Cuc Phuong National Park

Alternative site name(s)
None
Province(s)
Ninh Binh, Hoa Binh and Thanh Hoa
Status
Decreed
Management board established
Yes
Latitude
20º14' - 20º24'N
Longitude
105º29' - 105º44'E
Bio-unit
05c - North Annam and 10b - Northern Indochina

Conservation status

Cuc Phuong was the first protected area to be established in Vietnam. Consequently, there are a large number of official documents relating to the site. This section provides a selective review of these documents. Cuc Phuong was first decreed as a protected area by Decision 72/TTg of the Prime Minister, dated 7 July 1962. This decision decreed the establishment of a 25,000 ha protected forest (MARD 1997). Based upon this decision, the Directorate General of Forests issued Decision No. 18/QD-LN, dated 8 January 1966, which changed the status of Cuc Phuong Forest Enterprise to Cuc Phuong National Park, and established a national park management board. Because of difficulties encountered in implementing Decision No. 18/QD-LN, the Directorate General of Forests issued Decision No. 333/QD-LN, dated 23 May 1966, which clarified the responsibilities of the management board, one of which was to clearly delineate the national park boundary (Anon. 1991).

On 9 August 1986, national park status for Cuc Phuong was approved at the highest level, when the site was included on Decision No. 194/CT of the Chairman of the Council of Ministers, with an area of 25,000 ha (MARD 1997).

An investment plan for the national park was prepared by FIPI in October 1985 (Anon. 1985). This was approved by Decision No. 139/CT of the Chairman of the Council of Ministers in May 1988 (Anon. 1991). In the investment plan, the national park boundary was redefined, and the total area was given as 22,200 ha, comprising 11,350 ha in present day Ninh Binh province, 5,850 ha in present day Hoa Binh province and 5,000 ha in present day Thanh Hoa province (Anon. 1985). Ten years later, in 1998, a second 10-year management plan was prepared for the period up to 2008.

Cuc Phuong is included on the 2010 list as a 22,200 ha national park, including 20,479 ha of forest (FPD 1998).

Topography and hydrology

Cuc Phuong National Park lies at the south-eastern end of a limestone range that runs north-west to Son La province. This limestone is predominantly karst in nature and marine in origin, dating perhaps 200 million years. The limestone range rises sharply out of the surrounding plains, to elevations of up to 636 m. The section of the limestone range encompassed by the national park is around 10 km wide and 25 km long, and has a central valley running along almost the entire length.

The karst topography exerts a dominant influence on drainage patterns in Cuc Phuong. Most of the water that the national park receives is quickly absorbed by a complex underground drainage system common to mature karst landscapes, often emerging from springs on the lower slopes flanking the national park. For this reason, there are no natural ponds or other standing bodies of water within the national park, and there is only one permanent watercourse, the Buoi river. This river bisects the western end of the national park from north to south, and feeds the Ma river, the major river in Thanh Hoa province.

Biodiversity value

The vegetation of Cuc Phuong National Park is dominated by limestone forest. In some places, the forest is stratified into as many as five layers, including an emergent layer up to 40 m in height. Due to the steep topography, however, the canopy is often broken and stratification is unclear. Many individual trees show well developed buttress roots in response to the generally shallow soils (Anon. 1991). The national park contains particularly large specimens of certain tree species, including *Terminalia myriocarpa*, *Shorea sinensis*, and *Tetrameles nudiflora* (Nguyen Nghia Thin 1997), which are developed as tourist attractions. There is an abundance of timber trees and medicinal plants.

Cuc Phuong National Park has an extremely rich flora. To date, 1,980 vascular plant species in 887 genera and 221 families have been recorded at the national park. In terms of number of species, the best-represented families in the flora of Cuc Phuong are the Euphorbiaceae, Poaceae, Fabaceae, Rubiaceae, Asteraceae, Moraceae, Lauraceae, Cyperaceae, Orchidaceae and Acanthaceae (Davis *et al.* eds. 1995). The flora of Cuc Phuong contains elements of the Sino-Himalayan, Indo-Burmese and Malesian floras (Nguyen Nghia Thin 1997). The high known floral diversity at Cuc Phuong can be partly attributed to the high level of survey effort directed at the site

Floral surveys at Cuc Phuong have, so far, identified three endemic vascular plant species: *Pistacia cucphuongensis*, *Melastoma trungii* and *Heritiera cucphuongensis* (Phung Ngoc Lan *et al.* 1996). Cuc Phuong National Park is also considered to be one of seven globally significant Centres of Plant Diversity in Vietnam (Davis *et al.* eds. 1995).

Cuc Phuong supports populations of several mammal species of conservation importance, including the globally critically endangered endemic primate Delacour's Leaf Monkey *Semnopithecus francoisi delacouri* and the globally vulnerable Owston's Banded Civet *Hemigalus owstoni* (CPCP 1999). In addition, the nationally threatened Leopard *Panthera pardus* has been recently recorded at the national park (Lao Dong [Labour] 2000). Furthermore, 38 bat species have been recorded at the national park, including 17 species from a single cave. Unfortunately, several large mammal species, including Tiger *Panthera tigris*, Sambar *Cervus unicolor* and White-cheeked Gibbon *Hylobates leucogenys*, are believed to have become extinct at Cuc Phuong in recent times, mainly due to high hunting pressure and the relatively small size of the national park.

To date, 248 species of bird have been recorded at Cuc Phuong National Park, including two globally threatened species, Chestnut-necklaced Partridge *Arborophila charltonii* and Red-collared Woodpecker *Picus rabieri*, and 12 globally near-threatened species. The national park supports populations of Red-vented Barbet *Megalaima lagrandieri*, which is endemic to Indochina, and Bar-bellied Pitta *Pitta elliotii*, which is endemic to Indochina and Thailand (Tordoff unpublished data). Cuc Phuong National Park is situated at the northern end of the Annamese Lowlands Endemic Bird Area (EBA) (Stattersfield *et al.* 1998). However, none of the restricted-range bird species restricted to this EBA have yet been recorded at the national park (Tordoff unpublished data).

Other taxa that have been studied at Cuc Phuong include snails, 111 species of which were recorded during a recent survey, including 27 species endemic to the national park and its immediate surroundings (Vermeulen and Whitten 1998). Subterranean cave-dwelling fish have also been studied, and at least one species recorded at Cuc Phuong is thought to be endemic to the national park: Cuc Phuong Cat Fish *Parasilurus cucphuongensis*. There are currently 280 butterfly species known from the national park, seven of which were new records for Vietnam when they were first identified in 1998 (Hill *et al.* 1999).

Conservation issues

When Cuc Phuong National Park was established in the 1960s, several communities lived inside the boundary. On 6 October 1986, Decision No. 251/CT of the Chairman of the Council of Ministers ordered the relocation of these communities to areas outside of the national park. During the first phase of relocation, which was completed by the end of 1990, six hamlets with 650 people were relocated from the central valley of the national park and two villages were relocated from the Buoi river valley. However, there are still 2,000 people living along the Buoi river, inside the national park. These people have also been slated for relocation.

The buffer zone of the national park is home to around 50,000 people, many of whom depend upon the natural resources of the national park (CPCP 1999). The most widely exploited forest products are timber and fuel wood. The collection of snails, mushrooms, tubers and bamboo shoots for food is common, as is the collection of banana stems for animal fodder (Dinh Trong Thu and Tran Hong Thu 1998). Hunting, both for subsistence and commercial purposes, takes place at unsustainable levels, and threatens to eradicate a number of mammal, bird and reptile species from the national park. Forest on the fringes of the national park is being heavily degraded by fuelwood collection and livestock grazing, and is being cleared for agriculture in places.

The large number of tourists who visit Cuc Phuong each year pose particular problems for the management of the national park. Waste disposal, collection of plants, and excessive noise created by large tour groups are all problems that the national park staff have yet to fully control. More significantly, the management agenda of the national park is heavily focused on tourism development, at the expense of biodiversity conservation. This has resulted in the development of tourism infrastructure with negative environmental impacts. For example, upgrading the road through the central valley of the national park has facilitated exploitation of forest products. Similarly, construction of artificial lakes inside the national park has resulted in forest clearance and altered local hydrology.

Currently, one of the biggest threats to biodiversity at Cuc Phuong National Park is the construction of National Highway 2 through the Buoi river valley. If this planned road development were to go ahead, it would bisect the national park. Apart from the direct impacts of construction, the road would facilitate access to the forest and, hence, forest product extraction, and might, in the future, act as a focus for human settlement. At the time of writing, the exact route is in question but the road will almost certainly pass close to or through Cuc Phuong National Park.

Other documented values

Cuc Phuong National Park is a popular tourist destination, and receives an estimated 40,000 visitors per year, most of whom are domestic tourists. Due to the large number of visitors, Cuc Phuong has potential value for raising awareness of environmental issues among the general public. This potential has already been partly realised by, for example, the construction of a visitor centre at the national park, which opened in mid 2000.

Cuc Phuong National Park is an important site for biological research and for training scientists: many undergraduate and graduate students visit the national park on field courses. There is also a training centre at the national park for FPD staff.

Cuc Phuong has historical value as an archaeological site. Prehistoric human remains, dating up to 12,000 years old, have been found in caves in the national park. In addition, part of the skeleton of a marine reptile, possibly an ichthyosaur, was recently found in the national park. This is the first discovery of its kind in Vietnam.

The forest at Cuc Phuong provides several essential hydrological services to local communities. For instance, the forest protects the watershed of the Yen Quang reservoir, which provides water for domestic and agricultural use.

Related projects

The *Cuc Phuong Conservation Project (CPCP)* was established in 1996 by Fauna and Flora International, with the objective of supporting the conservation of the natural resources of the national park. The focus of the CPCP is in five main areas: (1) socio-economic research to develop a better

understanding of use of natural resources by local communities; (2) a conservation awareness programme to enhance both local people's and visitor's understanding of nature and of the need to protect the national park; (3) biological research to establish baseline information about Cuc Phuong's biodiversity that enables effective monitoring; (4) institutional capacity building to develop strong professional skills among national park staff; and (5) species conservation programmes to conserve wildlife threatened by trade: the *Owston's Banded Civet Breeding and Ecology Project* and the *Turtle Ecology and Conservation Programme* (CPCP 1999).

Frankfurt Zoological Society have established the Endangered Primate Rescue Centre (EPRC) at Cuc Phuong, in order to conduct captive breeding and veterinary research on Vietnamese gibbons, lorises and leaf monkeys. The EPRC receives animals confiscated from illegal wildlife traders by government authorities (EPRC 1997).

The German Economic Development Programme (DED) is implementing a series of micro-interventions in the buffer zone of the national park, such as bee keeping, irrigation and other alternative income generating activities

The University of Illinois at Chicago and the National Centre for Science and Technology are conducting research into the medicinal properties of the flora of Cuc Phuong. This research has an ethno-botanical element.

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