2.1 GENERAL, LOCATION AND TOPOGRAPHY

Sariska Tiger Reserve (STR) is situated in the Alwar district of Rajasthan between Longitude: 79° 17’ to 76°34’N and Latitude: 27° 5’ to 27° 33’ E (Figure 2.1). The total area of Tiger reserve is 881 km², with 274 km² as a notified National Park. The major part of the area is occupied by rocks of the Delhi system and Aravalli system comprising of quartzites, conglomerates, grits, limestone, phyllite, granites and schists (Pascoe, 1950; Sankar, 1994).

STR is characterized by rugged terrain, valleys and plateau with the altitudinal variation from 540 m to 777 m. The two main plateaus are Kankawari (524 m above mean sea level) and Kiraska (592 m above the mean sea level). The most remarkable characteristics of the hills are their homogenetic regularity of height, level summits and uniform appearance, stretching out from north-east to south-west, in more or less parallel lines (Soni, 2000).

The depth of soil layer is more than 1 m in valleys, whereas it is only a few centimeters deep on the hill slopes. The soil is sandy loam and alkaline with pH varying from 7.25 to 8.00 (Yadav and S. K Gupta, 2006). The Alwar Thanaghazi- Jaipur State Highway passes through the reserve and 2000 vehicles ply on it everyday. Another state highway that passes through the reserve is Sariska- Kalighati- Pandupol road which is 20 km in length (Sankar, 1994).
2.2 CLIMATE:

The climate is subtropical, characterized by a distinct winter, summer, monsoon and post-monsoon. Winter commences from November. In winter, the temperature has been observed to drop to 3° C. Summer commences from mid March and continues till end of June. July and August are rainy season. Summer is followed by monsoon from south-west in July and August. The study area also receives occasional winter and summer rains. Average annual rainfall recorded is 650 mm (Sankar, 1994).

2.3 HISTORY AND ARCHAEOLOGICAL RICHNESS:

Sariska Tiger Reserve was created in 1978. In the pre-independence period, the forest within the Reserve was a part of the erstwhile Alwar State and maintained as a hunting Reserve for the royalty. After independence, these were first notified as a Reserve wherein it was unlawful to hunt, shoot, net, trap, snare, capture or kill any kind of wild animals in 1955. The Reserve status was upgraded to that of a Sanctuary in 1958. Later, in view of the preservation of wild animals in a better way, a few forest areas contiguous to the Sanctuary were also included. Within STR there are several places of historical interest. The pandupol temple which is a major attraction for tourist lies in the notified National Park of the reserve.

2.4 MAJOR VEGETATION TYPES:

The vegetation of Sariska correspond to (1) Northern tropical dry deciduous forests (subgroups 5B; 5/E1 and 5/E2) and Northern Tropical Thorn forest (subgroup 6B) (Champion and Seth, 1986). *Anogeissus pendula* is the dominant tree species covering over 40 percent area of the forest (Sankar, 1994). *Boswellia serretta* and *Lannea*
*Lantana camara* grow on rocky patches. *Acacia catechu* and bamboo are common in the valleys. Some valleys support *Butea monosperma* and *Zizyphus mauritiana*. *Dendrocalamus strictus* is extremely limited in distribution and is found along well drained reaches of the streams and moist and cooler parts of the hills. *Albizia lebbeck*, *Diospyros melanoxylon*, *Holoptepia integrifolia* and *Ficus spp.* are found in moist localities (Sankar, 1994).

Parmar (1985) and Rodgers (1985) have classified vegetation of Sariska as follows:

1. *Anogeissus pendula* forest
2. *Boswellia serrata* forest
3. *Acacia catechu* forest and
4. *Miscellaneous forest*, which can be further sub-divided into three categories viz.
   a) *Butea monosperma* forest
   b) Forest along nallas and
   c) Scrub land

### 2.4.1 *Anogeissus pendula* forest:

This vegetation is most dominant in the undulating areas as well as on the lower hill slopes ([Plate 4a](#)). This is most gregarious and may form up to 100% of the canopy (Sankar, 1994). The others tree species associated with this vegetation are *Acacia catechu*, *Capparis sepieria*, *Cassia fistula*, *Diospyros melanoxylon*, *Lannea coromandelica* and *Grewia flavescens*. Species like *Ficus racemosa*, *Mallotus philippinensis*, *Mitragyna parviflora* and *Syzygium cumini* are found in moist localities.
2.4. 2 *Boswellia* forest:

This is another very distinctive zone, typically found on the steep upper slopes on hills. This species is associated with *Anogessius* forest while *Euphorbia neriifolia* is found in understorey on steep slopes.

2.4. 3 *Acacia catechu* forest:

*Acacia catechu* is found on the hill slopes as well as on plains. This species is associated with *Anogessius pendula, Boswellia serrata and Zizyphus mauritiana* trees. The other common trees and shrubs are *Bauhinia racemosa, Capparis sepieria, Wrightia tinctoria* and *Grewia flavesense*.

2.4.4 Miscellaneous forests:

a) *Butea monosperma* forest

This species is found at the foothills and plains throughout the forest. *Butea monosperma* trees in STR commonly seen in association with *Zizyphus mauritiana, Capparis sepieria* and *Phoenix sylvestris*.

b) Forest along nallas

In sariska, forests along the nallahs is more of wet conditions and have patches of trees like *Antherocephalus kadamba, Ficus spp, Phoenix sylvestris* and *Syzygium cumini* (Plate 4b).
c) Scrubland:

These areas (Plate 5a) typically have grasses and herbs as ground cover and shrubs species such as Grewia flavesence, Capparis sepieria, Zizyphus nummularia and Adhathoda vasica as the next layer. Trees are scattered and the predominant species are Balanites aegyptiaca, Zizyphus mauritiana, Acacia leucophloea and Acacia senegal.

2.5 FAUNA:

Wild herbivores found in Sariska are chital (Axis axis), sambar (Rusa unicolor) and nilgai (Boselaphus tragocamelus). Omnivores found are wild pig (Sus scrofa) and jackal (Canis aureus). The park supports carnivore species such as five reintroduced tigers (Panthera tigris), leopard (Panthera pardus), and striped hyena (Hyaena hyaena). Small carnivores found are caracal (Felis caracal), jungle cat (Felis chaus), common mongoose (Herpestes edwardsii), small Indian mongoose (H.auropunctatus), ruddy mongoose (H. smithi), palm civet (Paradoxurus hermaphroditus), small Indian civet (Viverrica indica) and ratel (Mellivora capensis). In 2009, desert cat (Felis sylvestris) was reported from Sariska (Gupta et al., 2009). Earlier, the wild dog or dhole (Cuon alpinus) was reported in STR (Sankar, 1994) but they are not sighted in recent past. Rhesus macaque (Macaca mulatta) and common langur (Semnopithecus entellus) are the two primates found here. Porcupine (Hystrix indica), rufous tailed hare (Lepus nigricollis ruficaudatus) and eleven species of rodents viz Indian gerbil (Tatera indica), Indian bush rat (Golunda ellioti), spiny tailed mouse (Mus platythrix), house mice (Mus musculus), little Indian field mice (Mus booduga), long tailed tree mouse (Vandeleuria oleracea), sand coloured rat (Millardia gleadowi), soft fur field rat (Millardia miliata), brown rat (Rattus norvegicus), house rat (Rattus rattus) and pygmy gerbil (Gerbillus nanus) are found in Sariska. Due to presence
of villages inside and on the periphery of STR a large number of domesticated livestock are also occurs within the park (Plate 5b). These include buffaloes, brahminy cattle, goats, camel, dogs and domestic cats. Sankar et al., (1993) listed a checklist of 211 bird species belonging to 52 families in STR. These include 73 migratory (Plate 6a) and 120 resident species and a number of aquatic birds also visit the park during winter.

2.6 HUMAN SETTLEMENT:

There are 32 villages within the Tiger Reserve boundary and out of them ten are situated in the notified National Park. Earlier there were twelve villages due for relocation since 1984 in the notified National Park. Of these, village Bhagani has been relocated during November 2007. In the revenue villages the occupation of the people is based on agriculture but in the grazing camps it is animal husbandry.

2.7 TOURISM:

Tourism is not so regulated and most of the tourists coming to the reserve, come to pandupol temple especially on Tuesdays and Saturdays, when entry to the reserve is free. In the peak season which is from July to August there is a fair held at the pandupol temple and Bartari temple that results in heavy traffic inside the core area even during night (Plate 6b). However on other days only day time tourism is allowed and the reserve remains closed after dusk.
2.9 INTENSIVE STUDY AREA (ISA).

The study was conducted in an intensive study area of 144 km$^2$ which comes under the National Park (Figure 2.1) in two different seasons, winter (November to February) and summer (March to June).

Figure 2.1 Location, administrative boundary and intensive study area in Sariska Tiger Reserve, Rajasthan.
Plate 4a. *Anogessisus pendula* found on lower hill slopes.

Plate 4b. *Phoenix sylvestris* typical vegetation along the forest nallahs.
Plate 5a. Open scrubland with small patches of *Capparis sepieria*

Plate 5b. Human disturbance in open scrubland.
Plate 6a. Migratory birds at Kankawas Lake.

Plate 6b. Pilgrims visiting Pandupol temple.