

# Krong Trai Nature Reserve

## Alternative site name(s)

Suoi Trai, Tay Son

## Province(s)

Phu Yen

## Area

22,290 ha

## Coordinates

13<sup>0</sup>01' - 13<sup>0</sup>10'N, 108<sup>0</sup>46' - 108<sup>0</sup>57'E

## Agro-ecological zone

South Central Coast

## 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 tools completed

No

## Map available

Yes

## Management history

On 22 November 1979, the former Phu Khanh Provincial People's Committee established Tay Son Protected Forest, with a total area of 19,800 ha (Anon. 1990). On 9 August 1986, this site was included on Decision No.194/CT of the Chairman of the Council of Ministers as a 19,000 ha nature reserve with the name Suoi Trai (Trai stream) (MARD 1997). A nature reserve management board was established by the former Phu Khanh Provincial People's Committee on 14 November 1986 (Krong Trai Nature Reserve Management Board 2000).

An investment plan, prepared in 1990, proposed establishing a 22,290 ha nature reserve with the name Krong Trai (Anon. 1990). This investment plan was approved by Phu Yen Provincial People's Committee by Official Letter No. 461/LN, dated 30 November 1990 (Anon. 1990). This investment plan was approved by the former Ministry of Forestry (FPD 1998).

In 1995, a revised investment plan was prepared, which proposed establishing a 27,290 ha nature reserve. This investment plan was approved by Decision No. 579/QD-UB of Phu Yen Provincial People's Committee, dated 30 December 1995, and by Official Letter No. 472/KH of MARD, dated 8 March

1995 (Krong Trai Nature Reserve Management Board *in litt.* 2000).

Krong Trai is included on a list of Special-use Forests to be established by the year 2010, prepared by the FPD of MARD, as a 22,290 ha nature reserve (FPD 2003); this list has not yet been approved by the government.

## Topography and hydrology

Krong Trai Nature Reserve is situated in the transition zone between the Central Highlands and the coastal zone of south-central Vietnam. The topography of the nature reserve consists of two types. The east and north-east of the nature reserve is characterised by low hills, including Mo O (434 m), Ha Gian (431 m), Ca Te (560 m), Hon Dat (590 m), Hon O (574 m) and Hon Tao (414 m). The remainder of the nature reserve is characterised by flat areas with some scattered low hills, c.150 m in elevation.

Streams in the eastern part of the nature reserve feed the Cha Rang river. Streams in the western part feed the Lam and Ba rivers. Most streams within the nature reserve are dry during the dry season, except in an area of swamps in the south-west of the nature reserve.

## Biodiversity values

According to the investment plan, the nature reserve includes 16,005 ha of natural forest, representing 72% of the total area. Krong Trai Nature Reserve supports three main forest types: evergreen forest (1,003 ha), semi-evergreen forest (7,111 ha) and deciduous forest (7,891 ha). Other habitats present include grassland, scrub and swamp (Anon. 1990).

The evergreen forest is distributed in hilly areas and is dominated by members of the Dipterocarpaceae and Fabaceae families. Semi-evergreen forest is distributed in areas that have been subjected to clearance for shifting cultivation, fire or over-exploitation. This forest type is dominated by *Lagerstroemia calyculata* and *Cratoxylum formosum*. Deciduous forest is widely distributed in the nature reserve, and is dominated by *Dalbergia nigrescens*, *Pterocarpus macrocarpus*, *Lanea corpmandelica*, *Careya sphaerica*, *Stereospermum cylindricum* and *Cratoxylum formosum* (Anon. 1990).

A field survey in 1990 recorded 236 vascular plant species. The families with the greatest number of species are the Euphorbiaceae, Caesalpiniaceae, Poaceae, Fabaceae and Moraceae. The nature reserve supports several globally threatened plant species, including *Aquilaria crassna*, *Dalbergia bariensis*, *D. cochinchinensis*, and *D. annamensis*; and a number of species with high economic value, such as rattan, palms and medicinal plants (Anon. 1990).

A total of 262 vertebrate species have been recorded at the nature reserve, comprising 50 mammal, 182 bird, 22 reptile and eight amphibian species. Globally threatened animal species recorded at Krong Trai include Banteng *Bos javanicus*, Gaur *B. gaurus*, Green Peafowl *Pavo muticus* and Crested Argus *Rheinardia ocellata* (Anon. 1990). However, the current status of these species is unclear; Duckworth and Hedges (1998) reviewed the evidence for the continued occurrence of Gaur and Banteng at Krong Trai and concluded that it was 'provisional'.

During a visit to the site in 2003, local people reported that, in 2002, an adult Siamese Crocodile *Crocodylus siamensis* was captured by a trapper in the swamps within the nature reserve, confiscated by forest guards, and released (Le Trong Trai verbally 2004). In

addition, local people reported that six immature crocodiles were collected from within the nature reserve in 2002 (Le Trong Trai verbally 2004). Furthermore, a single Lesser Adjutant *Leptoptilos javanicus*, captured within the nature reserve and confiscated by forest guards in 2002, was seen at the district FPD office (Le Trong Trai verbally 2004).

## Conservation issues

The buffer zone of Krong Trai Nature Reserve includes parts of Son Phuoc, Krong Pa, Suoi Bac and Ta Hu communes, and has a total area of 5,344 ha. The total population of the buffer zone is 1,375 people, while a further 3,184 people live inside the nature reserve (Krong Trai Nature Reserve Management Board *in litt.* 2000). The inhabitants of the nature reserve and buffer zone belong mainly to the E-de ethnic group, who have a long tradition of forest-resource use.

Krong Trai Nature Reserve Management Board (*in litt.* 2000) perceive the two main threats to the nature reserve to be encroachment of local communities onto forest land and clearance of land for shifting cultivation.

There exist plans to build a hydroelectric dam on the lower Ba river, downstream of the nature reserve. The reservoir formed by this dam is projected to permanently inundate the swamps within the nature reserve, with potentially serious implications for wetland-dependent species and communities at the site (Le Trong Trai verbally 2004).

## Other documented values

Krong Trai Nature Reserve lies on the lower watershed of the Ba river, and contributes to the protection of the catchment of this river.

## Related projects

The nature reserve receives investment funding from the national 661 Programme, following decision No. 200/QD-UB of the provincial people's committee, dated 12 June 1999 (Krong Trai Nature Reserve Management Board *in litt.* 2000).

## Conservation needs assessment

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

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

## Operational management plan

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

## Eligibility against VCF criteria

Krong Trai is eligible for VCF support because it meets criteria A, B and C.

Criterion	Eligibility
A <sub>I</sub>	SA1 - Ea So Complex
A <sub>II</sub>	
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

Anon. (1990) [Investment plan for Krong Trai Nature Reserve, Son Hoa district, Phu Yen province]. Tuy Hoa: Phu Yen Provincial Forest Protection Department. 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.