

# Ngoc Linh (Kon Tum) Nature Reserve

## Alternative site name(s)

Ngoc Linh

## Province(s)

Kon Tum

## Area

41,424 ha

## Coordinates

15°00' - 15°18'N, 107°41' - 108°01'E

## Agro-ecological zone

Central Highlands

## 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

Ngoc Linh 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 20,000 ha nature reserve in the former Gia Lai-Kon Tum province (now Kon Tum and Gia Lai provinces) (MARD 1997). In 1993, Kon Tum province and the former Quang Nam-Da Nang province (now Quang Nam province and Da Nang city) requested the permission of the former Ministry of Forestry to jointly develop an investment plan for Ngoc Linh Nature Reserve. The Ministry of Forestry approved the draft framework of the investment plan that same year, while North-western Forest Inventory and Planning Sub-institute conducted a field survey of the site, collecting relevant data for the production of an investment plan. This investment plan was published in 1994, and proposed establishing a 51,053 ha nature reserve (Anon. 1994). However, because the proposed nature reserve was situated in two provinces, the investment plan was not approved at the ministerial level (Anon. 1998).

In 1998, an investment plan for a 41,420 ha nature reserve in Kon Tum province was prepared by the Forest Inventory and Planning Institute (FIPI) and BirdLife International (Anon. 1998). This investment plan was approved by Kon Tum Provincial People's Committee, by Official Letter No. 69/TT-UB dated 12 October 1998, and by MARD by Decision No.

559/BNN-KH dated on 9 February 1999 (Le Trong Trai verbally 2000). To date, an investment plan has not been prepared and a management board has not been established for the contiguous nature reserve in Quang Nam province (see Ngoc Linh (Quang Nam) site card).

A management board for Ngoc Linh (Kon Tum) Nature Reserve has been established, with 53 members of staff. The management board staff are based at the headquarters and seven guard stations, and are equipped with communications equipment, a car and 10 motorbikes (Kon Tum Provincial FPD *in litt.* 2000).

Ngoc Linh (Kon Tum) is included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD, as a 41,424 ha nature reserve (FPD 2003); this list has not yet been approved by the government.

## Topography and hydrology

Ngoc Linh (Kon Tum) Nature Reserve is located in Dac Glei and Dac To districts in the central Annamite mountains. The nature reserve contains a number of high, steep-sided mountains, such as Ngoc Tion (2,032 m), Ngoc Peukpee (1,728 m) and Ngoc Lum Heo (2,030 m) in the north of the nature reserve, and Ngoc Lepho (2,070 m) and Ngoc Pa (2,251 m) in the south-east. The highest peak in the nature reserve is Mount Ngoc Linh in the south-east, which attains an altitude of 2,598 m, and slopes steeply from the

summit down to 300 m in Dac My valley. Mount Ngoc Linh is the highest mountain in the central Annamites. In the south-west of the nature reserve, slopes are shallower, and altitudes range from 900 to 1,200 m (Le Trong Trai *et al.* 1999).

In general, river systems in Ngoc Linh (Kon Tum) Nature Reserve are narrow, high-energy, montane rivers. During the rainy season, rivers undergo pulse-flow events, resulting in sudden floods that can cause extensive erosion of riverbanks. Flood damage to low-lying areas is common, particularly to agricultural areas and irrigation projects. Groundwater run-off occurs at a high rate, as alluvial soils in the region are coarse grained, with a high proportion of sand, and very porous (Le Trong Trai *et al.* 1999).

The mountains of Ngoc Linh (Kon Tum) Nature Reserve comprise the upstream catchments of three main river systems: the Dac Mek, Dac Po Ko and Dac Plo rivers. The Dac Mek river flows north, into Quang Nam province, where it joins the Dac Se river, which flows into the East Sea at Da Nang city. The Dac Po Ko river, which flows south through Kon Tum province, is one of the most important water sources for the Ya Ly hydro-electric power station. The Dac Plo river, which flows west, into Laos, is part of the catchment of the Mekong River (Le Trong Trai *et al.* 1999).

## Biodiversity values

Eighty eight percent of the total area of Ngoc Linh (Kon Tum) Nature Reserve is covered by forest. The main forest types found at Ngoc Linh (Kon Tum) Nature Reserve are lower montane evergreen forest and upper montane evergreen forest (Le Trong Trai *et al.* 1999).

Upper montane evergreen forest occurs at elevations above 2,000 m. This forest type is largely undisturbed, and is dominated by species in the Lauraceae, Fagaceae, Theaceae, Araliaceae, Magnoliaceae and Aceraceae families. Dominant species include *Pentaphylax* spp., *Quercus* spp., *Lithocarpus* spp., *Castanopsis* spp., *Litsea verticillata*, *Symplocos cochinchinensis*, *Eurya japonica*, *Elaeocarpus* spp., *Exbucklandia tonkinensis*, *E. populnea*, and *Turpinia montana*. Also present are conifers, such as *Podocarpus imbricatus*, *P. neriifolius*,

*Pinus dalatensis* and *Dacrydium elatum* (Le Trong Trai *et al.* 1999).

Lower montane evergreen forest occurs at elevations between 1,000 and 2,000 m. This forest type is dominated by broadleaf evergreen tree species, typically members of the Fagaceae and Lauraceae families, such as *Lithocarpus* spp., *Quercus* spp. and *Cinnamomum* spp. The natural vegetation type below 1,000 m is lowland evergreen forest, although this has been extensively disturbed by logging and cleared by shifting cultivation, to a point where elevations below 1,000 m are now dominated by secondary vegetation types (Le Trong Trai *et al.* 1999).

Two field surveys conducted by BirdLife and FIPI in 1996 and 1998 recorded 878 vascular plant species at Ngoc Linh (Kon Tum) Nature Reserve, a number of which are globally threatened, including the conifers *Amentotaxus poilanei* and *Pinus dalatensis*. In addition, nine of the plant species recorded at Ngoc Linh (Kon Tum) are endemic to Vietnam (Le Trong Trai *et al.* 1999).

The BirdLife/FIPI surveys documented a total of 306 vertebrate species at Ngoc Linh (Kon Tum) Nature Reserve, comprising 52 species of mammal, 190 species of bird, 41 species of reptile and 23 species of amphibian. Identification of hunting trophies revealed the presence of two recently described mammal species: Large-antlered Muntjac *Muntiacus vuquangensis* and Annamite Muntjac *M. truongsongensis* (Le Trong Trai *et al.* 1999).

Of the 190 bird species recorded at Ngoc Linh (Kon Tum), six are globally threatened or near threatened (Le Trong Trai *et al.* 1999), including two that were first discovered at the nature reserve: Golden-winged Laughingthrush *Garrulax ngoclinhensis* (Eames *et al.* 1999a) and Black-crowned Barwing *Actinodura sodangorum* (Eames *et al.* 1999b). These were the first new bird species to be discovered in mainland South-East Asia for 30 years. Including the two newly described species, Ngoc Linh (Kon Tum) supports seven restricted-range bird species, and, therefore, qualifies for inclusion in the Kon Tum Plateau Endemic Bird Area (Le Trong Trai *et al.* 1999). In addition, the nature reserve includes parts of two Important Bird Areas: Ngoc Linh and Lo Xo Pass (Tordoff 2002).

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## Conservation issues

A buffer zone of 59,767 ha has been defined for Ngoc Linh (Kon Tum) Nature Reserve. A total of 13,876 people live in the buffer zone, most of whom belong to the Xe Dang, De and Trieng De ethnic groups. The main agricultural practices in the buffer zone are wet rice cultivation and swidden agriculture. The major threats to biodiversity at Ngoc Linh (Kon Tum) are perceived to be forest clearance for agriculture, hunting of forest animals, illegal exploitation of forest products and forest fire. There are also five state forest enterprises operating in the area. Although, only Rung Thong Forest Enterprise is still extracting timber, at a rate of 6,000 m<sup>3</sup> per year (Le Trong Trai *et al.* 1999).

## Other documented values

The forest at Ngoc Linh (Kon Tum) Nature Reserve performs an important role in upstream catchment protection for several of the large rivers in Quang Nam and Kon Tum provinces. These rivers supply irrigation water for thousands of hectares of agricultural land, and are the main source of water for domestic use for thousands of downstream households. In addition, forest at Ngoc Linh (Kon Tum) protects part of the watershed of the Ya Ly hydro-electric power station (Le Trong Trai *et al.* 1999).

## 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

Ngoc Linh (Kon Tum) is eligible for VCF support because it meets criteria A, B and C.

Criterion	Eligibility
A <sub>I</sub>	CA1 - Central Annamites
A <sub>II</sub>	VN043 - Ngoc Linh; VN046 - Lo Xo
B <sub>I</sub>	Decision No. 194/CT, dated 09/08/86
B <sub>II</sub>	Nature Reserve
B <sub>III</sub>	Under provincial management
C <sub>I</sub>	Management board established
C <sub>II</sub>	

## Social screening requirements

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

Criterion	Eligibility
A	
B	
C	
D	

## Literature sources

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