

Thar Desert

Thar Desert, also called Great Indian Desert, arid region of rolling sand hills on the Indian subcontinent. It is located partly in Rajasthan state, northwestern India, and partly in Punjab and Sindh (Sind) provinces, eastern Pakistan.

The Thar Desert covers some 77,000 square miles (200,000 square km) of territory. It is bordered by the irrigated Indus River plain to the west, the Punjab Plain to the north and northeast, the Aravalli Range to the southeast, and the Rann of Kachchh to the south. The subtropical desert climate there results from persistent high pressure and subsidence at that latitude. The prevailing southwest monsoon winds that bring rain to much of the subcontinent in summer tend to bypass the Thar to the east. The name Thar is derived from thul, the general term for the region's sand ridges.

Land

The Thar's desert sands overlie Archean (early Precambrian) gneiss (metamorphic rocks formed between 4 billion and 2.5 billion years ago), Proterozoic (later Precambrian) sedimentary rocks (formed about 2.5 billion to 541 million years ago), and more-recent alluvium (material deposited by rivers). The surface consists of aeolian (wind-deposited) sand that has accumulated over the past 1.8 million years.

The desert presents an undulating surface, with high and low sand dunes separated by sandy plains and low barren hills, or bhakars, which rise abruptly from the surrounding plains. The dunes are in continual motion and take on varying shapes and sizes. Older dunes, however, are in a semi-stabilized or stabilized condition, and many rise to a height of almost 500 feet (150 metres) above the surrounding areas. Several playas (saline lake beds), locally known as dhands, are scattered throughout the region.

The soils consist of several main groups—desert soils, red desertic soils, sierozems (brownish gray soils), the red and yellow soils of the foothills, the saline soils of the depressions, and the lithosols (shallow weathered soils) and regosols (soft loose soils) found in the hills. All those soils are predominantly coarse-textured, well-drained, and calcareous (calcium-bearing). A thick accumulation of lime often occurs at varying depths. The soils are generally infertile and, because of severe wind erosion, are overblown with sand.

The amount of annual rainfall in the desert is generally low, ranging from about 4 inches (100 mm) or less in the west to about 20 inches (500 mm) in the east. Precipitation amounts fluctuate widely from year to year. About 90 percent of the total annual rainfall occurs during the season of the southwest monsoon, from July to September (see also Indian monsoon). During other seasons the prevailing wind is the dry northeast monsoon. May and June are the hottest months of the year, with temperatures rising to 122 °F (50 °C). During January, the coldest month, the mean minimum temperature ranges between 41 and 50 °F (5 and 10 °C), and frost is frequent. Dust storms and dust-raising winds, often blowing with velocities of 87 to 93 miles (140 to 150 km) per hour, are common in May and June.

The desert vegetation is mostly herbaceous or stunted scrub; drought-resistant trees occasionally dot the landscape, especially in the east. On the hills, gum arabic acacia and euphorbia may be found. The khajri (or khejri) tree (*Prosopis cineraria*) grows throughout the plains.

The thinly populated grasslands support blackbucks, chikara (gazelles), and some feathered game, notably francolins (partridges) and quail. Among the migratory birds, sand grouse, ducks, and geese are common. The desert is also the home of the endangered great bustard.

People

Most of the desert's inhabitants reside in rural areas and are distributed in varying densities. Both Islam and Hinduism are practiced, and the population is divided into complex economic and social groups. The prevailing languages are Sindhi in the southwest, Lahnda in the northwest, and Rajasthani languages—especially Marwari—in central and eastern portions of the Thar. The ethnic composition of the Thar is diverse. Among the most prominent groups are the Rajputs, who inhabit the central Thar. Many nomads are engaged in animal husbandry, crafts, or trade. In general, the nomads are symbiotically related to the sedentary population and its economy.

Economy

The grasses form the main natural resources of the desert. They provide nutritive pasturage as well as medicines used locally by the inhabitants. Alkaloids, used for making medicine and oils for making soap are also extracted. There are five major breeds of cattle in the Thar. Among those the Tharparkar breed is the highest yielder of milk, and the Kankre breed is good both as a beast of burden and as a milk producer. Sheep are bred for both medium-fine and rough wool. Camels are commonly used for transport as well as for plowing the land and other agricultural purposes. Where water is available, farmers grow crops such as wheat and cotton.

However, water is scarce. Whatever seasonal rain falls is collected in tanks and reservoirs and is used for drinking and domestic purposes. Most groundwater cannot be utilized, because it lies deep underground and is often saline. Good aquifers have been detected in the central part of the desert. Apart from wells and tanks, canals are the main sources of water in the desert. The Sukkur Barrage on the Indus River, completed in 1932, irrigates the southern Thar region in Pakistan by means of canals, and the Gang Canal carries water from the Sutlej River to the northwest. The Indira Gandhi Canal irrigates a vast amount of land in the Indian portion of the Thar. The canal begins at the Harike Barrage—at the confluence of the Sutlej and Beas rivers in the Indian Punjab—and continues in a southwesterly direction for some 290 miles (470 km).

Thermal power-generating plants, fueled by coal and oil, supply power only locally in the large towns. Hydroelectric power is supplied by the Nangal power plant located on the Sutlej River in Punjab.

Roads and railways are few. One railway line serves the southern part of the region. In the Indian part of the desert, a second line goes from Merta Road to Suratgarh via

Bikaner, and another connects Jodhpur and Jaisalmer. In the Pakistani part of the desert, a railway line runs between Bahawalpur and Hyderabad.

The partition of India and Pakistan in 1947 left most of the irrigation canals fed by the rivers of the Indus system in Pakistani territory, while a large desert region remained unirrigated on the Indian side of the border. The Indus Water Treaty of 1960 fixed and delimited the rights and obligations of both countries concerning the use of waters of the Indus River system. Under the agreement, waters of the Ravi, Beas, and Sutlej rivers are to be made available to the Indira Gandhi Canal mainly to irrigate portions of the Thar in western Rajasthan.

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