

## **Chapter - 04**

# **HISTORY OF PAST MANAGEMENT AND PRESENT PRACTICES**

### **4.1 Conservation History**

#### **4.1.1 The Central Indian Highlands**

The Central Indian Highlands, part of the tableland which forms the main peninsula of India, are wide undulating plains separated by flat-topped hills, with the Vindhya mountain in the north and the Satpura in the south sprawling around 500 sq. km. across the State of the undivided Madhya Pradesh. The mountain chains join the Chota Nagpur Plateau of Bihar in the east, stretching well into the States of Gujarat and Maharashtra in the west. This geographical sub-region holds extensive, though fragmented, forest belt and may well account for nearly half of the total forests and wildlife habitats in India. The highlands hold the sources of several of the important Indian rivers.

#### **4.1.2 Gondwanaland, Gondwana & its Aborigines**

The geological significance of this tract was first brought to light by an Austrian geologist, Aduard Suess (1831-1914) in his most famous work "The Face of the Earth". He put forward the theory that a huge hypothetical landmass, a super-continent, which he named "Gondwanaland", after the region in Central India that displays the typical geological features of the Permian and Carboniferous periods, shared by all four continents corresponding to the above periods, was in existence in the Paleozoic era. Around 165 million years ago, this super-continent included Australia, Antarctica, Southern New Guinea, Africa, South America, and India. The Plate Tectonics theory suggests that this landmass was carried on Plates that began to move, and the landmass got fragmented over time into the present formation of continents.

The Gondwana, or the "land of the Gonds", a historic region in Central India covering Pench Tiger Reserve, comprises parts of Madhya Pradesh, Andhra Pradesh, and Maharashtra states. The present Gondwana tract is basically named after the inhabitants of the principal ethnic tribe Gond. Anthropologically, the Gonds of the region are Proto-Australoid, having a supposed racial affinity with the aborigines of Australia, and belonging to the Dravidian stock of Asian origin. The majority speaks the Gondi, an unwritten language of the Dravidian family. A considerably large part of settlements were formerly of little permanence, cultivation, even though practiced with plows and oxen, involved frequent shifting of fields and clearing of new tracts of forest land. The Gond practices an animistic religion that centers in the cult of clan and village deities, together with ancestor and nature worship.

### 4.1.3 Brief Past History

Pench Tiger Reserve forming part of the Gondwana tract was inhabited by main aboriginal tribes the Gond, forest dwellers and skilled woodsman practicing shifting cultivation on all possible topographical features & exploiting all types of forest produce for their sustenance and livelihood.

In ancient time this area has reference during the rule of Bakatak & Guptas. The area was under the control of Kalchuries of Tripuri and Gonds kingdom. In seventeenth century, the Gond Kingdom of Deogarh ruled over the plateau region of the Satpura. The first Gond king was *Jataba*, who built the Deogarh fort and formed the dynasty. The offspring of Jataba, the Bakht Buland ruled the Satpura plateau as well as Nagpur plains in 17<sup>th</sup> AD. During his reign, the villages were scattered in the fertile valleys amidst a vast stretch of forests. Prince Bakht Buland, later owed the services of Mogul emperor, Aurangzeb. On his return from Delhi, he set about the development of his own territories. Industrious people from all quarters were attracted to this region and the Nagpur country received a great infusion of cultivators and artificers. A large number of villages came up as agriculture land. That was a period, when large areas of forests were cleared for cultivations and establishment of villages.

In 1743, the power passed into the hands of the Maratha Chief, Raghuji Bhonsle of Berar, who had intervened in the distensions among the contending claimants to the throne of Deogarh.

After a serious clash between the *Marathas* and the East India Company in 1803, the areas after a period of anarchy, came under the British Administration in the year 1818. Considerable abandonment of land and emigration took place during this interval.

The forest was thrown open to contractors on royalty system. Teak being the only timber of utility was heavily exploited. Shifting cultivation was a common practice; large area of forest gradually vanished under the axe and fires of the cultivating tribes. Another factor, which caused tremendous damage to forests, was the demand for railway sleepers. Indiscriminate felling was undertaken to meet this demand. Large portion of the felled timber was burnt in summer fires, as the railways rejected most of the felled timber.

In 1862 captain J. Forsyth of Bengal Lancer succeeded Sir Richard Tamp as the second Chief Commissioner of Central Provinces, formed in the year 1851. He extensively toured this area with a view to assess the potential of these virgin forests.

Colonel C.F. Pearson was posted as an officer-in-charge Armed Police at Seoni in the year 1858. According to him –

"Except for contractors there was no necessity for any license for cutting the wood. Every Gond was having an axe and numerous logs were lying cut every where in the forest which were partly or fully destroyed by summer fires every year". Colonel Pearson felt the need for conservation of the forest wealth through establishment of separate department. He submitted a report to this effect to the Chief Commissioner.

Some measures to put an end to destruction of forest was adopted only after 1862, when colonel Pearson, the then In-charge of the armed police, stationed at Seoni, was appointed first Conservator of Forests for Sagar and Harda tract which included Seoni, and Chhindwara areas.

The first task taken up by colonel Pearson and his two assistants was to collect the burnt logs and transport them to sale depot, whose sale price provided the first budget for the year, 1861-62.

The first Inspector General of Forests of India Dr. D. Brandis toured to this area in the year 1863 with Colonel Pearson covering PENCH Valley areas upto Alikatta and further across to Kuraighat and Wainganga catchment. He decided basic policies regarding forest conservation. The first step taken was the demarcation of reserve forests, fire protection and moderate attempt to tap the forest wealth to increase government revenue.

In the year 1862, "Waste land management rules" were enforced, under which cutting of teak, Bija, Saja & Shisham was forbidden without the permission of the Dy. Commissioner, However, other species were allowed to be cut on payment of commutation fees.

In 1865, the forests of the province were divided into forest divisions and Chhindwara was included in the Seoni division, which was divided into two ranges. The first Government (forest) Act was passed in the same year.

### **Early Reservation Periods: -**

In the year 1889, the forests were declared reserved by Government's notification no. - 917-C and 917 G; dated 24<sup>th</sup> February 1889. At first the forests were divided into A and B classes. Most of the B class forests, later were brought under cultivation. Only the remote forest areas were reserved. Most of the wasteland and scrubs forest, located adjoining the villages were left unreserved. The general policy was to allot each village, an area of wasteland limited to twice the area of land under cultivation.

Grazing and nistar rights were generally unrestricted. The only restriction was the absolute reservation of a few important tree species. This restriction was limited to Teak, Aonla and other fruit bearing trees. The earlier system of shifting cultivation continued even after the reservation. Later on, a system of license was introduced, which allowed the license to carry out selective felling of best stumps of valuable species, leaving malformed and unsound stock in the forest.

Fire protection measure was introduced after reservation. The forests were surveyed and mapped between a period 1887 and 1896 and declared as reserve forests between the years, 1889 to 1909.

Since 1896 onwards, the forest of these areas were worked under various Working Plans under different silvicultural systems. The main aim of most of the Plan was to enhance government revenue then to restock the already degraded forests. The main

valuable tree in the area was teak & the main aim of management was to increase the composition of teak to increase the revenue.

### **Past history of Wildlife Management**

The earliest references available on Deogarh Kingdom of the sixteenth century describe it as an area extremely rich in game, both in variety and number. *Ain- e- Akbari* makes a mention of wild elephant living in the lower Pench Valley. But as the later records of eighteenth and nineteenth century have given no such indication, it appears that elephants become extinct locally by the turn of seventeenth century.

The book "Camplife in Seoni" by Sterndale, which describes a period between early to middle seventeenth century also, indicates the richness of this area in a variety of wild animals. But later records of early twentieth century reveal that in general the forests were not well stocked with game and afforded comparatively poor facility for sport.

The Cheetah and the Hard- ground Barasingha, once reported to have lived in this area, become locally extinct-long ago.

The rapid decline of the fauna, noticeable during less than a century, is attributable to extensive clearing of forests for fast moving vehicles. Sophisticated weapons came into play, leaving little chance of survival to the wild animals and as a result, their depredation continued undeterred.

#### **4.1.4 Protection and past management**

Wildlife received no mention in the first National Forest Policy. The first Wild Birds and Animals, Act was passed eighteen years after the reservation in 1877, which was replaced by a more comprehensive legislation in the year 1912.

Shooting in the reserve forests was regulated in accordance with the Central Provinces Shooting Rules under section 26 (1) and 76(d) of the Indian Forest Act 1927. The C.P. Game Act was amended in 1937 and 1939 followed by the C.P. Game Rules there under.

The above rules governed shooting inside the reserved forest only. The Arms Act was applicable in areas outside reserved forests, under which all licenses for weapons were issued. The license holders were permitted to shoot animals, as regulated in the Indian (Forest) Act, 1927 and the C.P. Game Act of 1935. But due to the lack of proper infrastructure for enforcing the laws and also due to a general callousness towards lives of wild animals, these laws and rules were not strictly enforced, resulting in considerable decline in wild fauna by the middle of the present century. Later the National Forest Policy of 1952 emphasized need for protecting the wild fauna, recommending legislation of specific laws and preservation of rare fauna by setting up Sanctuaries and National Parks. It also recommended several steps to create public awareness, as well as to regulate the export of animal's articles. Many fresh laws and rules were enacted thereafter, some of them are: -

- (i) Indian Forest (Madhya Pradesh Amendment) Act of 1955.
- (ii) The Madhya Pradesh National Park, Act of 1955.
- (iii) Madhya Pradesh Game Rules, 1912 framed under Indian Forest Act.
- (iv) Madhya Pradesh Shooting in forest (Hunting, Shooting, Fishing, Poisoning water, Setting traps or snares in reserved or protected forests) Rules, 1963, framed under Indian (Forest) Act, 1927.
- (v) The Arms Rules 1962 framed under India Arms Act 1859.

Under the Shooting Rules of 1963, the divisions were divided into shooting blocks and notified in October every year, as wholly closed (under rule 2(i) or closed for shooting except under permit issued by Divisional Forest Officer. In the latter type of blocks, total heads of each species allowed to be shot during the year and maximum number allowed in each permit was also notified. Some royalty was fixed for each type of game.

Records of permits issued and animal shot since 1940 to 1972 in Seoni division is given in following table.

**Table No. - 20**  
**Number of animals shot**

Year	No. of permits issued	Tiger	Bison	Panther	Wild boar	Sambhar	Cheetal	Other deer	Total
1949-50 to 1963-64	314	42	10	40	90	58	55	90	385
1964-65	10	4	-	8	4	2	6	1	25
1965-66	12	6	1	11	6	10	6	2	42
1966-67	13	10	4	6	7	3	6	5	41
1967-68	22	5	1	6	5	15	9	3	44
1968-69	23	2	1	4	5	8	7	-	27
1969-70	16	3	-	9	18	10	9	-	49
1970-71	18	-	1	-	-	-	4	-	5
1971-72	-	-	-	-	-	-	-	-	-

Although the number of game heads shot annually under permit was low the number actually destroyed by poaching must have been far too large despite the existing laws. In absence of an effective law enforcing machinery the destruction of wildlife continued unabated.

With the enactment of the wildlife protection Act 1972 by the parliament, gradually some discipline came into the wildlife protection efforts. The strict rules and statutory provisions generated some different effect on the public as well as the law-enforcing agency.

In the year 1977, an area of 449.392 sq. km. was notified as Pench Game Sanctuary. This area covered about 257 sq. km. of South Seoni Division and rest of the East Chhindwara Division across the Pench river. Similarly, the Maharashtra Government declared an adjoining area of 257.5 sq. km. as Pench National Park. A separate wildlife wing was setup in the Forest department headed by a Chief Conservator of Forest (Chief Wildlife Warden). These were the first sincere efforts towards protecting the fauna and forests of this area. Under the canopy of Wildlife (protection) Act 1972 and the Madhya Pradesh Wildlife Rule (1974) made there under, the Sanctuary staffs were assigned with a specified task of protecting the fauna and forests within the Sanctuary limits. Various rules and regulations regulated the entry and movement within the Sanctuary. It also envisaged regulation of forestry operations, use of waterholes, regulation of Minor Forest Produce collection, regulation of grazing and strict fire protection as well as registration of all arms license- holders within a radius of ten kilometers from Sanctuary boundary.

Later on in March 1983, the Government of Madhya Pradesh notified its intention to constitute an area on 292-85 sq. km. as the Pench National Park. This area had been carved out of the pre-existing Pench Sanctuary. The first Director to manage the Park area was posted in July 1984.

The Pench Sanctuary was finally notified in the year 1998. The National Park & Sanctuary were renamed as Indira priyadarshini Pench National Park and Pench Mowgali Sanctuary in the year 2002. The National Park was finally notified in the year 2005 as Indira Priyadarshini Pench National Park.

An area 757.897 sq. km, including of 346.733 sq. km. area of the adjoining Forest Division was included and named as Pench Tiger Reserve in the Year 1992 under Centrally Sponsored Scheme Project Tiger.

#### **4.1.5 Important Events**

- Relocation of villages by Forest Department and Irrigation department.
- Construction of Meghdoot Reservoir
- India Eco development Project (1987 - 2004)
- Deployment of Ex-army personals to help local staff in their day-to-day protection measures.
- Declaration of Critical Tiger habitat

## **4.2 Habitat Management**

### **4.2.1 Habitat Management**

During the implementation of past management plans following intervention were taken to improve the habitat. (The detail is given in **Annexure No. – 25 A, B & C**)

#### **4.2.1.1 Grassland Management**

Chhediya and Alikatta two Relocated village were taken under grassland management. The main point of the grassland management are as follows –

- Erection of ex-closure
- Weed Eradication
- Uprooting of woody advancement
- Rotational Control Burning

#### **4.2.1.2 Weed Eradication –**

Obnoxious weeds like Lantana, Chirota, Van tulsi etc. were removed.

#### **4.2.1.3 Fire Protection –**

Strict Fire Protection measures were taken.

#### **4.2.2 Water Management**

**4.2.2.1 Soil and Moisture Conservation** – Loose boulder check dams were constructed for Soil and Moisture Conservation.

**4.2.2.2 Check dams and nala bunding** - Creation of series of Low height earthen Check dams on nalas/streams to prolong the availability of water.

**4.2.2.3 Construction of tanks** – To provide permanent solution for water supply in water deficient area, a network of small tanks were created.

**4.2.2.4 Hand pumps** – To provide safe drinking water to camping staff and safe and properly maintain water supply to animals, hand pumps were erected at ecologically and strategically important places.

**4.2.2.5 Construction of Dykes** – Dykes were constructed in the submergence area to store some receding water from stream beds.

**4.2.2.6 Control on illegal grazing** –

Strict protection measures were taken to protect the habitat from illegal grazing. Game Proof Wall was constructed to protect the farmer's crop from wildlife and forest area against grazing by domestic cattles.

## **4.3 Protection and Intelligence gathering**

### **4.3.1 Rights and concessions:**

No right has been recognized in the Park & Sanctuary Area, except the right of fishing of 305 fishermen, which has been acquired. So as on today there are no rights inside the National Park and Sanctuary.

### **4.3.2 Illegal activities:**

The Pench Tiger Reserve is known to have adopted a protectionist attitude for a long time, with its reliable communication system, strategically placed camps and intensive patrolling by the ever-vigilant staff. This has resulted in an appreciable increase in wildlife population and intrusions / encroachments are well under control. However sporadic cases of poaching of herbivores, fuel-wood collection for nistar, grazing and removal of Minor Forest Produce are severely dealt with under the appropriate Acts.

#### **Poaching:**

Indiscriminate hunting by local people and traditional hunting existed before the area was declared as National Park and Sanctuary. Stray incidents of poaching by local people for sport and livelihood is still continue in the adjoining area of the PA. Looking in to the past record of offences though scattered and very rare, organized poaching of Tiger & Panther for clandestine is a threat around the Reserve.

People living around Pench Tiger Reserve and having legal and illegal crop protection guns were the instruments behind poaching. A nomadic community called Paradhi is involved in poaching by Traps. Electrocuting, Poisoning and chasing by trained domestic dogs, are also prevalent methods of poaching.

#### **Illegal cutting of trees:**

This area has been a rich intact forest. In the past, there was illegal extraction of timber, like: Teak on a large scale. There was good market for this timber in Nagpur, Jabalpur, Chhindwara and Seoni and outside the region. After the declaration of National Park and Sanctuary, illegal extraction of timbers from National Park and Sanctuary area had drastically come down. No illegal extraction on commercial scale from this Protected Area has been reported. Some illegal timber & fuel wood removal along peripheral sites near the human habitation basically for domestic requirement "Nistar" can not be ruled out despite the strict patrolling in these area.

#### **Illegal removal of Non Wood Product:**

After the declaration of this area as PA, collection of Non Timber Forest Produce has been completely banned. The local inhabitants, mainly tribal, sometimes try to collect NTFP like Mahua flowers, Mahua fruits, Tendu leaves, Chironji, Mahul leaves, Thatching grass, Bamboo & Medicinal Plants for their consumption and to sell it in the local market.

### **Illegal fishing:**

Totladoh (Meghdoot) reservoir, which is situated in the heart of the NP, is the major source of fishing. The dam came at full tank level in 1989. The fishing started in 1986-87. The Fishing Development Corporation continued fishing in this tank till 1995. In 1995, the MHFD was banned from fishing. Honorable Supreme Court of India has permitted regulated and controlled fishing for 305 identified bonafide fishermen till this Park is finally notified. Now the rights of these fisherman has been acquired and Park has been finally notified but still some stray incidences of illegal fishing are still there despite continuous protection measures.

### **Livestock Grazing:**

There are about 60,000 domestic cattle in the area of 5 Km radius from the boundary of Protected Area. Here the cattle's rearing is one of the main occupations of local people. Though there is no village inside the PA and maximum boundary with the Villages has been fenced by Game Proof Wall. So there is complete control over illicit grazing by livestock in the Protected Area, but some time, some stray cattle still get tempted by lust green grass inside the PA.

### **Fire:**

This forest tract has experienced serious fires during summer, since last many centuries. In spite of the fire protection measures prescribed in the working plans, fire protection in territorial forest divisions has never been taken seriously. Some of the forest area in both the districts burns every year during summer. Earlier, most of the fire cases had not been reported, hence no record exists as to how much area got burnt annually before 1985. However PA management has taken this task seriously. All resources are now being mobilized to prevent fires as well as to contain fires in small areas.

#### **4.3.3 Wildlife health:**

Wild animals are prone to the cattle borne diseases such as Reinderpest, Foot and Mouth disease, Anthrax and other viral and bacterial diseases. Heavy loss of Gaur occurred in 1964 due to **Reinderpest**. Mortality due to pneumonia has also been observed in the Park area. The ever-increasing population of cattle and their interference in the Park area poses a constant threat of epidemics. A systematic approach to get the domestic cattle immunized in adjoining villages is ongoing operation.

## **4.4 Tourism and Interpretation**

### **4.4.1 Wildlife Tourism**

Wildlife tourism in Pench is subordinated to the main objective of wildlife conservation. The Management believes that the visitors should be provided a meaningful exposure to the Protected Area so that they can appreciate India's magnificent natural heritage and conservation benefits.

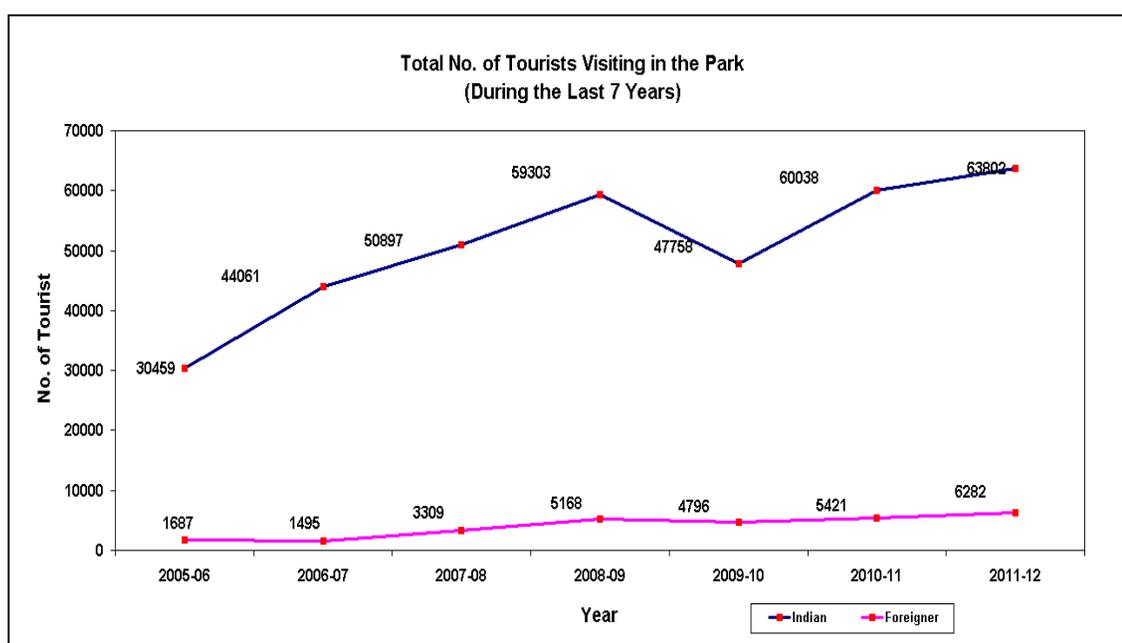
The Project Tiger objective “to ensure the maintenance of a viable population of the tiger in India and to preserve, for all times, such areas as part of our natural heritage, for the benefit, education and enjoyment of future generations” also sounds a similar note.

Wildlife tourism in Pench Tiger Reserve is a balance of conservation education and entertainment with the active participation of local people. The underlying principle is that the tourism should be ecologically and socio-culturally sustainable.

The wildlife tourism activities are restricted to a small zone, which amounts to only 36% (150 sq. km.) of the Protected Area. The average, annual tourist influx amounts to 46,000, of which almost 3.7% are foreigners. The tourist figures of the past and the graphical depictions are indicated below. At times, five to eight thousand tourists visit the park in a month (November/ December), and on holidays the number sometimes goes up to almost seven hundred per day.

**Table No. - 21**  
**Total No. of Tourists Visiting in the Park**  
**(During the Last 7 Years)**

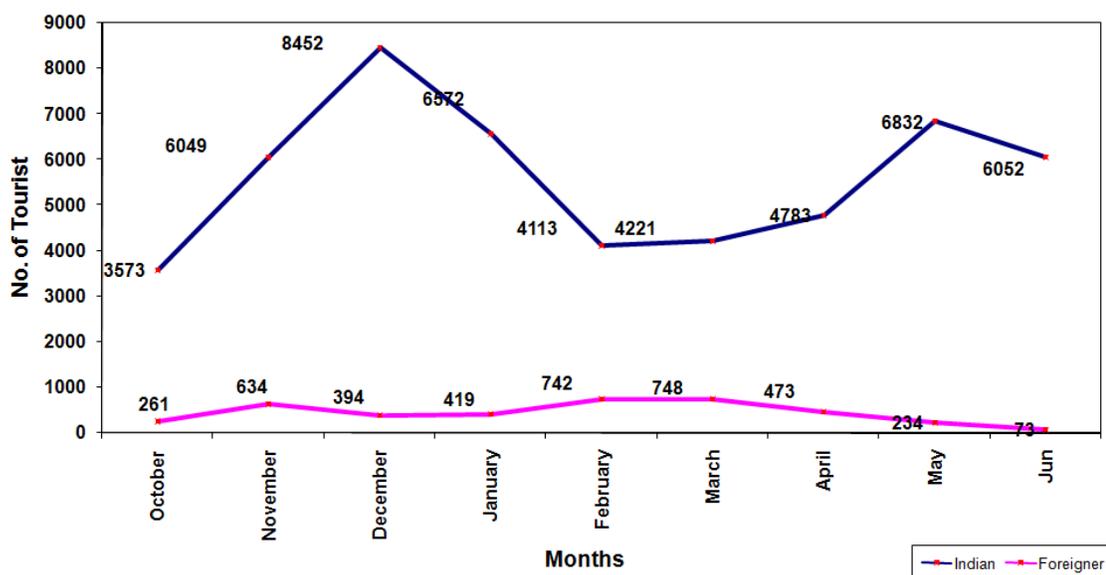
Year	Indian	Foreigner	Total
2005-06	30459	1687	32146
2006-07	44061	1495	45556
2007-08	50897	3309	54206
2008-09	59303	5168	64471
2009-10	47758	4796	52554
2010-11	60038	5421	65459
2011-12	63802	6282	70084



**Table No. - 22**  
**Month wise Average Tourists Influx in the Last 7 Years**

Month	Indian	Foreigner	Total
October	3573	261	3834
November	6049	634	6683
December	8452	394	8846
January	6572	419	6991
February	4113	742	4854
March	4221	748	4969
April	4783	473	5257
May	6832	234	7066
Jun	6052	73	6125

**Month wise Average Tourists Influx in the Last 7 Years**

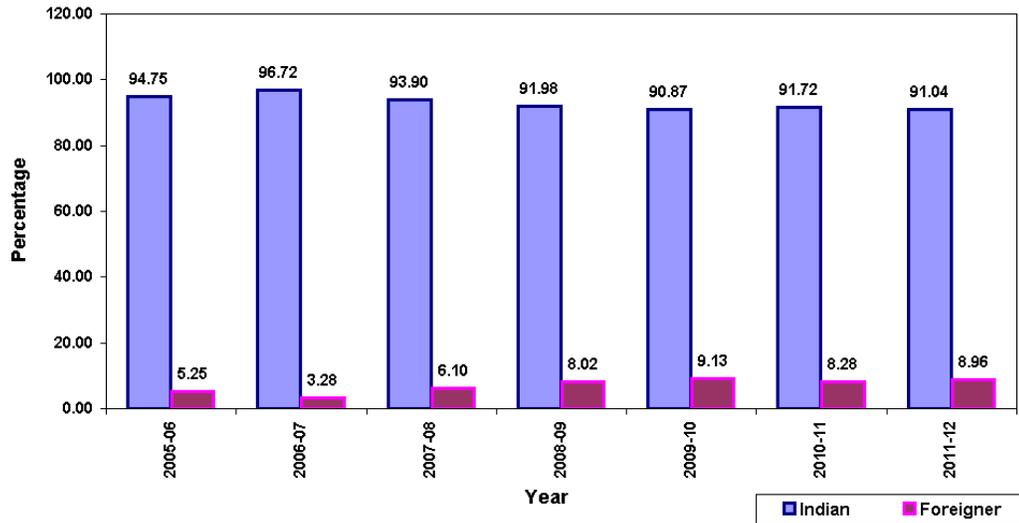


**Table No. - 23**

**Percentage of Indian & Foreign Tourists Visiting in the Park**  
**(During the Last 7 Years)**

Year	Indian	Foreigner
2005-06	94.75	5.25
2006-07	96.72	3.28
2007-08	93.90	6.10
2008-09	91.98	8.02
2009-10	90.87	9.13
2010-11	91.72	8.28
2011-12	91.04	8.96

**Percentage of Indian & Foreign Tourists Visiting in the Park  
(During the Last 7 Years)**



#### **4.4.2 Boarding and Lodging Facilities:**

Apart from the limited departmental accommodation at the two entry points (Karmajhiri & Turia), boarding and lodging facilities of the Madhya Pradesh Tourism Development Corporation Ltd. (MPSTDC) and private entrepreneurs also exist at these places. The total lodging facilities (Governmental/Non-Governmental) amount to around 844 beds per night. The detail information about boarding and lodging facilities available at Turia gate is given in **Annexure No. – 54**.

#### **4.4.3 Park Attraction and Rules:**

The Park Management provides elephants and route guides, apart from the interpretation facilities, at a nominal charge to the tourists. Entry on foot and night driving are prohibited inside the park. Only light vehicles are allowed with a route guide. Viewing ungulates from a vehicle and spotting tiger from an elephant back are star attractions for the tourists. The park has a set of rules for regulating the tourism in an around the Park the detail is given in **Annexure No. – 55**.

#### **4.4.4 Nature Tourism**

Nature tourism is also a new name for “eco-tourism”, which varies in accordance with the ecological setting and seasonal attribute of the site. The potential of eco-tourism involving local indigenous communities for their economic upliftment has been recognised in Pench Tiger Reserve. Essentially, it aims at the enjoyment of nature and an understanding of the ecology, without causing the least destruction to its support system, leading to economic benefits for the indigenous masses.

Eco-tourism is distinct from mass tourism. It is multi-faceted, having various intricate linkages with different forms of human activity, with domestic, regional and international characters. In many countries, eco-tourism plays an important role in the

shaping of national economies. The socio-economic and ecological impact of eco-tourism is relevant to a developing country like India, and it is evolving over the vicissitudes of time with new concepts and ideas.

## **4.5 Research and Monitoring**

### **4.5.1 Research & Training**

**Research:** Pench Tiger Reserve is developing to an excellent research centre due to its fauna, flora and diverse habitat. There are 3 Ph.D. theses on various aspects of wildlife in the National Park. Besides many technical papers relating to the wildlife ecology of the National Park have been published in various national and international journals. The field research activities in Pench include the following:

- Well documented description, evaluation & classification of habitats
- Data collection on population dynamics, dispersal pattern of wild animals, intra & inter-specific relations, feeding habits of herbivores & carnivores
- Ecological monitoring of weather/ physical factors
- Check-listing of flowering plants
- Check-listing of birds
- Faunal inventory
- Use of Landsat imageries & space photographs to study the habitat parameters
- Use of radio-telemetry for studying land tenure of tigers
- Study of movement patterns of encumbered tigresses using GPS/ software
- Base line mapping of PA and surrounding areas
- Environmental Education Awareness Strategy Action Plan
- Environmental Assessment of Regional Plan
- PA Level Visitor Management and Participatory Eco-tourism Study
- Process Documentation Research
- Documentation of traditional knowledge
- Study on wetland & riparian areas in PTR with diversity & status of fishes and waterfowls
- Floristic Survey, Vegetation Description, Conservation Status And Distribution of Rare and Endangered Plants/Plants Communities contributed for Herbarium

Field data including animal population figures, water distribution and availability, distribution vegetation etc collected year round. 43 transects are maintained for monitoring of habitat and census.

Intensive studies carried out include

1. Ecology of Gaur (WII)
2. Ecology of Wild-dog (WII)
3. Bird diversity (WII)
4. Faunal diversity ( In house by Subhranjan Sen and N.S. Dungriyal)
5. Floral Diversity (In house by N.S Dungriyal )

#### **4.5.2 Training:**

The staffs of the Tiger Reserve has been involved in the wildlife conservation since long. As the concept of wildlife training/ orientation courses for the frontline staff has been relatively new, internal workshops/ field technique exercises held by trained officers and resource persons were the main source of capacity building for the frontline staff. With the opening up of State-level Institutions, the staff is encouraged to undergo orientation courses. However, the already inadequate strength of staff makes the yearly training quota very small.

#### **4.5.3 Estimation of Wild Animals:**

This is one of the most important exercises carried out every year in the month of December/January in the Tiger Reserve. Needless to add, such information is essential to monitor changes in the population trends over time or among habitats, and evaluate the success of wildlife management programmes.

Though there are a number of census methods, most of them require sampling, and sampling errors can sometimes be serious. Further, the visibility problem owing to dense undergrowth leads to fewer detections, and the evasive movements of animals prior to detection also create problems.

Now Tiger Conservation Authority in collaboration with WII has developed a methodology for estimating and monitoring tiger status and habitat. As per this method monitoring will be carried out at an interval of four years.

### **4.6 Relocation of Villages**

#### **4.6.1 Village relocated by Park Management**

There were two forest villages located inside the National Park, i.e. Alikatta and Chhedia, which were shifted to Durgapur and Khairanj in the year 1992 and 1994 respectively.

The details of human population, cattle population, cultivated area, village area is depicted below: -

**Table No. - 24**

<b>Name of the village</b>	<b>R.F. Comptt. No.</b>	<b>No. of Families</b>	<b>Human population</b>	<b>Cattle population</b>	<b>Land under cultivation</b>	<b>Total F. village area (in hectares)</b>
Alikatta	585, 586, 587, 588	15	63	66	20.00	442
Chhedia	1424	24	111	91	31.60	154

#### 4.6.2 Village Relocated by Irrigation Department

Irrigation department has relocated 6 villages coming in submergence of Totladoh reservoir. The detail of relocated village by irrigation department is given in following table-

**Table No. – 25**  
**Village Relocated by Irrigation Department**

Name of the village	R.F. Comptt. No.	No. of Families	Human Population
Pyorthari	599	9	30
Sapat	583	8	30
Kandalai	581	13	50
Palas pani	R.V.	96	480
Umri ghat	R.V.	83	200
Chhindewani	1437	30	82
	Total	<b>239</b>	<b>872</b>

#### 4.6.3 Area of Relocated Villages:

The detail area statement of relocated villages by Forest Department and Irrigation Department is as following –

##### A. Relocated by Forest Department

**Table No. - 26**

S.No.	Name of Village	Area of Village in hac	No. of families	Year of Relocation	Remark
1.	Alikatta	20	15	1992-93	Relocated by National Park
2.	Chhediya	72	27	1994-95	
	<b>Total</b>	<b>92</b>	<b>42</b>		

##### B. Relocated by Pench Hydro Electric Project

**Table No. – 27**

S. No.	Name of Village	Area of Village in ha..	No. of families	Year of Relocation	Remark
1.	Pyorthari	238.545	9	Around 1990	Relocated by Irrigation Department Pench Hydro Electric Project Totaladoh
2.	Sapat	63.585	8	Around 1990	
3.	Kandalai	63.585	13	Around 1990	
4.	Palas pani	65.738	96	Around 1990	
5.	Umri ghat	34.607	83	Around 1990	
6.	Chhindewani	76.225	30	Around 1990	
	<b>Total</b>	<b>542.285</b>	<b>239</b>		

## 4.7 Administration and Organization

### 4.7.1 Core / Buffer Area Description & Administrative Control:

The Core Area of Pench Tiger Reserve is consists of National Parks and Sanctuary, Which is under the Administrative control of Field Director. The Buffer Area is formed by the Reserve and Protected Forest of South Seoni, East Chhindwara & South Chhindwara Forest Divisions adjoining to Core Area. The Administrative control of the buffer area is with concerning Divisional Forest Officers. The detail of area is given in following table.

**Table No. - 28**  
**Area Statement**

S. No.	Zone	Status	Area in sq km
1	Core	National Park	292.857
		Sanctuary	118.473
		<b>Total Core Area</b>	<b>411.330</b>
2	Buffer	Forest and Revenue Area	768.300
<b>Total Area of PTR</b>			<b>1179.630</b>

The district wise break up of area is as below:

**Table No. - 29**  
**District Wise Area Statement**

Zone	Status	Seoni	Chhindwara	Total
Core	National Park	145.568	147.289	292.857
	Sanctuary	118.473	-	118.473
		<b>264.041</b>	<b>147.289</b>	<b>411.330</b>
Buffer		500.650	267.650	768.300
	<b>Total</b>	<b>764.691</b>	<b>414.939</b>	<b>1179.630</b>

### 4.7.2 Administrative Set up

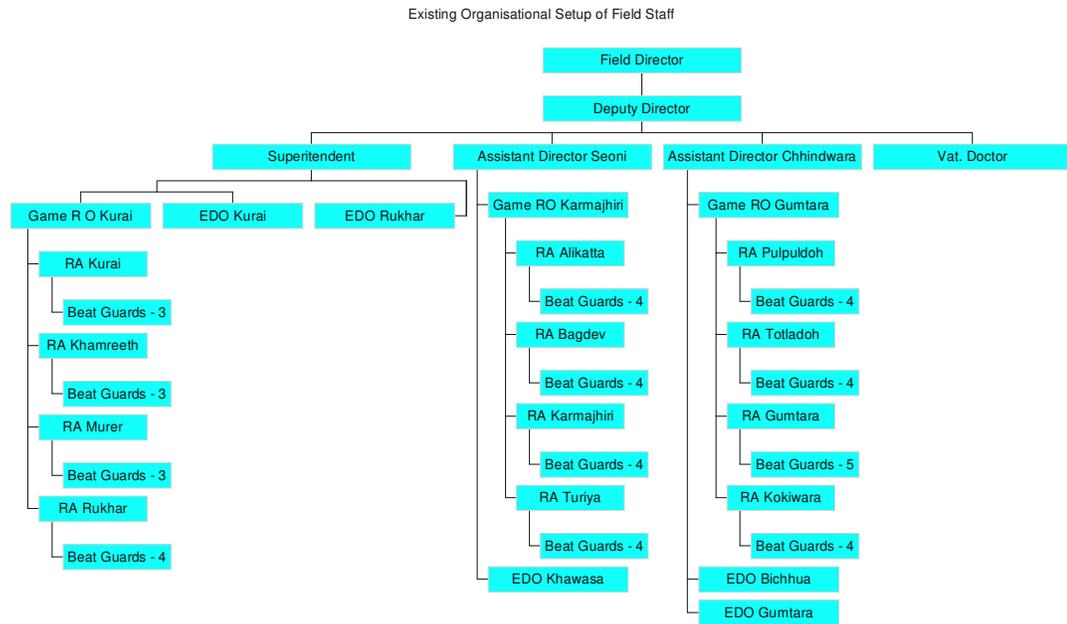
As stated above, the Core Zone i.e. National Park and Wildlife Sanctuary are under the control of the Field Director, Pench Tiger Reserve. The Deputy Director is to assist Field Director and perform the duties of DFO as per Forest Manual and other financial powers.

Pench Tiger Reserve, Seoni consists of 3 ranges viz., Karmajhiri, Gumtara and Kurai. Out of these three ranges, Kurai range belongs to the Pench Sanctuary. All the three ranges have 4 circles each. The following list depicts the existing set up.

S. No.	Range	No of Circle	No of beats
1.	Karmajhiri	04	16
2.	Gumtara	04	17
3.	Kurai	04	13
<b>Total</b>		<b>12</b>	<b>46</b>

To carry out eco development and awareness, there are five Eco-Development Units.

The detail administrative set up of Pench Tiger Reserve, Seoni is shown in following chart.



## 4.8 Land Use inside the Protected Area

### 4.8.1 Pench Hydroelectric project (Meghdoot reservoir):-

It is a joint venture of M.P. and Maharashtra states. The main dam (Maghdoot Reservoir) is located on the southern boundary of the National Park (in Chhindwara district) in compartment No. 229 C. Seventy five percent of the submergence area falls within the Park Boundary, covering 17.24 sq. km. in Karmajhiri range and 37.27 Sq. kms. in Gumtara range (Chhindwara district), remaining twenty five percent (19.93 sq. kms.) of submergence falls within the Pench National Park of Nagpur district.

S. No.	Details	Area
1.	Maximum flood level (H.F.L.)	493.60 Mt.
2.	Minimum reservoir level	464.00 M.
3.	Level at heavy rainfall (FTL)	490.00 M.
4.	Anticipated decrease in water level in the reservoir after rainy season.	2 to 3M.
5.	Maximum depth of water at (FTL)	68.10 M.
6.	Expected life span of the dam	100 Years

Construction of reservoir was started after Inter- state agreement in 1976 and consequently large labour force were temporarily settled. After completion of work, these people remained settled and started fishing in this huge reservoir. Consequently they have been posing a serious threat to the conservation efforts, done by the PA management. Now all the illegally settled work force has been rehabilitated out side the Park by Maharastra Government. Even after an arduous and hard effort, sporadic illegal fishing has been continuing in this huge reservoir.

#### **4.8.2 Bodanala irrigation tank:**

This tank has been situated in the compartment no. 594 and 613 near the outer boundary of the Park. The work of the tank was started in the year 1976. Later on in 1981 the Irrigation Department, for the construction of canal demanded an additional area (3.277 hect). The nala closure work was completed in the year 1985. Since 1986, when for the first time the tank was inundated, it has been attracting large flocks of Pintails and other migratory waterfowl as well as resident waterfowls.

#### **4.8.3 Jeerewara irrigation tank:**

This tank was constructed in the year 1982 by irrigation department in the compartment number – RF 650 of Vijayapani beat, Pench Mowgali Sanctuary. It supplies the water for irrigation. This is a shallow tank and attracts many migratory & resident birds.

#### **4.8.4 Potiya irrigation tank –**

Potiya irrigation tank is construction at the boundary of Pench Mowgli Sanctuary near the Potiya village. Some portion of submergence reaches inside the Sanctuary. It is used by village Potiya for irrigation and other Nitsar purpose.

#### **4.8.5 132 K.V. Power line-**

A 132 K.V. power line from Pench Hydroelectric Project passes along the state boundary, which forms the southeastern boundary of the Park. This state boundary is eighty feet wide and serves as fire line. The permission to establish the power line was granted by CCF (Development) M.P. in the year 1987. This line comes out through the Pench National Park, Nagpur near the boundary of compartment no. 601 and runs along the Pench National Park boundary upto compartment No. 605 and then passes into PF 117(old compartment number) of the territorial division. Yearly, M.P.E.B. demands cutting of some branches, which grow into near the transmission lines and cause power loss.

#### **4.8.6 132 K.V. Power line in Sanctuary Area-**

A 132 K.V. power line passes through the Sanctuary in compartment no. 639, 640, 654, & 656. Yearly, M.P.E.B. demands cutting of some branches, which grow into near the transmission lines and cause power loss.

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