

Exploring the Potential of ECO Tourism in Junnar Tehsil for protection of Heritage and Biodiversity

Anurag C. Doshi

*1 M. Arch. (Environmental), SPPU, Pune/DYPSOA, Charoli, Pune, Maharashtra, India

Anuragcdoshi@rediffmail.com¹

ABSTRACT

This research paper is an attempt to analyze and explore the potential of Ecotourism in Junnar Tehsil in Pune District, Maharashtra. Eco tourism is one of the most expeditious growing area of tourism which is magnetizing the tourist all over the world. It involves visiting the places which are proximate to the nature without much perturbing flora and fauna of that region. Its main purpose is to develop awareness about the ecological conservation so that there may be economic development along with the conservation of the environment. It helps the Sustainable development of rural India and gives the opportunity to tourist to get aware with ecotourism in rural areas. Junnar Tehsil in Pune District have many tourist destinations, but still this area is not yet explored as developed tourist destination. The present research paper focuses to draw attention to the potential of ecotourism and exploration of heritages places, conservation of biodiversity and making ecotourism industry as a perspective tool for economic development in Junnar Tehsil.

Keywords: Ecotourism, Heritage, Archeology, Biodiversity, Agro-Tourism

I. INTRODUCTION

Eco tourism is the most important aspect as it is concerned with environment protection. Eco tourism involves journey to tourist places where flora, fauna and cultural heritage are the primary attractions. The main objectives of ecotourism is to generate high quality Ecotourism facility along with environmental protection and strengthening the local development. The key aspect for ecotourism are involvement of local community, job opportunities and realizing the environment resources. The various aspects which need attention at actual management level for sustainable ecotourism. The strict assessment of carrying capacities, pollution free transportation managements, conservation and adaptations, design of infrastructure and control of development and Eco-

marketing strategies in tune with the benefit of local community and involvement while planning eco tourist destinations.

Responsible ecotourism programs include those that minimize the negative aspects of conventional tourism on the environment and enhance the cultural integrity of local people. Therefore, in addition to evaluating environmental and cultural factors, an integral part of ecotourism is the promotion of recycling, energy efficiency, water conservation, and creation of economic opportunities for local communities. For these reasons, ecotourism often appeals to advocates of environmental and social responsibility. [1]

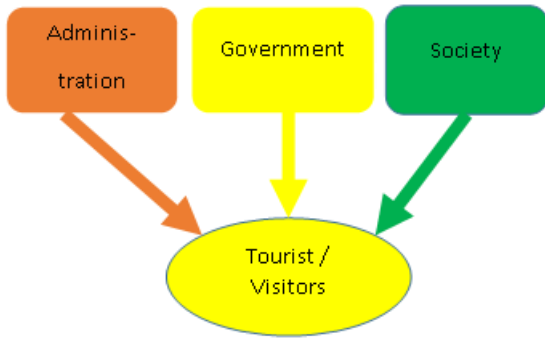


Figure 1: Responsible Tourism Model

The main elements of tourism which attracts tourist to a particular destination are: 1) Pleasant Atmosphere 2) Scenic Beauty 3) Heritage or Historical & cultural attraction 4) Accessibility 5) Adventure 6) Variety of cuisines 7) Accommodation 8) Relaxation and recreation 9) Health care facilities.

Therefore core concept of tourism are:

a) Fascination b) Easy Access c) Amenities d) Auxillary Services. Junnar Tehsil area is land of great geographical diversity, blessed with a long history of rich culture, heritage and history, nature wealth and thus possess the great potential for the exploration of tourism along with the conservation of Environmental factors. So Eco Tourism is key to satisfy the both tourism development as well as Conservation of nature by Eco Tourism. We can say it as Responsible Tourism.

II. Objective

The Objective of this research paper is to identify the potential of Eco Tourism in Junnar Tehsil for protection of Heritage and Biodiversity.

III. Study Area - Junnar Tehsil

In Maharashtra, Pune District has 14 Tehsils. Junnar Tehsil is located in the northern part of the District. The latitudinal extent of the Tehsil is 19.00' to 19.24' north and longitudinal extent is 73.40' to 74.18' east. The geographical area of the Junnar

Tehsil is 1579.84 sq.km. having 183 Villages and one urban area.[2]

The western part of Junnar Tehsil is at higher altitude which comes under region of western ghat. The highest point is harishchandragarh (1422m) and lowest height (600 m.) at south-east corner of Tehsil. The topography influences the climatic condition and result in ample rainfall ranging from 50 to 250 cm depending upon the location. The atmosphere of the Junnar region is very pleasing and it is favorable for Eco tourism. Kukadi and Meena are the main rivers flowin g through Junnar taluka region.[2] There are four Dams constructed over these rivers which support the irrigation facility in Tehsil area e.g. Pimpalgaon-Joga, Manikdoh, Yedgaon and Wadaj.The main transportation National Highways NH-60 and NH-61 are passing through eastern and northern part of the tehsil area.

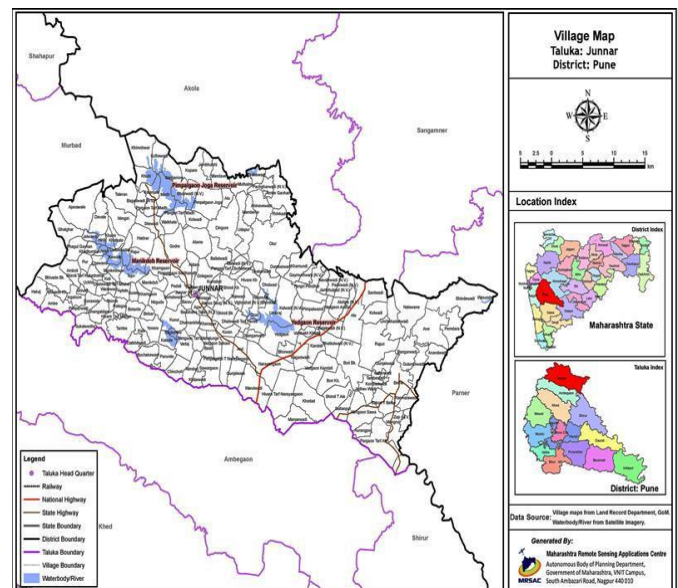


Figure 2: Junnar Tehsil map

A. Archeology

Junnar Caves are ancient rock cut caves belong to the Hinayana phase and are datable from mid-3rd century BC to late 3rd century AD. Junnar has the largest and longest cave excavations around 200 excavation taken place in india. All these evcavations are proptected by

Archaeological Survey of India(ASI) and know they are the prominent places of tourist visit all over the world. These excavations are the best architectural examples of Rock Cut Architectural Study.

In Junnar region and its surroundings, traces of early history explored particularly on the banks of Kukadi, the Ad, and the Mina and discovered evidence of the habitation of Early Historic period, found the typical pottery of the Satavahana period. The First at Kusr and the other at Nirgude to the south-west. Kusr is located to the south of Shivneri hill fort and Nirgude to the south-west. In the ox-bow curve of the kukadi near Manikdoha was located an Early Historic habitational site, but unfortunately it is now submerged in the back water of the Kukadi dam.

Junnar (19.12’N, 73.53’E) is one of the important taluka headquarters in Pune district. It is known for early historic sites. The Archaeological site at Junnar has continuous long sequence right from the Satvahana period to Muslim Maratha period. (Shinde al,2007).

B. Heritage

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1) Forts: Junnar Taluka lies in Pune district, state of Maharashtra in India. It is located in the northern side of the pune district. It was kingdom of Buddhist, Satvahana, Rashtrakuta, Chol, Yadava, Nizam, Maratha, Peshwa. Lenadri & Ozar of Astavinayak ganpatis and Shivneri Fort(Birth place of Chhatrapati Shivaji), Chawand Fort(Fort of Nizam propose for Sardar Shahaji Raje), Jivdhan Fort(murtaja), Hadsar Fort, Harichhandra Gad, Narayan Gad those are main fort, GMRT (Khodad), Vikram Sarabhai Earth Station,

Arvi and Reda Samadhi(Dnyaneshwar Maharaj) at Ale are some most important places near to Junnar. There are five main reservoir Dams in the Junnar Taluka as manikdoha, Pimapalgaon Joga, Yedgaon, Chilhewadi and Wadaj. Naneghat is the place at higher altitude & also was the ancient trade route. It is known for historical evidences which has been written in Bramhi Lipi on the walls of caves and also for its scenic beauty and rockoutcrops.

TABLE I. JUNNAR TEHSIL FORTS

Sr. No.	Junnar Tehsil Forts & its Location	
	Forts	Location
1.	Shivneri	Junnar
2.	Narayangad	Khodad
3. 1	Chavand	Chavand
4. 2	Jivdhan	Ghatghar
5. 8	Nimgiri	Nimgiri
6.	Hadsar	Hadsar
7.	Shindola	Madh
8.	Harishchandra	Khireswar

2) Caves: Junnar Caves are classified into various groups depending upon the locations. They are Tulja Caves, Manmodi Group of Caves, Shivneri Group of Caves and Lenyadri group of Caves. The Lenyadri Group is the main group located 6 km north of Junnar. The hill is also variously known as Sulaiman Pahar and Ganesh Pahar. There are around 40 caves in this group of which the main group of 30 caves are located from east to west, all facing south toward the Kukadi river. Out of them them Cave No. 6 and 14 are chaityagrihas and the rest are viharas. Cave 7 is the largest having image of Ganesha. It is one of the

Ashtavinayak shrines, out of the eight prominent Ganesh shrines in Maharashtra.

The remaining are small size monasteries which has two or three cells. These caves are dates back around 1st to 3rd century AD.

Manmodi group of caves located on the Manmodi hill located 5 km south of Junnar. The monastic complex was known as Gidha-vihara (Gridhra-vihara) and the hill as Manamukuda in ancient inscriptions. This group consists of nearly 40 individual excavations excluding the cisterns. They are located in three distinct groups known as Bhimasankar group, Amba-Ambika group, and Bhutalinga group, nearly 200 m west of the Amba-Ambikagroup.[8]

TABLE III. JUNNAR TEHSIL CAVES

Sr. No.	Junnar Tehsil Caves & its Location	
	Caves	Location
1.	Amba-Ambika	Khorevasti
2.	Shivai	Junnar
3.	Tuljabhavani	Padali
4.	Vinayakleni	Leyandri
5.	Sulemanleni	Leyandri
6.	Chavandleni	Chavand
7.	Hadsarleni	Hadsar
8.	Nimgirileni	Nimgiri
9.	Khireswarleni	Khireswar
10.	Naneghatleni	Ghatghar
11.	Jivdhanleni	Ghatghar
12.	Buthleni	Junnar

3) Ancient Temples: Junnar has many ancient Cave temples, temples which shows the religious glory of Ancient India. The cave temples and temples belong to Buddhist, Jain and Hindu religious worships. The temples of Lenyadri, Ozar, Otur, khireswar Kukadeshwar are the examples of ancient carvings and identities of different civilizations and culture. Typical Hemadpanti temples showing the origin and history of the hemadpanti style of shikhara. Pushkarnis (kund) near the panchlinga temple in Junnar depicts the 2000 year old architecture and civilization which is deteriorating fastly due no any concern by authorities. There is four hundred years old Jain temple in the Junnar which one of the good example of local Maharashtra style architecture. There are many such temples in Junnar Tehsil area.

TABLE IIIII. JUNNAR TEHSIL TEMPLES

Sr. No.	Junnar Tehsil Temples & its Location	
	Temples	Location
1.	Panchaligeshwar	Junnar
2.	Pataleshwar	Junnar
3.	Uttareshwar	Junnar
4.	Girijatmak	Leynadri
5.	Vighaneshwar	Ozar
6.	Nageshwar	Khireswar
7.	Kukadeshwar	Kukudeshwar
8.	Kashi Bhamhanath	Parude
9.	Harishchandreshwar	Harichandragad
10.	Kapardirkashwar	Otur
11.	Hatkeshwar	Hatkeshwar
12.	Khandoba	Wadaj

13.	Khandoba	Dhamankhel
14.	Rnukamata	Nimdari
15.	Warsubaimata	Sukalvedhe
16.	Durgadevi	Durgawadi
17.	Jagadambamata	Khodad
18.	Redasamadhi ale	Hiware-Bk
19.	Saint Ranagdasswami	Ale
20.	Guptvithoba	Umbraj

C. Biodiversity: Floral

The Sahayadri Range is one of the spectacular geographic features of the Indian subcontinent.(S. R. Rahangdale & S. R. Rahangdale) The Western Ghats of Maharashtra are full of high altitude plateaus/rock outcrops and deciduous forests. The rock outcrops in the Western Ghats of Maharashtra are of two types based on the rock formation and soil type developed from it: (i) Lateritic—lateritic rock cover is well preserved over the parent basalt rock and soil rich in iron, and (ii) Basaltic—having black hard rock and soil.

Ghod Project Division, Junnar, Department of Forests, falls under district Pune, Maharashtra State, India. The area comprises of late creataceous to early tertiary high hill escarpment of Sahyadri (Ollier & Sheth 2008) on the West to north-west side. The undulating spurs of the escarpment spread on the east southward ending in plains and low altitude small basaltic outcrops. The escarpment receives the headwater during the monsoon months and the eastern plains are under the watershed. The forest types vary from moist semi-evergreen montane types with some evergreen patches within them on the hills and valleys to dry scrub forests on the east, through moist and dry deciduous forests. The forests are interspersed by many small rocky outcrops, of them 14 outcrops are identified in the Ghod Project

division boundary. The present study describes floristic diversity on two significant outcrops among them (figure 3 & 4).

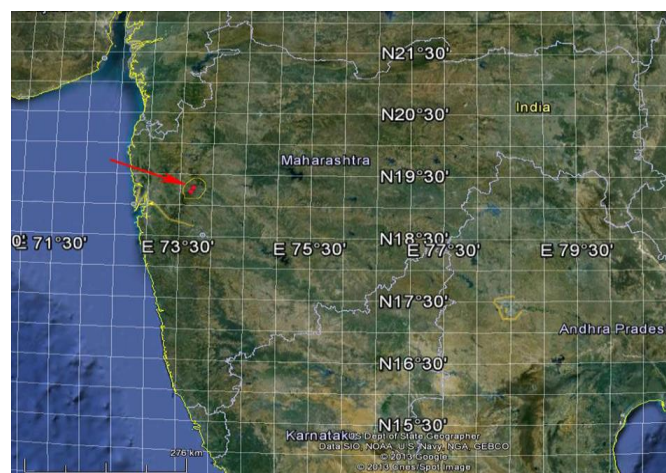


Figure 3: Location of study area; two rock outcrops are demarcated



Figure 4: The terrain map revealing topography of the Durgawadi

Durgawadi and Naneghat plateaus from the northwestern corner of Pune District are entirely basaltic but have some lateritic soil due to weathering. They have a diversity of micro-habitats and are rich in flora and fauna. Trees or shrubs are less in number, but herbaceous angiosperms, algae, mosses, ferns and lichens are generally abundant in these habitats. Many of the endemic ephemerals, herbaceous angiosperms, pteridophytes and lichens, however, are restricted to these special habitats (Watve 2008). Species composition patterns and outcrop

communities are influenced by multiple environmental factors like soil type, elevation, aspect of that rock outcrop and microenvironments (Watve 2013). Moreover, transect studies of plateaus in northern Western Ghats region conducted by (Watve) (2008 & 2013) discuss the vegetation composition and pattern of some microhabitats on the plateaus. The Comprehensive Botanical study of endemic species of rock outcrops of Durgawadi and Naneghat Plateaus of the Northern Western ghats shows a very high plant diversity.

Durgawadi Plateau

Durgawadi Plateau is located 60 kms away from Junnar town at high altitude level of 1200m. The plateau top can be reached from Inglun village through the road from villages of Ambe Hatwaj and Kathewadi and ends at the sacred grove of Durgawadi. Durgawadi Plateau is unique in terms of floristic composition and very significant and endemic.



Figure 5: Durgawadi rock outcrop along with the fortress in the background.

Nanaghat Plateau:

Nanaghat plateau is located 26 km away from Junnar town. There are well known forts in this rocky region. There is a easy access way to Naneghat from Junnar. This plateau is of basalt rock at low altitude confined by number of sacred groves, few forest area, steep slopes and many rice fields. This area floristically rich in diversity. The endemic species are found in variety of families of rock out crops.



Figure 6: Basaltic rock outcrop of Naneghat along with Jivdhan

Micro habitats on study areas:

Plant communities on these Rock outcrops (ROs) are associated with different microhabitats. According to the microhabitats, the biota is different on these ROs. Each microhabitat has characteristic features with respect to soil, water and species composition. The microhabitats are classified into rock surfaces, boulders, rock crevices, ephemeral pools, soil-filled depressions and ephemeral flush vegetation [6] (Watve 2008, 2013). In the present study, 11 microhabitats are observed on ROs and mentioned in the results. The sacred groves, tree cover on plateaus and surrounding slope vegetation are also an integral part of a RO as their influence on it is indispensable and therefore such vegetation's are also considered while.

D. Biodiversity: Faunal

The Junnar Taluka is blessed with Four Rivers Kukadi, Pushpawati, Mandavi and Mina and also the five reservoir dams manikdoha, pimpalgaon Jog Dam, Kukadi Dam, Yedgaon Dam, Wadaj and chilewadi Dam. The northern west region of the Junnar taluka is at higher altitude with mountains & valley having natural scenic beauty & forest which comes under the western ghat. The western ghat region possess the rich biodiversity character. There is abundant of wetlands like River Dams ponds is supporting the floral & faunal Biodiversity in Junnar region as water

is the prime for the survival of the animals. Several small ponds are formed in and around the dam areas. This water bodies are serving the water for the animals for more than ten months. This water availability has created a huge irrigated agricultural lands which are indeed feeding and breeding many birds, reptiles, mammals, amphibians.

Junnar Tehsil area hold the great biodiversity in flora and fauna due to its naturally rich habitat and food chain complex. Wetlands are one of the most productive ecosystems and most severely affected habitats next to tropical forests. Wetlands are important elements of a watershed because they serve as the vital link between land and water resources. Wetland habitat provides the necessary food, water and shelter for mammals and migratory birds. Other animals, such as amphibians and reptiles, Fish and Insects collectively known as herpetofauna, depend on wetlands for all or part of their life cycle, and their survival is directly linked to the presence and condition of wetlands.

Except the few species, mammals conserved and protected in the National Parks in the Western Ghats, There has been the continues loss of habitats due to hunting for crop protection and to prevent predation of their cattle's and snaring for meat.

E. Agro tourism:

The concept of Agro tourism is very helpful for the farmers, urban Tourist and local people. Agro Tourism has multiple activities which help as and support for the sustainable development of rural area. It helps in creating the job opportunities in the particular area and benefit to the local community.

Junnar has good potential for the tourism and presently four agro tourism activity centers are running in this area.1) Parashar Krishi Paryatan Kendra 2) Amantran Krishi Paryatan Kendra 3)

Parnakuti Paryatan Kendra 4) Osara Krishi Paryatan Kendra. Thus due availability of natural resources of food and lack of development of urban facilities in Junnar, Agro Tourism is the best option to support the Ecotourism of Junnar.

IV. CONCLUSION

The high diversity of Junnar Taluka region in terms of physiological character, Climate, High Biodiversity characters in flora and fauna and forest. The incredible vast ancient rock cut cave architectural heritage. The forts and ancient temples with rural culture. This diversified varied character is naturally gifted by nature to this Junnar region.

So Junnar has definite high potential for development of Eco-Tourism. This Eco-Tourism will definitely support the local community and economical upliftment of this area and explore the Eco-Tourism.

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