting forest biodiversity of international importance. In addition, the site is not under appropriate conservation management.

Criterion	Eligibility
A _I	
A _{II}	
B _I	Decision No. 194/CT, dated 09/08/86
B _{II}	Nature Reserve
B _{III}	Under provincial management
C _I	
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

Anon. (1993) [Investment plan for Muong Nhe Nature Reserve, Lai Chau province]. Hanoi: Forest Inventory and Planning Institute. In Vietnamese.

Anon. (1996) [Investment plan for Muong Nhe Nature Reserve, Lai Chau province]. Hanoi: Forest Inventory and Planning Institute. In Vietnamese.

Anon. (1999) [Investment plan for Muong Nhe Nature Reserve, Lai Chau province]. Dien Bien Phu: Lai Chau Provincial People's Committee. In Vietnamese.

Cox, R. C., Vu Van Dung and Pham Mong Giao (1992) Report of a management feasibility study of the Muong Nhe Nature Reserve (November/December 1991). Hanoi: WWF and the Forest Inventory and Planning Institute.

Dillon, T. C. and Wikramanayake, E. D. (1997) Parks, peace and progress: a forum for transboundary conservation in Indochina. *Parks* 7(3): 36-51.

Dossche, V. and de Wulf, R. (1998) Comparative study of dendrological composition and structure of three nature reserves in Vietnam. Unpublished report to the Unit of Forest Management and Spatial Information Techniques, University of Ghent.

Hill, M. J. and Monastyrskii, A. L. (1998) Butterfly fauna of protected areas in north and central Vietnam collections 1994-1997. *Atalanta* 29: 185-208.

Hill, M., Hallam, D. and Bradley, J. (1997) [Muong Nhe Nature Reserve: biodiversity survey 1997]. London: Society for Environmental Exploration. In Vietnamese.

Hill, M., Hallam, D. and Bradley, J. (1997) Muong Nhe Nature Reserve: biodiversity survey 1997. London: Society for Environmental Exploration.

Horrocks, S. (1997) Flooding in the Bang Muoi commune. Unpublished report to Frontier-Vietnam.

Horrocks, S. (1997) Geology of the Bang Muoi commune. Unpublished report to Frontier-Vietnam.

Nguyen Duc Tu, Le Trong Trai and Le Van Cham (2001) A rapid field survey of Muong Nhe Nature Reserve, Lai Chau province, Vietnam. Hanoi: BirdLife International Vietnam Programme and the Forest Inventory and Planning Institute. In English and Vietnamese.

Muong Phang Cultural and Historical Site

Alternative site name(s)

None

Province(s)

Lai Chau

Area

1,000 ha

Coordinates

21°27'N, 103°09'E

Agro-ecological zone

North-western

Decreed by government

Yes

Management board established

No

Investment plan prepared

No

VCF eligibility criteria met

None

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Muong Phang was included on Decision No. 194/CT of the Chairman of the Council of Ministers, dated 9 August 1986, as a 1,000 ha cultural and historical site (MARD 1997). A Special-use Forest management board has never been established for the site (Lai Chau Provincial FPD *in litt.* 2003). However, in 1994, a six-person protection group was established with funding from Lai Chau Provincial Department of Culture and Information. The cultural and historical site is situated within Dien Bien Forest Enterprise, and covers around c.200 ha, of which c.150 ha is forested (Nguyen Duc Tu *in litt.* 2000).

Muong Phang is not included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD (FPD 2003).

Topography and hydrology

Muong Phang Cultural and Historical Site is situated in an area of low hills in the Muong Phang valley. The site is surrounded by a landscape of bare hills, human settlements and paddyfields. A small river runs through the site.

Biodiversity values

In the early part of the 20th century, the site supported good quality lower montane evergreen

forest. However, after 1954, a forest enterprise began logging operations in the area, with the result that, today, most of the forest has been cleared. Of the c.150 ha of forest at the site, only about 30 ha are in a good condition. Faunal diversity at the site is low, and only common species, such as squirrels, Red Muntjac *Muntiacus muntjak* and Red Junglefowl *Gallus gallus*, are reported to occur by the protection group (Nguyen Duc Tu *in litt.* 2000).

Conservation issues

The forest management regulations at Muong Phang Cultural and Historical Site prohibit timber extraction, firewood collection and livestock grazing. These regulations are enforced by the protection group (Nguyen Duc Tu *in litt.* 2000).

Other documented values

Muong Phang Cultural and Historical Site has historical, tourism and educational values. The site protects the base of General Vo Nguyen Giap, the commander-in-chief of the Viet Minh forces during the Dien Bien Phu campaign of 1954. The site is only 40 km from Dien Bien Phu town, and access by road is good. The landscape of Muong Phang is very beautiful, comprising a large lake, surrounded by forest. The site attracts both domestic and overseas visitors, and has high potential to attract increasing numbers of visitors in the future (Nguyen Duc Tu *in litt.* 2000).

Related projects

No information.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

Muong Phang is ineligible for VCF support because it does not meet the criteria for supporting forest biodiversity of international importance. In addition, Muong Phang is a cultural and historical site, and it is not under appropriate conservation management.

Criterion	Eligibility
A _I	
A _{II}	
B _I	Decision No. 194/CT, dated 09/08/86
B _{II}	
B _{III}	Under provincial management
C _I	
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

Vietnam News (2001) Fighting hard to give a heroic past its due. Vietnam News 6 May 2001.

Nam Don Nature Reserve

Alternative site name(s)

None

Province(s)

Son La

Area

18,000 ha

Coordinates

21°40'N, 103°07'E

Agro-ecological zone

North-western

Decreed by government

Yes

Management board established

No

Investment plan prepared

No

VCF eligibility criteria met

B

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Nam Don was included on Decision No. 194/CT of the Chairman of the Council of Ministers, dated 9 August 1986, as an 18,000 ha nature reserve (MARD 1997). The main objective of the nature reserve was the protection of a population of Gaur *Bos gaurus* that previously occurred in the area. However, during the period from 1986 to 1990, the species was eradicated from the area (Vu Van Dung verbally 2000). Consequently, Nam Don is not included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD (FPD 2003).

An investment plan has never been prepared for Nam Don Nature Reserve. Furthermore, as the exact location and boundary of the nature reserve have never been defined, it is not clear whether it should have been situated in Muong La district (which contains Nam Don commune) or Quynh Nhai district (as given in Decision No. 194/CT).

Topography and hydrology

Nam Don Nature Reserve is situated on the south-western flank of a mountain range that runs parallel to the main chain of the Hoang Lien mountains, and forms the boundary between Son La and Lao Cai provinces. The nature reserve is situated in the catchment of the Black River.

Biodiversity values

The natural forest at Nam Don Nature Reserve was almost completely destroyed during the 1990s as a result of the activities of local people. The site currently has few or no biodiversity values (Le Trong Trai verbally 2000).

Conservation issues

No information.

Other documented values

No information.

Related projects

No information.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

The site is ineligible for VCF support because it does not meet the criteria for supporting forest biodiversity of international importance. In addition, the site is not under appropriate conservation management.

Criterion	Eligibility
A _I	
A _{II}	
B _I	Decision No. 194/CT, dated 09/08/86
B _{II}	Nature Reserve
B _{III}	Under provincial management
C _I	
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

None.

Ngoc Son Proposed Nature Reserve

Alternative site name(s)

Ngoc Son-Tu Do

Province(s)

Hoa Binh

Area

10,000 ha

Coordinates

20°31' - 20°30'N, 105°15' - 105°29'E

Agro-ecological zone

North-western

Decreed by government

No

Management board established

No

Investment plan prepared

No

VCF eligibility criteria met

A, B

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Ngoc Son is not included on any government decision regarding the national Special-use Forests network, nor is it included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD (MARD 1997, FPD 2003). However, a proposal to establish a 10,000 ha nature reserve at Ngoc Son was made by Hoa Binh Provincial People's Committee in 1996 (MARD 1997). Although, to date, an investment plan has not been prepared and a management board has not been established, an investment plan for the site will be prepared as part of the on-going *Pu Luong-Cuc Phuong Limestone Landscape Conservation Project*.

Topography and hydrology

Ngoc Son proposed nature reserve is situated in Ngoc Son and Tu Do communes, Lac Son district, Hoa Binh province. The proposed nature reserve lies on the north-eastern flank of the limestone range that extends in a north-westerly direction from Cuc Phuong National Park to Son La province. The geology of the proposed nature reserve is characterised by limestone karst, and the topography is steep and rugged. Within the karst, there are a few flat-bottomed valleys, which run from north-west to south-east.

The precise boundaries of Ngoc Son proposed nature reserve have yet to be defined. However,

elevations in the area range from under 100 to 1,065 m, and the average elevation of the top of the limestone karst is about 600 m. The hydrology of the area is complex. The area is drained by a tributary of the Buoi river, which feeds the Ma river, which, in turn, reaches the sea near Thanh Hoa city.

Biodiversity values

In the absence of detailed biological surveys of the site, little information exists about the biodiversity values of Ngoc Son. Satellite data from 1995 indicate that the proposed nature reserve is still largely covered by limestone forest, presumably due to the inaccessibility of the area and the unsuitability of the limestone karst for agriculture. It would appear, however, that the flat valley bottoms have been settled by people, and that forest in these areas has been cleared for cultivation.

Given the proximity of Ngoc Son proposed nature reserve to Cuc Phuong National Park and Pu Luong proposed nature reserve, it can be expected that the flora and fauna of Ngoc Son will have strong similarities with those of the other two sites.

Ngoc Son is known to support the globally critically endangered and endemic primate, Delacour's Leaf Monkey *Trachypithecus delacouri* (Luong Van Hao 1999). This species has also been recorded in several contiguous areas of similar habitat: Pu Luong proposed nature reserve to the west (Baker 1999), Ba

Ngoc Son Proposed Nature Reserve

Thuoc district to the south (Ngo Van Tri 1999) and Cuc Phuong National Park to the south-east (Ratajszczak 1988). The population at Ngoc Son, may, therefore, be of high significance for landscape-level initiatives to conserve this species.

Ngoc Son is an important link in a chain of near-contiguous decreed and proposed protected areas, which stretches from Cuc Phuong National Park to the Laotian border. Providing that intervening areas of forest can be protected, and habitat corridors re-established in areas where forest has been cleared, the area has the potential to be one of the most intact natural landscapes in Vietnam.

Conservation issues

Hoa Binh Provincial FPD (*in litt.* 2000) consider timber extraction and collection of non-timber forest products to be the main threats to biodiversity within the proposed nature reserve. In the buffer zone, they identify clearance of forest for shifting cultivation and forest fire as additional threats. At least some of the timber extracted from the proposed nature reserve is used locally for house construction. Quarrying of limestone is another threat to biodiversity at Ngoc Son (O. Maxwell *in litt.* 2000).

Other documented values

No information.

Related projects

In collaboration with government partners, the FFI Vietnam Programme is currently implementing a medium-sized World Bank/GEF project entitled the *Pu Luong-Cuc Phuong Limestone Landscape Conservation Project*. The objectives of this project are to protect the Pu Luong-Cuc Phuong limestone range and its wildlife through the establishment of a new protected area, strengthening the existing protected areas system and building the capacity of relevant stakeholders; to improve the conservation status of Delacour's Leaf Monkey; and to generate public support for karst conservation. Ngoc Son is a geographical focus of this project, which will be implemented for three years from 2002.

A series of complementary activities to the medium-sized World Bank/GEF project are currently being implemented in the Ngoc Son area under the Spanish Agency for International Cooperation-funded *Pu Luong-Cuc Phuong Community Management and Eco-tourism Development Project*, currently being implemented by FUNDESO, in partnership with FFI and FPD. The objectives of this project are to reduce poverty and contribute to socio-economic development compatible with forest and biodiversity conservation in selected communes of the Ngoc Son area. The project is being implemented for two years from 2002.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

Ngoc Son is currently ineligible for VCF support because it is not under appropriate conservation management.

Criterion	Eligibility
A _I	NA1 - Northern Indochina Limestone
A _{II}	
B _I	Proposed Special-use Forest
B _{II}	Nature Reserve
B _{III}	Under provincial management
C _I	
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

Baker, L. R. (1999) Survey of the Delacour's Langur for the Frankfurt Zoological Society and the Endangered Primate Rescue Centre. Unpublished report to the Frankfurt Zoological Society and the Endangered Primate Rescue Centre.

Luong Van Hao (1999) [Survey of the distribution of Delacour's Langur in Hoa Binh province, June 1999]. Unpublished report to the Endangered Primate Rescue Centre. In Vietnamese.

Ngo Van Tri (1999) Preliminary assessment on the mammal in Tuong limestone mountain complex, Ba Thuoc district, Thanh Hoa province. Unpublished report to Fauna and Flora International-Indochina Programme.

Ratajszczak, R. (1988) Notes on the current status and conservation of primates in Vietnam. *Primate Conservation* 9: 134-136.

Pa Co-Hang Kia Nature Reserve

Alternative site name(s)

Hang Kia-Pa Co

Province(s)

Hoa Binh

Area

7,091 ha

Coordinates

20°41' - 20°46'N, 104°51' - 105°01'E

Agro-ecological zone

North-western

Decreed by government

Yes

Management board established

Yes

Investment plan prepared

Yes

VCF eligibility criteria met

B, C

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Pa Co-Hang Kia Nature Reserve is located in Pa Co, Hang Kia, Tan Son, Bao La, Cun Pheo and Pieng Ve communes, Mai Chau district, Hoa Binh province (Hoa Binh Provincial FPD in litt. 2000). Pa Co-Hang Kia was included on Decision No. 194/CT of the Chairman of the Council of Ministers, dated 9 August 1986 (MARD 1997), which decreed the establishment of a 1,000 ha nature reserve for the conservation of "limestone karst forest, gymnosperm species [and] rare wildlife" (Cao Van Sung 1995). An investment plan for the site was prepared by FIPI in September 1993, and was subsequently approved by the then Ministry of Forestry. The area of the nature reserve stated in the investment plan is 7,091 ha, comprising a strict protection area of 2,681 ha and a forest rehabilitation area of 4,410 ha (Duong Coi 1993).

A management board was established for Pa Co-Hang Kia Nature Reserve on 23 May 2000, following Decision No. 453/QD-UB of Hoa Binh Provincial People's Committee. The management board currently has 15 members of staff based at two guard stations (Nguyen Manh Dan, Director of Pa Co-Hang Kia Nature Reserve in litt. 2003).

Pa Co-Hang Kia is included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD, as a 7,091 nature reserve (FPD

2003); this list has not yet been approved by the government. The nature reserve is currently under the management of Hoa Binh Provincial FPD (Nguyen Manh Dan, Director of Pa Co-Hang Kia Nature Reserve in litt. 2003).

Topography and hydrology

Pa Co-Hang Kia Nature Reserve is located in the extreme west of Hoa Binh province, on the border with Son La province. The site lies in the limestone range that extends south-east from the Son La plateau to Cuc Phuong National Park. The main physical feature within Pa Co-Hang Kia is a high ridge, which reaches 1,536 m in the north-west of the nature reserve, and gradually decreases in altitude to the east. Most of the nature reserve lies above 500 m.

The geology of the site is characterised by limestone, which is partly of a non-karst nature, and has been eroded into a series of rugged, steep-sided hills between some flatter valleys. There are flat valley bottoms in the north of the nature reserve, in which are located a number of human settlements. Surface water is seasonal in the nature reserve, even in the populated valleys. Water sources dry up during the dry season, and rains are quickly absorbed into underground systems.

Pa Co-Hang Kia Nature Reserve

Biodiversity values

Tran Le Hung *et al.* (1994) report that “there are still hundreds of hectares of primary forest in the inaccessible limestone karst as well as on the high mountain peaks”. However, most of the forest in the nature reserve is restricted to ridges and hill tops, while valley bottoms have been cleared for wet rice cultivation and lower slopes for shifting cultivation of maize and cassava (A. Tordoff pers. obs.).

Three orchid species thought to be new to science were recently discovered at the site, and the site may be of importance for the conservation of a number of other plant species of conservation concern. However, because the remaining forest at the site is heavily disturbed and fragmented, and continues to be degraded as a result of human activities, it is unlikely that Pa Co-Hang Kia is of high importance for the conservation of bird and mammal species.

Conservation issues

Pa Co-Hang Kia is home to the only Hmong communities in Hoa Binh province (Tran Le Hung *et al.* 1994). Also, the south of the nature reserve is inhabited by members of the Thai ethnic group. The clearance of land for agriculture has led to the loss of much of the natural vegetation in the nature reserve.

Other documented values

Hang Kia cave, in Hang Kia commune, and the Hmong ethnic minority market in Pa Co commune receive small numbers of domestic and foreign tourists from Mai Chau village to the east (A. Tordoff pers. obs.). The forest provides numerous products for local residents, who “believe that their life cannot be separated from the forest” (Tran Le Hung *et al.* 1994).

Related projects

The Netherlands Local Environment Fund, administered by SNV, has provided a small grant to the management board of Pa Co-Hang Kia Nature Reserve for capacity building activities. These activities will continue until November 2004.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

The site is ineligible for VCF support because it does not meet the criteria for supporting forest biodiversity of international importance.

Criterion	Eligibility
A _I	
A _{II}	
B _I	Decision No. 194/CT, dated 09/08/86
B _{II}	Nature reserve
B _{III}	Under provincial management
C _I	Management board established
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

Duong Coi (1993) [Investment plan for Hang Kia-Pa Co Nature Reserve, Mai Chau district, Hoa Binh province]. Hoa Binh: Hoa Binh Provincial People's Committee. In Vietnamese.

Tran Le Huy, Nguyen Van Lan, Nguyen Tuong Van, Pham Quang Thu and Dao Huong Lan (1994) Natural resources and socio-economy of Pa Co and Hang Kia communes in Mai Chau district, Hoa Binh

Pa Co-Hang Kia Nature Reserve

province. Unpublished report to the Renovation of
Strategies for Forestry Development Project.

Phu Canh Proposed Nature Reserve

Alternative site name(s)

None

Province(s)

Hoa Binh

Area

14,461 ha

Coordinates

20°52' - 20°58'N, 104°59' - 105°04'E

Agro-ecological zone

North-western

Decreed by government

No

Management board established

Yes

Investment plan prepared

Yes

VCF eligibility criteria met

B, C

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Phu Canh is not included on any government decision regarding the Special-use Forest system. However, the establishment of a 14,461 ha nature reserve at the site was approved in 1995, by Decision No. 254/UB-ND of Hoa Binh Provincial People's Committee (MARD 1997, FPD 1998). An investment plan was prepared for Phu Canh in 2003, and subsequently approved by Hoa Binh Provincial People's Committee (Hoa Binh Provincial FPD *in litt.* 2003). Phu Canh has a management board with 16 members of staff, based at three guard stations, and under the management of Hoa Binh Provincial FPD (Hoa Binh Provincial FPD *in litt.* 2003).

Phu Canh is included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD, as a 14,461 ha nature reserve (FPD 2003); this list has not yet been approved by the government. According to Hoa Binh Provincial FPD (*in litt.* 2003), however, the total area of the site is 5,647 ha, in addition to which there is a buffer zone of 3,212 ha.

Topography and hydrology

Phu Canh proposed nature reserve is located in Doan Ket, Tan Pheo, Dong Chum and Dong Ruong communes, Da Bac district. The proposed nature reserve is centred on Mount Phu Canh, a 1,430 m

mountain to the north of the Black River. The proposed nature reserve is drained by tributaries of this river.

Biodiversity values

Remote sensing data indicate that Phu Canh proposed nature reserve supports a significant area of lower montane evergreen forest. However, there is no further information available about the biodiversity value of the site.

Conservation issues

According to Hoa Binh Provincial FPD (*in litt.* 2000), the major threats to biodiversity at the site are clearance of forest for agriculture, illegal logging, over-exploitation of non-timber products (including medicinal plants and rattan) and forest fire.

Other documented values

No information.

Related projects

No information.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

Phu Canh is ineligible for VCF support because it does not meet the criteria for supporting forest biodiversity of international importance.

Criterion	Eligibility
A _I	
A _{II}	
B _I	Proposed Special-use Forest
B _{II}	Nature reserve
B _{III}	Under provincial management
C _I	Management board established
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

None.

Sop Cop Nature Reserve

Alternative site name(s)

Sop Cop-Song Ma

Province(s)

Son La

Area

27,886 ha

Coordinates

20°56' - 21°07'N, 103°29' - 103°42'E

Agro-ecological zone

North-western

Decreed by government

Yes

Management board established

Yes

Investment plan prepared

Yes

VCF eligibility criteria met

B, C

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Sop Cop was included on Decision No. 194/CT of the Chairman of the Council of Ministers, dated 9 August 1986, which proposed establishing a 5,000 ha nature reserve (MARD 1997). In 1993, an investment plan was prepared by Son La Provincial FPD. Subsequently, this investment plan was approved by the provincial people's committee (Son La Provincial FPD *in litt.* 2000). A nature reserve management board was established in 2002, following Decision No. 3440 of Son La Provincial People's Committee (Son La Provincial FPD *in litt.* 2003). The management board currently has 22 members of staff, based at five guard stations, and is under the management of Son La Provincial FPD (*in litt.* 2003).

According to Son La Provincial FPD (*in litt.* 2000), the total area of Sop Cop Nature Reserve is 27,886 ha, comprising a strict protection area of 12,784 ha and a forest rehabilitation area of 15,102 ha. In addition, there is a buffer zone of 26,578 ha (Son La Provincial FPD *in litt.* 2003).

Sop Cop is included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD, as a 27,886 ha (FPD 2003); this list has not yet been approved by the government.

Topography and hydrology

Sop Cop Nature Reserve is located in Song Ma district in the mountainous north-west of Vietnam. The topography of the nature reserve is steep and mountainous, and elevations range from c.450 to 1,940 m. The nature reserve is drained by tributaries of the Ma river.

Biodiversity values

Remote sensing data indicate that the natural vegetation at Sop Cop Nature Reserve has been extensively cleared and replaced by scrub. However, it appears that areas of evergreen forest still remain at high elevations.

The fauna of Sop Cop Nature Reserve was previously very rich, and the site supported a high diversity and abundance of large mammal species, including, in the 1950s, a species of rhinoceros. However, faunal diversity at the site has decreased in recent years as a result of poor management (Cao Van Sung and Nguyen Xuan Dang 1995). For instance, while, in 1975, the site was reported to support about 77 Asian Elephants *Elephas maximus*, this figure had declined to 17 by 1986 and only three by 1997. A similar decline has been reported for Gaur *Bos gaurus* at the site (Duckworth and Hedges 1998).

Conservation issues

The main threats to biodiversity at Sop Cop Nature Reserve are habitat loss, hunting and timber extraction. Hunting is a particular threat to animal populations. For example, during the first six months of 1992, it was estimated that about one tonne of wild animals (mainly turtles and porcupines) were hunted by residents of Dom Cang village, which lies just outside of the nature reserve (Cao Van Sung and Nguyen Xuan Dang 1995).

Other documented values

Forest at Sop Cop Nature Reserve protects the catchments of streams that provide local communities with water for irrigation and domestic use.

Related projects

No information.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

The site is ineligible for VCF support because it does not meet the criteria for supporting forest biodiversity of international importance.

Criterion	Eligibility
A _I	
A _{II}	
B _I	Decision No. 194/CT, dated 09/08/86
B _{II}	Nature Reserve
B _{III}	Under provincial management
C _I	Management board established
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

Anon. (undated) [List of animal species recorded at Sop Cop Nature Reserve]. Unpublished list of mammals, birds, reptiles and amphibians. In Vietnamese.

Cao Van Sung and Nguyen Xuan Dang (1995) The wildlife fauna in Sop Cop Nature Reserve (Son La province) and measures for conservation and restoration. Pp 479-485 in: Dang Huy Huynh, Nguyen Tien Ban, Vu Quang Con, Nguyen Thi Le, Pham Van Luc, Tran Dinh Ly, La Dinh Moi and Cao Van Sung eds. [Results of research by IEBR] Hanoi: Institute of Ecology and Biological Resources. In Vietnamese.

Duckworth, J. W. and Hedges, S. (1998) Tracking tigers: a review of the status of Tiger, Asian Elephant, Gaur and Banteng in Vietnam, Lao, Cambodia and Yunnan province (China) with recommendations for future conservation action. Hanoi: WWF Indochina Programme.

Ta Sua Proposed Nature Reserve

Alternative site name(s)

None

Province(s)

Son La

Area

17,650 ha

Coordinates

21°41' - 21°25'N, 104°26' - 104°36'E

Agro-ecological zone

North-western

Decreed by government

No

Management board established

Yes

Investment plan prepared

Yes

VCF eligibility criteria met

A, B, C

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

There is very little information available about Ta Sua. The site is not included on any government decision regarding the Special-use Forests system (MARD 1997), nor is it included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD (FPD 2003). According to MARD (1997), however, a proposal to establish a nature reserve at the site was made in 1995, presumably by Son La Provincial People's Committee.

In 2002, a nature reserve management board was established, following Decision No. 3440/UB-QD of Son La Provincial People's Committee. The management board currently has 20 members of staff, based at four guard stations, and is under the management of Son La Provincial FPD (*in litt.* 2003). According to Son La Provincial FPD (*in litt.* 2003), the total area of the nature reserve is 17,650 ha, and the area of the buffer zone is 24,762 ha.

Topography and hydrology

The topography of Ta Sua proposed nature reserve is dominated by a ridge of high mountains, which runs along the north of the site. This ridge is a southerly extension of the Hoang Lien mountains, and forms the border between Son La and Yen Bai provinces. There are many peaks above 2,000 m along this ridge, and

the highest point in the proposed nature reserve is a c.2,770 m summit in the north-west. Ta Sua proposed nature reserve is situated in the catchment of the Black River.

Biodiversity values

Remote sensing data indicate that, at elevations below 1,500 m, forest has been almost totally cleared. However, the proposed nature reserve still appears to support significant areas of upper montane evergreen forest at higher elevations. This forest type appears to contain patches of mixed coniferous and broadleaf evergreen forest.

During October and November 1999, Ta Sua proposed nature reserve was visited by a team from the Fauna & Flora International Indochina Programme. During this visit, the team received interview data that indicate that the site may support a remnant population of Black-cheeked Crested Gibbon *Hylobates concolor* (Ngo Van Tri and Long 1999). If this information was confirmed, Ta Sua would become one of only a handful of sites in Vietnam known to support a population of the western subspecies, *H. c. concolor*, of this globally endangered species.

Conservation issues

No information.

Ta Sua Proposed Nature Reserve

Other documented values

The forest at high elevations at Ta Sua proposed nature reserve has an important role in protecting the water resources of local communities.

Related projects

No information.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

The site is eligible for VCF support because it meets criteria A, B and C.

Criterion	Eligibility
A _I	NH1 - Hoang Lien Mountains
A _{II}	
B _I	Proposed Special-use Forest
B _{II}	Nature reserve
B _{III}	Under provincial management
C _I	Management board established
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

Ngo Van Tri and Long, B. (1999) A report of a survey on Black Gibbon *Hylobates concolor concolor* in Son La province (north Vietnam) October-November, 1999. Unpublished report to Fauna and Flora International-Indochina Programme.

Thuong Tien Nature Reserve

Alternative site name(s)

None

Province(s)

Hoa Binh

Area

7,308 ha

Coordinates

20°36' - 20°41'N, 105°24' - 105°29'E

Agro-ecological zone

North-western

Decreed by government

Yes

Management board established

Yes

Investment plan prepared

Yes

VCF eligibility criteria met

B, C

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Thuong Tien was included on Decision No. 194/CT of the Chairman of the Council of Ministers, dated 9 August 1986, which decreed the establishment of a 1,500 ha nature reserve (MARD 1997). An investment plan was prepared for Thuong Tien Nature Reserve in 1995. This investment plan was approved by Hoa Binh Provincial People's Committee and the former Ministry of Forestry (Hoa Binh Provincial FPD *in litt.* 2000). Subsequently, a nature reserve management board was established, following Decision No. 1242/QD-UB of Hoa Binh Provincial People's Committee, dated 9 October 2000. The management board currently has 12 members of staff, based at a single guard station (Nguyen Hong Quan, Vice-director of Thuong Tien Nature Reserve *in litt.* 2003).

Thuong Tien is included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD, as a 7,308 ha nature reserve (FPD 2003); this list has not yet been approved by the government. The nature reserve is currently managed by the provincial people's committee (Nguyen Hong Quan, Vice-director of Thuong Tien Nature Reserve *in litt.* 2003).

Topography and hydrology

Thuong Tien Nature Reserve is located in Thuong Tien commune, Kim Boi district. The topography of the nature reserve is characterised by medium-high mountains, which reach elevations of over 1,000 m. Most of the nature reserve is drained by tributaries of the Boi river, which flows south-east to join the Day river.

Biodiversity values

Remote sensing data indicate that Thuong Tien Nature Reserve supports a significant area of lower montane evergreen forest. However, there is no further information available about the biodiversity value of the site.

Conservation issues

The buffer zone of Thuong Tien Nature Reserve covers 4,308 ha. A total of 8,149 people live inside the buffer zone, and a further 2,416 live inside the nature reserve itself (Nguyen Hong Quan, Vice-director of Thuong Tien Nature Reserve *in litt.* 2003). The inhabitants of the nature reserve and buffer zone belong to the Kinh and Muong ethnic groups, and practice both wet rice and shifting cultivation. According to Hoa Binh Provincial FPD (*in litt.* 2000),

Thuong Tien Nature Reserve

the major threats to biodiversity at Thuong Tien Nature Reserve are illegal timber extraction, hunting of birds and mammals, and clearance of forest for agriculture (Hoa Binh Provincial FPD *in litt.* 2000).

Other documented values

No information.

Related projects

In 1997 and 1999, field surveys were carried out at the site with the support of the WWF Indochina Programme (Hoa Binh Provincial FPD *in litt.* 2000).

During the period from 1995 to 1999, all forest protection activities at the nature reserve were funded by the national 327 Programme. Since 1999, this programme has been replaced by the national 661 Programme as the major source of investment funding for the nature reserve (Hoa Binh Provincial FPD *in litt.* 2000).

Between 2000 and 2004, the nature reserve management board is implementing a project to establish a botanical garden at the site, with funding from the government of Vietnam (Hoa Binh Provincial FPD *in litt.* 2000).

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

The site is ineligible for VCF support because it does not meet the criteria for supporting forest biodiversity of international importance.

Criterion	Eligibility
A _I	
A _{II}	
B _I	Decision No. 194/CT, dated 09/08/86
B _{II}	Nature reserve
B _{III}	Under provincial management
C _I	Management board established
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

None.

Xuan Nha Nature Reserve

Alternative site name(s)

None

Province(s)

None

Area

38,069 ha

Coordinates

20°36' - 20°48'N, 104°29' - 104°50'E

Agro-ecological zone

North-western

Decreed by government

Yes

Management board established

Yes

Investment plan prepared

Yes

VCF eligibility criteria met

A, B, C

Social screening criteria met

None

Conservation needs assessment prepared

No

Operational management plan prepared

No

Tracking tool completed

No

Map available

Yes

Management history

Xuan Nha was included on Decision No. 194/CT of the Chairman of the Council of Ministers, dated 9 August 1986, as a 60,000 ha nature reserve (MARD 1997). In 1991, an investment plan was prepared, which proposed establishing a 38,069 ha nature reserve, comprising a strict protection area of 15,489 ha and a forest rehabilitation area of 22,580 ha (Anon. 1991). This investment plan was approved by the former Ministry of Forestry (FPD 1998). In 2002, a nature reserve management board was established for Xuan Nha, following Decision No. 3440 of Son La Provincial People's Committee. The management board currently has 26 members of staff, based at six guard stations, and is under the management of Son La Provincial FPD (*in litt.* 2003).

Xuan Nha is included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD, as a 38,069 ha nature reserve (FPD 2003); this list has not yet been approved by the government.

Topography and hydrology

Xuan Nha Nature Reserve lies in Moc Chau district in the south-west of Son La province. To the south and east the nature reserve is bordered by Hoa Binh and Thanh Hoa provinces, while, to the west, it is bordered

by Laos. The highest point in the nature reserve, Mount Pha Luong at 1,970 m, lies on the mountain ridge that forms the international border with Laos. The topography of the nature reserve is composed of two wide, shallow-sided valleys, which run eastward across the nature reserve from the Laotian border. The northern valley is formed by the Nha stream, while the southern valley is formed by the Nam Can stream. These two streams meet in the extreme south-east of the nature reserve, from where they flow south to join the Ma river.

Biodiversity values

According to the investment plan (Anon. 1991), Xuan Nha Nature Reserve supports 22,172 ha of natural forest. This is mostly evergreen forest but it includes 2,626 ha of limestone forest.

The investment plan (Anon. 1991, Vu Quang Manh 1991) states that 456 species of plant occur at Xuan Nha Nature Reserve, including the globally threatened *Madhuca pasquieri*. In addition, the investment plan states that 160 mammal, 48 bird, 44 reptile and 19 amphibian species occur at the nature reserve, including several globally threatened species. However, the source of the faunal and floral data presented in the investment plan is not clear, and further studies are required to assess the biodiversity values of the site.

Conservation issues

The investment plan (Anon. 1991) notes in-migration to be a major threat to biodiversity at the nature reserve. The majority of in-migrants are believed to be members of the Hmong ethnic group, who have cleared forest for agriculture. The investment plan includes an estimate that from 100 to 200 ha of forest are lost in this manner each year. Hunting is also considered to be a big problem at the nature reserve.

The investment plan (Anon. 1991) mentions two forest enterprises operating in and around Xuan Nha Nature Reserve. Chieng Ve Forest Enterprise was established in October 1969. At the time the investment plan was written, this forest enterprise was allocating land inside the nature reserve to local people for tea production. Moc Chau 4 Forest Enterprise was established in 1987, with the principal objective of supplying timber from the construction of the Hoa Binh dam. At the time the investment plan was written, this forest enterprise was continuing to extract *Fokienia hodginsii* timber from within the nature reserve. The current activities of these forest enterprises are not known.

Other documented values

Forest inside the nature reserve has economic importance for local people as a source of timber and other forest products. The nature reserve protects part of the watershed of the Ma river, one of the main sources of water for domestic use and irrigation for households in Thanh Hoa province.

Related projects

No information.

Conservation needs assessment

A conservation needs assessment has not been conducted for the site.

Operational management plan

An operational management plan has not been prepared for the site.

Eligibility against VCF criteria

The site is eligible for VCF support because it meets criteria A, B and C.

Criterion	Eligibility
A _I	NA1 - Northern Indochina Limestone
A _{II}	
B _I	Decision No. 194/CT, dated 09/08/86
B _{II}	Nature Reserve
B _{III}	Under provincial management
C _I	Management board established
C _{II}	

Social screening requirements

A social screening report has not been prepared for the site.

Criterion	Eligibility
A	
B	
C	
D	

Literature sources

Anon. (1991) [Investment plan for Xuan Nha Nature Reserve, Son La province]. Son La: Son La Provincial Forest Protection Department. In Vietnamese.

Vu Quang Manh (1991) [Investment plan for Xuan Nha Nature Reserve, Moc Chau district, Son La province: technical annex - fauna]. Hanoi: Forest Inventory and Planning Institute. In Vietnamese.