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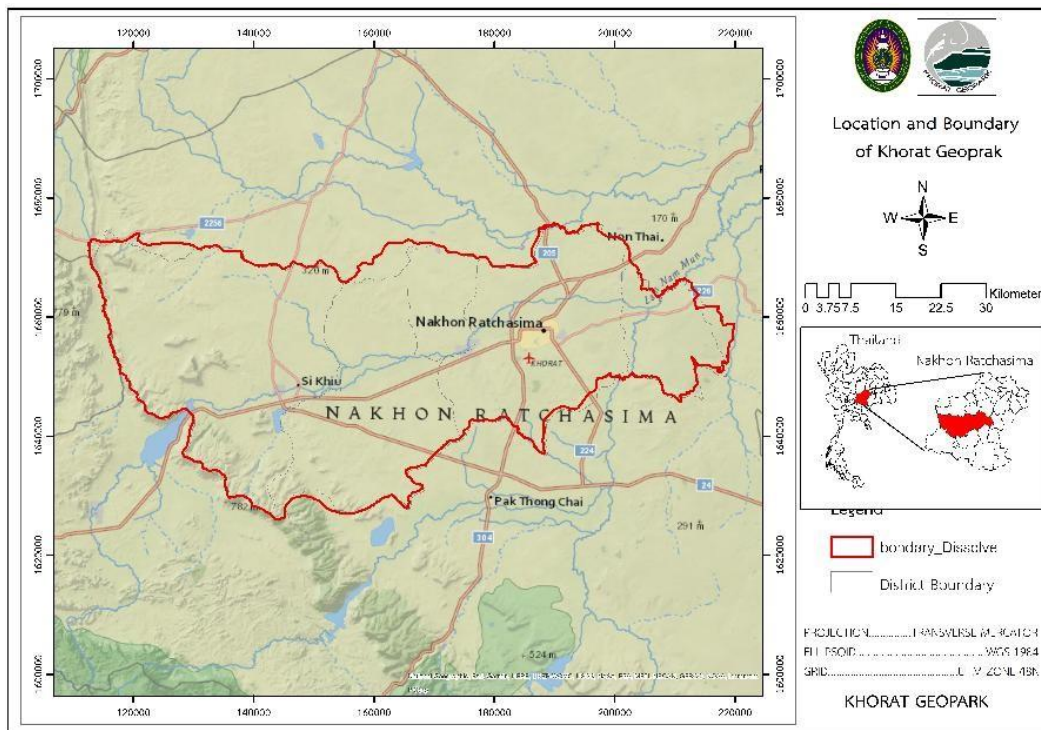
Applicant UNESCO Global Geopark

Khorat Geopark, Thailand

Geographical and geological summary



Map of Khorat aspiring UNESCO Global Geopark region (red point), using a standard UN map showing the location of the aspiring UNESCO Global Geopark



Khorat aspiring UNESCO Global Geopark indicating the boundary, cities, general geographic points.

1. Physical and Human Geography

Khorat Geopark is situated in the middle to lower Lam Takhong Basin in Nakhon Ratchasima

Province, Northeast Thailand. The geopark covers 5 out of 32 districts in the province, Sikhio, Sung Noen, Kham Thale So, Mueang Nakhon Ratchasima, and Chaloe Phra Kiat districts, extending from 14° 40' 48" to 15° 08' 24" N Latitude and 101° 23'

46" to 102° 23' 53" E Longitude. The total area is 3,167.38 km². The geopark is 170 km northeast of the Thai capital (Bangkok), connected by major highways. Three topographical regions are encompassed by Khorat Geopark: 1) a montane area with cuestas, 2) undulating plains, and 3) flat plains. The highest and lowest points are 782 and 163 meters amsl, respectively. The major river flowing through the geopark is the Lam Takhong River. The climate is Tropical Wet and Dry, with a mean annual precipitation of 1,019.2 mm and mean annual temperature of 27.4 °C. The natural vegetation is mostly dry dipterocarp forest and dry evergreen forest. The human population of Khorat Geopark is approximately 741,239 (2018), comprising mainly Thai Khorat, Thai Northeastern (Isan), and Thai Chinese groups. The major economic activity is agriculture, with cultivation of rice, cassava, and sugar cane and raising of cattle, pigs, and chickens. Nakhon Ratchasima is a regional highway and railway transportation center. In the city center of Nakhon Ratchasima and the surrounding district cities, the majority of the population is engaged in industry, commerce, and services.

The human population of Khorat Geopark is approximately 741,239 (2018), comprising mainly Thai Khorat, Thai Northeastern (Isan), and Thai Chinese groups, with minorities including Thai Muslim, Thai Yuan, and Thai Sikh groups. The major economic activity in the geopark area is agriculture, with cultivation of rice, cassava, and sugar cane and raising of cattle, pigs, and chickens. Furthermore, Nakhon Ratchasima is a regional highway and railway transportation center. In the city center of Nakhon Ratchasima and the surrounding district cities, the majority of the population is engaged in industry, commerce, and services.

2. Geological features and geology of international significance

Khorat Geopark, part of the Khorat Plateau, is underlain by Mesozoic rocks of the Khorat Group, consisting of sandstone, conglomerate, siltstone, shale, claystone, and rock salt. The rising of the Himalayas 65 to 55 million years ago caused lifting and folding of the rock layers of the Khorat Group to form a plateau and a basin. Alternating layers of more and less resistant rock has resulted in the formation of 2 rows of cuestas in the western geopark region. In the center, the Early Cretaceous Khok Kruat Formation has yielded numerous reptile fossils, including 3 new species of iguanodontid dinosaurs and new species of turtle and crocodile. In the east, fluvial sediments, 60 m thick, from Neogene to Quaternary, have yielded 3 new species of fossil mammals, *Khoratpithecus piriyai*, an ancient orangutan, *Merycopotamus thachangensis*, a possible hippopotamus ancestor, and *Aceratherium porpani*, a hornless rhinoceros. Ten genera of ancient elephants have been recovered, out of 55 genera known worldwide: *Gomphotherium*, *Prodeinotherium*, *Protanancus*, *Tetralophodon*, *Zygodon*, *Stegolophodon*,

Deinotherium, *Sinomastodon*, *Stegodon*, and *Elephas*. More than 20 other mammal species have been obtained as well as abundant fossil wood, fruits, seeds, and pollen. Five geological features of international significance, ranked in order of importance, are 1) the high diversity of fossil mammals, especially elephants, from Neogene to Quaternary deposits, 2) deposits of iguanodont dinosaurs and associated animals from the Early Cretaceous, 3) sources of abundant and diverse petrified wood, 4) the type locality of the Khok Kruat Formation in the Khorat Group, and 5) a prominent section of the Khorat cuesta, one of the longest cuesta systems in the world.