CHAPTER 3
STUDY AREA
India’s western most state is Gujarat. These state formed on 1st May, 1960, which situated between 20°01’ N to 24°07’ N latitude and 68°04’ E to 74°04’ E longitudes. Gujarat covers an area of 1,96,024 sq. km. It is western side bounded by the Arabian sea, North and North-East side bounded by the Rajasthan state, East side bounded by state of Madhay pradesh, south and South-East side bounded by Maharashtra state. The Cancer tropic passes through the Surendranagar and Kanchchhh district.

The two desert present in Gujarat state. One is north of Kachchhh and the other between Kachchhh. 1600 kms. Long coast-line has Gujarat state and it is longest among all state of country. Gujarat state has 25 districts, having 226 talukas, sub-divided into 18618 villages and 242 towns.

The biodiversity of Gujarat state is manifested in about 4320 plant species and medicinal flora forms a major. 1315 species has recorded of medicinal value of Gujarat state. These medicinal plants include 754 herb, 248 tree, 165 shrubs and 148 climbers. In these species 1016 species are wild and 299 species are being under cultivation. Out of all these 102 species are of conservation-concern and 76 are naturally rare (Source: Pandey et al., 2005. Medicinal plants of Gujarat, GEER Foundation, Gandhinagar).

The south Gujarat situated between 21°14’-22°49’N north latitude to 72°22’-74°15’E east longitude. South Gujarat at present comprises seven districts, Vadodara, Bharuch, Narmada, Surat, Dang, Navsari and Valsad. South Gujarat a geographical area of 31,495 km².

South Gujarat bounded by the north to northeast by the districts Anand, Kheda, Godhra and Dahod, in the east by Madhya Pradesh; it is bounded by the south
and southeast by Maharashtra and Dadra-Nagar Haveli and Daman. It is north-west situated the Arabian Sea and Gulf of Kambhat.

South Gujarat consists of a typical sub-humid to humid climate. It atmosphere is moist type therefor the soils contain moisture throughout the year. Mostly the temperature is annualy about 26°C and the summer temperature is mostly 46°C and the winter temperatures are 22°C.

Most of the annual relative humidity is 70-75 %. The south Gujarat rainfall is 400-2500 mm. South Gujarat has three wildlife sanctuaries viz., Jambughoda in Vadodara district, Shoolpaneshwar in Narmada district and Purna in The Dangs district and Vansda National Park in Navsari district.

In South Gujarat critically endangered plant species are: Sterculia guttata, Toona ciliata and Wrightia dolichocarpa. The endangered species are Casearia championii, Tamarix aphylla, Melia dubia and Ficus nervosa. The vulnerable species are Firmiana colorata, Boswellia serrata, Garuga pinnata Ceriops tagal and Ehretia laevis.
3.1 VANSDA NATIONAL PARK

3.1.1 Geographical location

Vansda National Park was established in 1979 and spread over an area of 24 km². Vansda National Park situated between 20°51’16”-21°21’22”N to 73°20’30”-73°31’20”E. Vansda National Park spread over 23.99km² in Navsari District and Vansda Taluka in south Gujarat. Vansda National Park area is hilly with altitude ranging from 110-360m. Vansda National Park hills are extensions of Sahyadri Range. The east side of Vansda National Park is continuas of forest of Dang and River of Ambica, Navtad-Kalaamba road situatd in western side. Waghai-Bilimora railwayline situated in North side and River of Ambica, reserve forests of Vansda situated in southern side.

Vansda National Park is a tract of Dangs forests, Valsad district forest and Uni Range of Vyara division, Surat District forests. Hilly terrain area of moderate altitudes.

Following five sites were selected in the present study (Map 1).

1. Kalaamba
2. Sadardevi
3. Kalipos
4. Bhaarad grassland
5. Kilad
3.1.2 The Forest

The forest kind is south Indian tropical moist deciduous forests. The subtype of forest within the area is bamboo forest, southern moist mixed deciduous forests and tropical riverine forest (Champion & Seth, 1968).

3.1.3 Climate

Vansda national park climate is semi-arid and dry sub-humid. Tropical climate with three distinct seasons, monsoon, winter and summer.
i. **Rainfall**

The monsoon is irregular and erratic. 1000mm to 4650mm rainfall ranges. Highest rainfall during month of July with infrequent throughout November to January and March to May. Usual yearly rainfall is 1800mm to 2000mm. These are highest for Gujarat.

![Fig: 2 Rainfall of VANSDA NATIONAL PARK.](image)

ii. **Temperature**

Minimum temperature recorded is 8.8 °C and maximum temperature recorded is 43.8 °C. The temperature ranges during winter months from 10 °C minimum, during summer months 40 °C maximum. Hottest months are April and May. Temperature enlarge from about half of February. December is the coldest month, greatest temperature of about 25°C and a mean smallest amount of 16°C.
3.1.4 Soil

The soil is one of the most important ecological factors and also is the most characteristic feature of terrestrial environments. Three type of soil found in Vansda national park: Deep black, laterite and rocky. Red and Black soil is also found in Vansda national park.

3.1.5 Vegetation

Vansda National Park forest is dense and varied and has very rich vegetation. In this park 450 species of flowering plants are record. They belonging to 78 families from 292 genera are record. In which 108 species are trees, 51 shrubs, 64 climbers, 202 herbs and 25 grasses. Beautiful Orchid, bracket fungus, Teak, Bamboo, Kakad, Timru, Humb, Sisam, Mahudo, Behda, Umaro, Shimlo, Amla, Haldu and wild banana tree found in Vansda National Park.

3.1.6 Sacred places

Vansda National Park is richly dotted with sacred places.

Botanical Garden, Waghai;
Gir Water falls adjoining to Vansda National Park
Bio-diversity Conservation centre at Botanical Garden
Mahal forest (Purna Sanctuary)
Saputara (52 kms) the only hill-station of Gujarat state
Hot-water spring Unai
VANIL Udyog (Navtad) and wood workshop at Waghai.