CHAPTER -6

Study Area

LOCATION

Ratapani Wildlife Sanctuary, having a total area of 82384 hectares, is sprawling in the forests of Vindyan ranges on the North of the Narmada River in Madhya Pradesh. Ratapani derives its name from the village Ratapani. The sanctuary is situated in the South of the Dam Ratapani. The Sanctuary is approached throughout the year at the distance of 45 km from the state Capital Bhopal.

The sanctuary lies in between 77° 31’ 30” to 78° 4’ 3” East longitude and 23° 6’ 17” to 22° 49’ 47” north latitude. The sanctuary extends over an area of 530.67 sq. km. of forests out of which the 260.66 sq. km. is reserved forests and 270.01 sq. km. is protected forest area and also 57.54 sq. km. of non-forest area of 18 villages is included in the Sanctuary. Most of the area is hilly comprising of Vindhyans hill ranges spreading East-west. One can enjoy to witness 4- types of forests:-

5A / Cib - Southern Tropical Dry Deciduous Dry Teak Forests
5A / C3 - Southern Tropical dry deciduous Mixed Forests
5 / D 51 - Tropical Dry Deciduous Scrub
5 / D 54 - Tropical Dry Deciduous Forest Dry Grassland

24 villages situated inside the sanctuary have population of 5209. They include three forest villages with population of 302. The population of Raisen district is 7, 10,542 out of which the 90.05 % is rural. The SC and ST population form 16.72 and 15.43 % respectively.

The WLS lies within the Raisen and Sehore districts and Obedullahgunj Forest Division. The WLS is seven Km from Obedullahgunj, which is its headquarter. Obedullahgunj railway station is between Bhopal and Itarsi, 35 km south of Bhopal and 55 km North of Itarsi. The WLS is located along NH 12 (Jabalpur-Jaipur).
LANDFORM AND WATER SUPPLY

The entire area of WLS is undulating, consisting of hill, plateau, valleys and plains. The elevation in the WLS varies from 300 m to 690 m having the highest peak 690 m. A continuous range of hills is spread from east to west in the southern part of the sanctuary. The hill range belongs to the Vindhyan Mountains. The hills are comparatively low and their tops are generally flat, gentle sloping with precipitous falls in many area. Interspersed between the hills are small narrow valleys with deep sandy loam soils and in a few pockets the trap formations and resultant black cotton soil are seen. The famous prehistoric rock paintings of Bhembaitka are situated in these very hills in the northern part within the sanctuary.

The landform of the WLS comprises hills, plateau, gorges, plains and water bodies i.e., area is highly diversified providing suitable habitats for different kinds of wildlife. There are a number of streams such as Barna, Sankal and Kolar in the WLS. These streams are seasonal; however, water is available in some pools in these streams during the summer. Ratapani Lake located inside the sanctuary is a permanent water source for the wild animals. There is a scarcity of water in a large part of the sanctuary during the summer months.

FORESTS

The forests of the WLS belong to slightly moist and dry teak forests and mixed forests with varying proportion of teak. The forests are generally lowly stocked. The density varies from 0.2 to 0.6 and only a few small patches have density more than 0.6. Teak (Tectona grandis) is the main crop. The associates of the teak forests include Bija (Pterocarpus marsiupium), Saja (Terminalia tomentosa), Bahera (Terminalia bellerica), Dhaora (Anogeissus latifolia), Bhirra (Chloroxylon swietenia), Khair (Acacia catechu), Kullu (Sterculia urens), Tendu (Diospyros melanoxylon), Mahua (Mahduca latifolia), etc. In mixed forests, teak is almost absent but most other associates predominate. There are some pure patches of Khair (Acacia catechu), Bhirra (Chloroxylon swietenia) and Saja (Terminalia tomentosa). About 55 percent of the area of
the WLS bears teak forests and the remaining 45 percent mixed forests. Bamboo (*Dendrocalamus strictus*) is found in about 24 percent area overlapping with the above two types. The forests adjoining villages are degraded while these are better and dense in interior.

**WILDLIFE**

A large variety of wildlife is found in the wildlife sanctuary. Many of the precipitous hill slopes and tops contain series of caves and rock shelters some of which contain prehistoric rock paintings. Some precipitous hills have cliffs, have large rock blocks and talus at the base. This unique feature is providing shelters to various animals like vultures, reptiles and small mammals. The carnivores are tiger, panther, wild dogs, hyena, jackal and fox and the herbivores include chital, Sambhar, blue bull, four horned antelope, langur, rhesus monkey and wild boar. The omnivore bear is also seen often. Smaller animals like, squirrels, mongooses, gerbils, porcupines, hares, etc. are of common occurrence. Among reptiles, important species include different kinds of lizards, chameleons, snakes, etc. Among snakes, cobra, python, viper, krait etc are common. More than 150 species of birds are also seen here. A few to mention here are common babbler, crimson breasted barbet, bulbul, bee-eater, baya, cuckoo, kingfisher, kite, lark, Bengal vulture, sunbird, white wagtail, crow pheasant, jungle crow, egrets, myna, jungle fowl, parakeets, partridges, hoopoe, quails, woodpeckers, blue jay, dove, black drongo, flycatcher, flower-pecker, rock pigeon etc.

The area is claimed to have good potential to be developed into a tiger reserve. The herbivore population is comparatively poor which needs to be encouraged by providing proper habitat for these animals.

**MANAGEMENT**

The sanctuary is managed by a superintendent with four range officers and about 100 field staff for protection and development. The main function is to protect the area from illicit felling, illicit grazing by cattle, poaching and
encroachment. There are 26 villages inside the sanctuary. Another 109 villages situated around the sanctuary are also dependent for their day needs on the biomass resources of the WLS.

The main constraint of management is illicit grazing by the cattle of surrounding villages. About 20,000 heads of cattle from in and around villages graze in the area. Illicit felling of timber, firewood and bamboo, poaching and encroachment in the forest area are other problems. Forest fire is major problem in the summer. Ratapani WLS is about 70 km long and about 15 km wide; at places width is only about 10 km which makes the WLS susceptible to intensive biotic pressure in most of its area. Due to this, a large number of wild animals frequently enter human habitats.

TOURISM

Tourists, mostly from Bhopal visit the sanctuary especially during daytime on holidays and weekends. Wildlife sightings are not very good but people can see chital, sambhar, blackbuck, langur, peacock, wild-boar, etc. Also there are many places of historical, archeological and scenic interest. Some of these places are listed below:

1. Bhembaitka- this place is 8 km from the Obedullahgunj on Bhopal-Itarsi road. The place is said to have been used by Pandavas while in exile. Rock paintings of ancient times in Bhembaitka attract a large number of tourists.

2. Delawari- Delawari is 20 km from obedullahgunj on Bhopal- Rehti road. The place provides sylvan surrounding and is popular among picknickers. There is Forest Rest House (FRH) at this place.

3. Ginnorgarh Fort- Located on a hill, the fort is about 25 km inside the forests. It is about 600 years old and provides evidences of the prosperity of the then Gond kingdom. Most parts of the fort are still intact which show the art and culture of that time. There are 5 tanks and 15 large wells (Babadiya), some of them still store water. The place is ideal for trekking.
4. Old Military Camp
5. Ratapani dam
6. Kairi Mahadeo

The number of visitors visiting the Delawari Destination site and also the WildLife Sanctuary (WLS) during the last few year records has been mentioned in Annexure-III.

Although the visitors are coming to the sanctuary, but as per the data the visitation rate is not commensurate to the tremendous potential, the WLS owns. The majority of the visitors visit the Bhembaitka (an archeological world heritage) and Delawari. The numbers of visitors visiting other places mentioned above are very poor. But as per the management plan of the area the proposals for the developmental works for effecting habitat amelioration, creation of water holes, construction of buildings, road and watch towers, providing facilities for visitors and organizing research and monitoring etc, have been proposed.

**Delawari Destination site:** Out of the four ranges in Ratapani WLS, only Delawari destination site is selected for conducting the assessment study due to the following reasons (Viz, Convenient sampling):

- Delawari is the highest tourist receiving range among all the four ranges. Also tourist infrastructure (although not enough) are present here like interpretation hut, staying facility, staff for guiding the visitors, picnic spots etc.
- Most of the tourist attractions site is in the Delawari destination site.
- It is on the way to the other sites selected for the study overall. Therefore, the cost and time expense on the overall study is reduced.

**6.2. BHEMBAITKA**
Surrounded by the northern fringe of the Vindhyan ranges, Bhimbetka lies 46 km South of Bhopal. In this rocky terrain of dense forest and craggy cliffs,
over 600 rock shelters belonging to the Neolithic age were recently discovered. Here, in vivid panoramic detail, paintings in over 500 caves depict the life of the pre-historic cave-dwellers making the Bhimbetka group an archaeological treasure, an invaluable chronicle in the history of man.

Executed mainly in red and white with the occasional use of green and yellow, with themes taken from everyday events of eons ago, the scenes usually depict hunting, dancing, music, horse and elephant riders, animals fighting, honey collection, decoration of bodies, disguises, masking and household scenes. Animals such as bisons, tigers, lions, wild boar, elephants, antelopes, dogs, lizards, crocodiles, etc. have been depicted in some caves. Popular religious and ritual symbols also occur frequently.

The superimposition of paintings shows that the same canvas was used by different people at different times. The drawings and paintings can be classified under seven different periods: Period I - (Upper Paleolithic), Period II - (Mesolithic) (Comparatively small in size, the stylized figures show linear decoration of the body. In addition to animals, there are human figures and hunting scenes, giving a clear picture of the weapons they used barbed spears, pointed sticks, bow and arrows. The depiction of communal dances, birds, musical instruments, mother and child, pregnant women, men carrying dead animals, drinking and burials appear in rhythmic movement.), Period III - (Chalolithic) (Similar to the paintings of Chalolithic pottery, these drawings reveal that during the period, the cave dwellers of this area had come in contact with the agricultural communities of the Malwa plains and started an exchange of their requirements with each other.), Period IV & V - (Early History) (The figures of this group have a schematic and decorative style, and are painted mainly in red, white and yellow. The association is of riders, depiction of religious symbols, tunic-like dresses and the existence of scripts of different periods. The religious beliefs are represented by figures of yakshas, tree gods and magical sky chariots.), Period VI & VII - (Medieval)
(These paintings are geometric, linear and more schematic, but show degeneration and crudeness in their artistic style.)

6.3. **Bhojpur (Archeological, Historical and Religious)**

Founded by the legendary Parmar King of Dhar, Raja Bhoj (1010-1053), and named after him, Bhojpur, 28 km from Bhopal, is renowned for the remains of its magnificent Shiva temple and Cyclopean dam.

The temple, which has earned the nomenclature of the Somnath of the east, is known as the Bhojeshwar Temple. The temple was never completed and the earthen ramp used to raise it to dome-level still stands. Had it been completed, it would have had very few rivals. As it is, even with the ravages of time, it remains one of the best examples of temple architecture of the 11th - 13th centuries.

The lingam in the sanctum rises to an awe-inspiring height of 7.5 feet with a circumference of 17.8 feet. Set upon a massive platform 21.5 feet square, and composed of three superimposed limestone blocks, the architectural harmony of lingam and platform creates a superb synthesis of solidity and lightness.

**Visitation:** The visitation record to the Bojpur is not available, as the records of the number of visitors to the site are not recorded. But according to the unofficial sources and through the discussion with the locals and the staff at the site it is predicted that the destination carries the huge number of visitors’ influx every year. It is assumed that the annual average influx of the visitors’ to the site is 2.5- 3 lakhs approximately with lots of visitors at the time of fair and festival periods.

6.4. **SANCHI**

Located on the foot of a hill, Sanchi is just 46 kms from Bhopal. Sanchi, a small town, is a religious place with historical and Archaeological significance. Sanchi is a site for the numerous stupas which were built on a hill top. The place is related to Buddhism but not directly to the life of
Buddha. It is more related to Ashoka than to Buddha. Ashoka built the first stupa and put up many pillars here. The crown of famous Ashoka pillars, with four lions standing back to back, has been adopted as the national emblem of India.

Sanchi adopted Buddhism which replaced the prominent Hinduism. But time took its toll and slowly both the stupas and the place were forgotten. In 1818 Sanchi was rediscovered and it was found that the marvelous pieces of structure were not in good shape. Gradually historical and the religious significance of the place was recognised. Restoration work of the stupas started in 1881 and finally between 1912 and 1919 these were carefully repaired and restored. It is accepted that the structure at Sanchi is the most organized construction which went into the engineering of temples in the medieval period. The carvings here are done with the precision of Jewellers.

Despite the damage and restoration work done, Sanchi is the most evocative and attractive Buddhist site in India. Sanchi is primarily a place of *Stupas* and pillars but the gorgeous gateways add grace to the place. These gateways are beautifully carved and carry scenes from the life of Buddha or Ashoka. These gateways are the finest specimens of early classical art, which formed the seed bed of entire vocabulary of later Indian art. The images carved on the pillars and the *stupas* tell moving story of the incidents form the life of Buddha.

**SIGHTSEEING:**

**Stupas** - Sanchi has been famous for the Stupas which are built on the top of a hill. The purpose of these *stupas* is mostly religious. The most likely use of the *stupas* has been said to keep the relics. Some of these *stupas* have been found containing relics of disciples of Buddha. The Stupas are made of stone bricks. They were built in the 3rd century B.C. Though most of the *stupas* are in ruins now, three remain intact and are of great archaeological value. The designs and the carvings on the walls and gates of these *stupas* spell a heavenly grace and are very tastefully done.
The Four Gate Ways - The Four gateways constructed in 35 BC are the best from of Buddhist expression one cannot find any where in the world. Gateways or Torans, as they are called, are covered with explicit carving which depicts scenes from the life Buddha and Jatakas, the stories relating to Buddha and his earlier births. At this stage Buddha was not represented directly but symbols were used to portray him. The lotus represents his birth, the tree his enlightenment, the wheel, derived from the title of his first sermon, the footprints and throw symbolising his presence. The carvings on the Torans are done with inspired imagery which in harmony with the surrounding figures balances the solidity of massive stupas.

The Ashoka Pillar - The Ashoka pillars are among many of the pillars which are scattered in the area. Some of these are in broken and some are in proper shape. The Ashoka pillar is on the southern entrance. Today here only the shaft stands and the crown is kept in the museum. The crown is the famous four lions which stand back to back. This figure is adopted as the national emblem of India. The Ashoka pillars are an excellent example of the Greco-Buddhist style and are known for the aesthetic proportions and the exquisite structural balance.

The Buddhist Vihara - The earlier monasteries were made from wood which were exquisitely carved and tastefully decorated. The present monasteries are not even the shadow of what they were in the past. A few kms from Sanchi are the relics of the Satdhara Stupa. The relics are kept in glass caskets which are placed on the inner sanctum of the modern monastery.

The Great Bowl - Sanchi had a huge bowl carved out of single rock. Grain was stored in this bowl and it was distributed among the monks in Sanchi.

The Museum - The archaeological survey of India maintains a museum which stores many items which were discovered during the excavation of Sanchi area. Most prized possession of the museum is the lion crown from Ashoka
pillar. The museum has a sizeable collection of utensils and other items used by the monks who lived here.

Sanchi is known for its Stupas, monasteries, temples and pillars dating from the 3rd century B.C. to the 12th century A.D. The most famous of these monuments, the Sanchi Stupa 1, was originally built by the Mauryan Emperor Ashoka, the then governor of Ujjayini, whose wife Devi was the daughter of a merchant from adjacent Vidisha. Their son Mahindra and daughter Sanghamitra were born in Ujjayini and were sent to Sri Lanka, where they converted the King, the Queen and their people to Buddhism.

**Visitors Influx**
The visitation rate to the Sanchi as per the records from the Madhya Pradesh Tourism Department as per year 2003-04 stated that total visitors influx of 81,578 (Indian visitors 69619 and foreigner visitors 11959)

**Existing Accommodation at Sanchi:**
The existing accommodation facilities are very good as the Sanchi holds a good flow of foreign tourists to the site. Various tourism assets essential for the tourism are presented at the site like hotels, bars, restaurants and other accommodation facilities. The Sanchi have travelers’ lodge, Circuit house, Rest house (PWD), and Rest houses of Societies.

**6.5. SALKANPUR TEMPLE (Tehsil- Budni) (22°49″ N; 77°36″ E)**
It is located on an 800 Feet high hillock, in the village Salkanpur, 70 Kms from Bhopal. The deity, *Maa Durga Beejasan* is held in high esteem by the followers and locals. Salkanpur is a small village in Budni Tehsil, situated at the foot of Vindhyan Hills. The temple is dedicated to goddess Salknadevi, a top a steep hill which is reached by ascending a series of steps numbering 990 (District State Gazetteer). The place is about 8 kms from Rehti, connected by road, on which buses ply regularly.
The village is known for its commercially important religious fair, held in January and February. It is visited by thousands of persons during the period of 15 days and transactions worth a few lakhs of rupees takes place (District State Gazetteer). The village contains a primary school and covers an area of 632 hectares. In 1901, its population was only 69 which increased to 373 in 1971 and now according to the 1991 census it is 887. The other major attractions near Salkanpur are Ginnorgarh fort, Delawari and Kolar Dam.

6.6. KERWA CATCHMENT AREA
Kerwa region endowed with scenic and aesthetic values, is in close proximity to the concrete jungles of Bhopal. The area is close to Van Vihar National Park and has a tremendous tourism potential and has also an impact on the socio-economic condition of the villagers.

LOCATION:
Kerwa region is spread over an area of 50 sq kms. Limited within the north Latitude N 23 18’ and longitudinal E 77 20’ Kerwa region lies with Mendora, Mendori, Sarotipura, Kekeriya, Ransundriya, Bhanpur, Daulutpur and Chichli villages. Bhopal station is 22 km and Habibganj station is 18 km from the area. The entry points in Kerwa region are from Kolar road, Rai Gas agency side.

FORESTS
The forests found here is Tropical Dry Deciduous forest, with teak plantations.

WILDLIFE
Region holds a variety of wildlife. Different species of carnivorous and herbivorous are reported from this area. Wildlife visibility is not good but people can see peacocks, langurs etc.

WATER
The position of water availability is not good during pinch period. Many nulas flow from July to November. The river in the region is Kerwa River, which originates from Kerwa dam and flows to Mandideep. It holds water in pools in summer.
TOURISM
Tourists (Visitors), mostly from Bhopal visit the Kerwa region mainly in daytime on Sundays and Holidays. There are many spots of historical, archeological and scenic interest. But at present they are neither preserved and the attempts to showcase these to the tourists have also been very poor. Hence all tourists arriving are picnic makers, not hardcore wildlife enthusiasts, but few being adventure sports lovers. The influx of the visitors is also not as satisfactory to the region as the potentiality it has. It is estimated that the total number of visitors arriving at the place is approximately 80,000 annually. The majority of the visitors arrive here at the rainy period while, minimum during the summer season due to the non- availability of the infrastructure to attract tourists to the area. Although the area has lots of places of tourists’ interest nearby, but these are not fully explored. Some of the spots to mention are Dam area, Sarotipura cave temple, Pathankot cave paintings, Reechan Khoh, Babajhiri Religious centre, Nursery area and Small Dam.

Region’s Natural Resources
Kerwa region has a Dam area, Kerwa Reservoir, Forest Area with number of species of trees and shrubs, rich wildlife, Natural beauty and rock shelters. Paintings in the cave, which may belong to Neolithic age, depict the life of the prehistoric cave dwellers. The natural resources inside the park are being threatened, the water of Kerwa stream is being polluted, prehistoric cave paintings are being destroyed, deforestation is taking place in the forest area, natural vegetation is being disturbed by littering of plastics and waste by the tourists and by the cooking in the area. Kerwa area is a major attraction for the tourists because it serves as a picnic spot with the scenic beauty. At present no attempts have been made to quantify the impacts of tourism on these resources.