

1.1.5 Forest

The NBR has been covered by forest for a long time, but only few forest areas remain today due to deforestation in Phu Phan Range and the hilly areas of Nakhon Phanom and Sakon Nakhon. In 1999, 6,894 km² or 26.4% of the total area is forest area in the NBR. Forest areas are shown in Figure 1.5. Fauna of the forest area in the NBR is mainly divided into three main types:

(1) Dry Dipterocarp Forest

This kind of forest is mostly found in the Study Area. Most of them are small, sparse forests with non-compact mixed populations of small and large trees. This kind of forest is mostly characterized by dry soil textures of sandy loam or laterite pebbles, and very poor soil fertility. The size and density of trees depend mainly on the humidity and fertility of soil. Major plants in this dry dipterocarp forest include species such as *Simse sal*, *Dipterocarpus intricatus*, *Dipterocarpus tuberculatus*, *ipterocarpus intricatus*, *Shorea roxberghii*, *Xylia Xylocarpa*, *Irvingia malayana*, *Pterpcarpuss cambodianus*, *Simplocos racemosa*, *Mangifera pentandra* and *Buchanania lanzon*.

(2) Mixed Deciduous Forest

This kind of forest is found in the sandy loam areas. It has, though sparse, various medium and large trees. Scattered populations of various kinds of bamboo were also found. Major species include *Pterocarpuss cambodiansus*, *Xylia xylocarpa*, *Dipterocarpus alatus*, *Legerstroemia cuspidate*, *Sindora siamensis* and *Canarium kerri*. In addition, there are various kinds of bamboo, such as, *Denrocalamus*, *Thyrstotachys*, *Dendrocalamus membra naceus*, *Arundinaria pusilla*, and *Oxytenanthera albo-ciliata*.

(3) Dry Evergreen Forest

This kind of forest is found in the humid areas—in valleys, along rivers, at water sources, and on mountains. Generally, the forest is evergreen for the entire year with various kinds of plants growing in a crowded pattern. Major species include *Dipterocarpus alatus*, *Hopea edorata*, *Aromadendron elegans*, *Lepisanthes rubignosa*, and *Mangifera pentandra*.

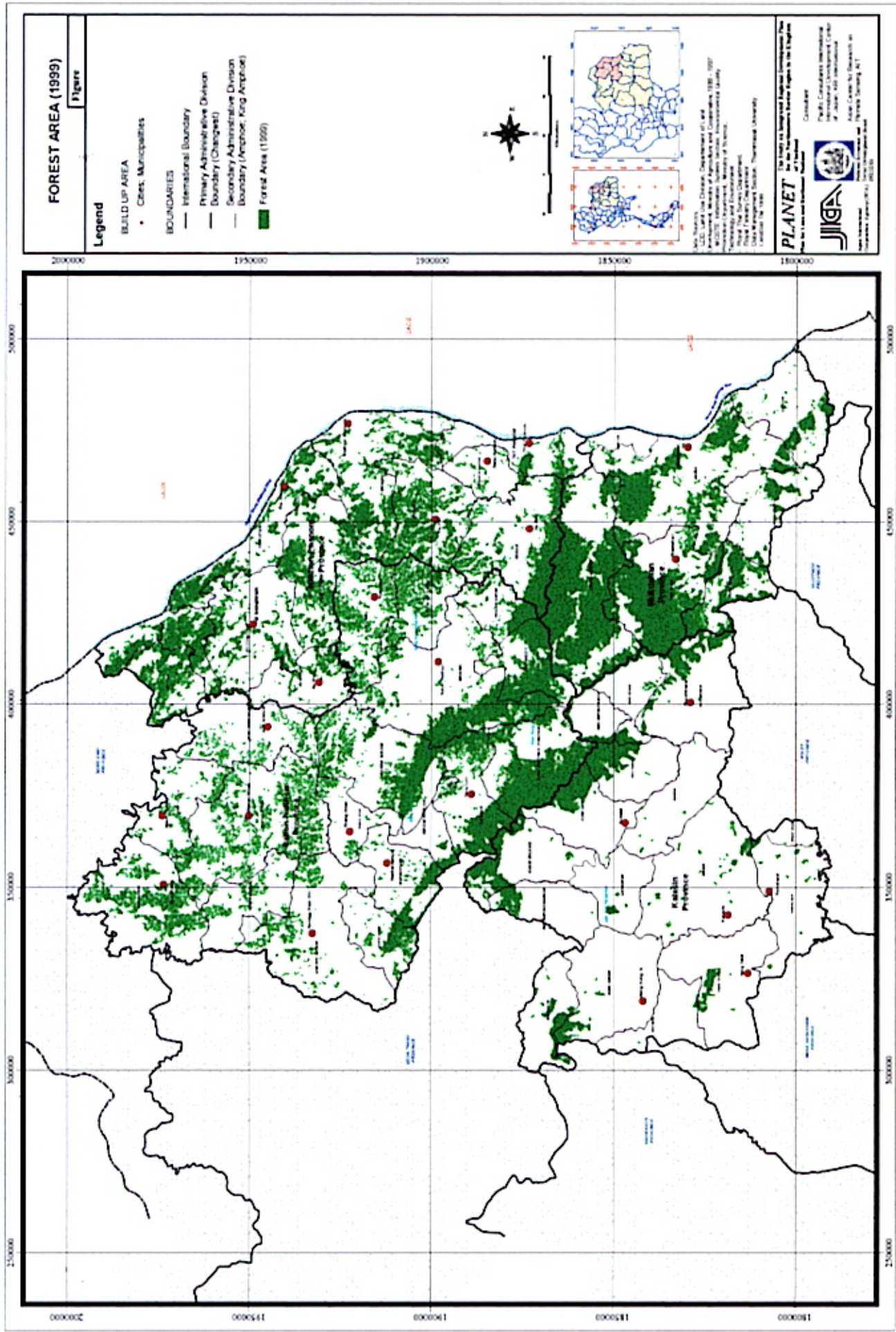


Figure 1.5 Forest Area in the NBR

1.1.6 National Park

The NBR has four national parks, which are mainly located in the Phu Phan Range, as shown in Table 1.1. The national parks are managed by the Royal Forest Department, which plays a significant role in the protection of vegetation and wildlife, as well as the conservation of water and soil of the BNR.

Table 1.1 National Parks in NBR

Name	Changwat	Area (rai)
Phu Phan	Sakon Nakhon, Kalasin	415,439
Huai Huat	Sakon Nakhon, Nakhon Phanom, Mukdahan	517,850
Mukdahan	Nakhon Phanom, Mukdahan	30,313
Phu Sa Dok Bua	Mukdahan and others	144,375

Source: Royal Forest Department

1.2 Environmental Characteristics of the NBR

1.2.1 Deforestation

People in the NBR have managed their lives by depending on the forest for a long time.

The shifting cultivation of the native people had little effect on deforestation when their population was rather small. However, their increasing numbers have shortened the repeated processes of shifting cultivation, and the excessive use of this method of cultivation has led to vegetation degradation and increasingly severe soil erosion. The deforestation situation in the are shown in Figure 1.6

However, more damage on forests comes from commercial logging and expansion of cultivated land. Modern farming technology, with large farming areas as well as commercial logging, has drastically decreased forest areas. Table 1.2 clearly shows that forest and other land areas have decreased during the past 10 years, while farmland has gradually increased. This means that forest and other land areas have been gradually reclaimed to utilize as farmland. In 1995, forests covered approximately 15% of the NBR.

Table 1.2 Changes in Land Use from 1985 to 1995

(rai)

	1985		1991		1995		Difference	Change
Forest	2,771,875	16.8%	2,489,217	15.1%	2,434,490	14.8%	-337,385	-12.2%
Farm Land	6,313,119	38.3%	7,083,485	42.9%	7,059,622	42.8%	746,503	11.8%
Other Land	7,418,136	44.9%	6,930,428	42.0%	7,009,018	42.5%	-409,118	-5.5%
Total	16,503,130	100.0%	16,503,130	100.0%	16,503,130	100.0%	0	0.0%

Note: Other land includes grassland, idle land, water bodies and swampland, public land, national reserves, municipality and sanitary district, roads etc.

Source: Agricultural Statistics of Thailand, MOTC

Currently, large agglomerations of forest remain only in Phu Phan Range and the hilly areas in Nakhon Phanom, Mukdahan and Sakon Nakhon.

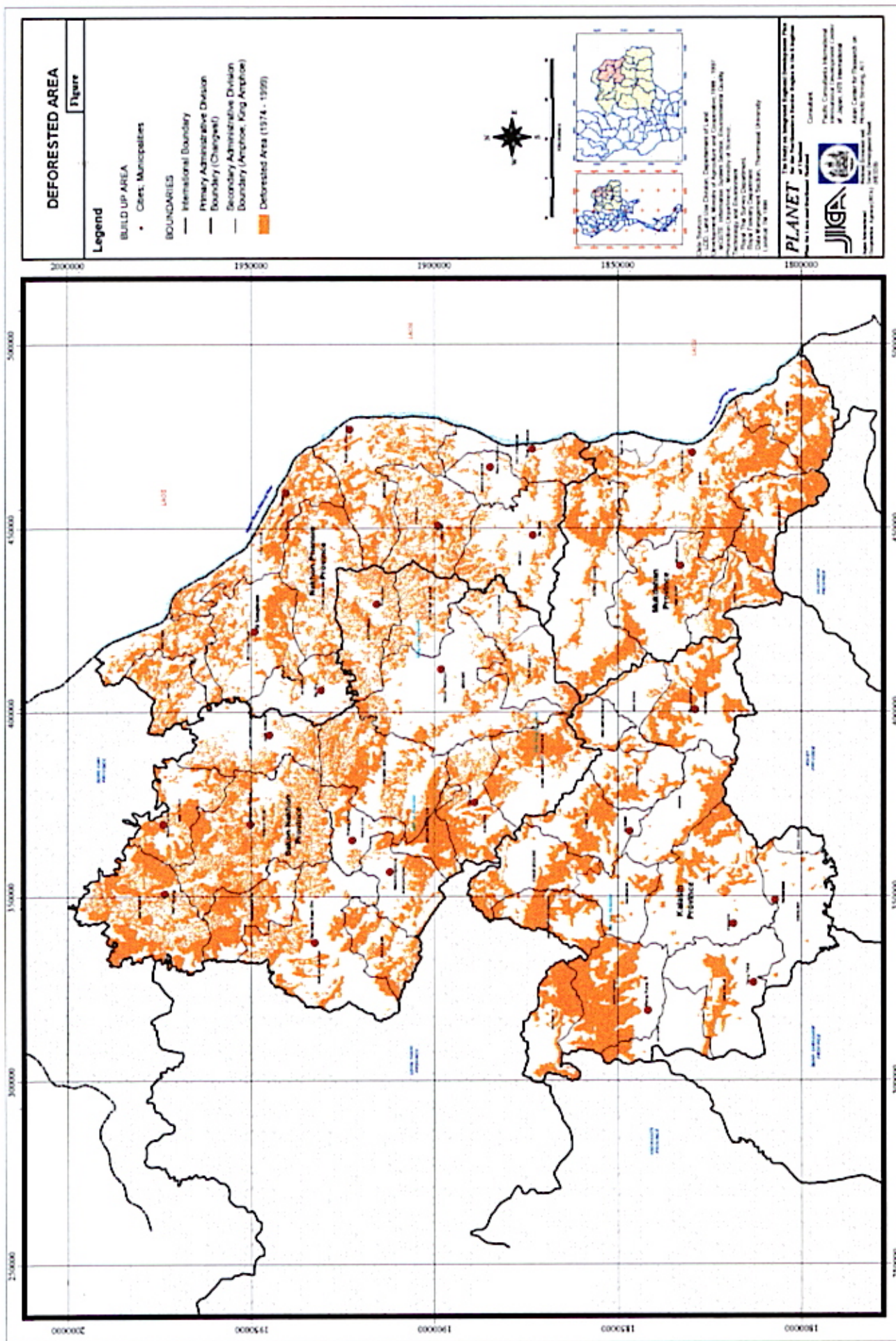


Figure 1.6 Deforestation Area