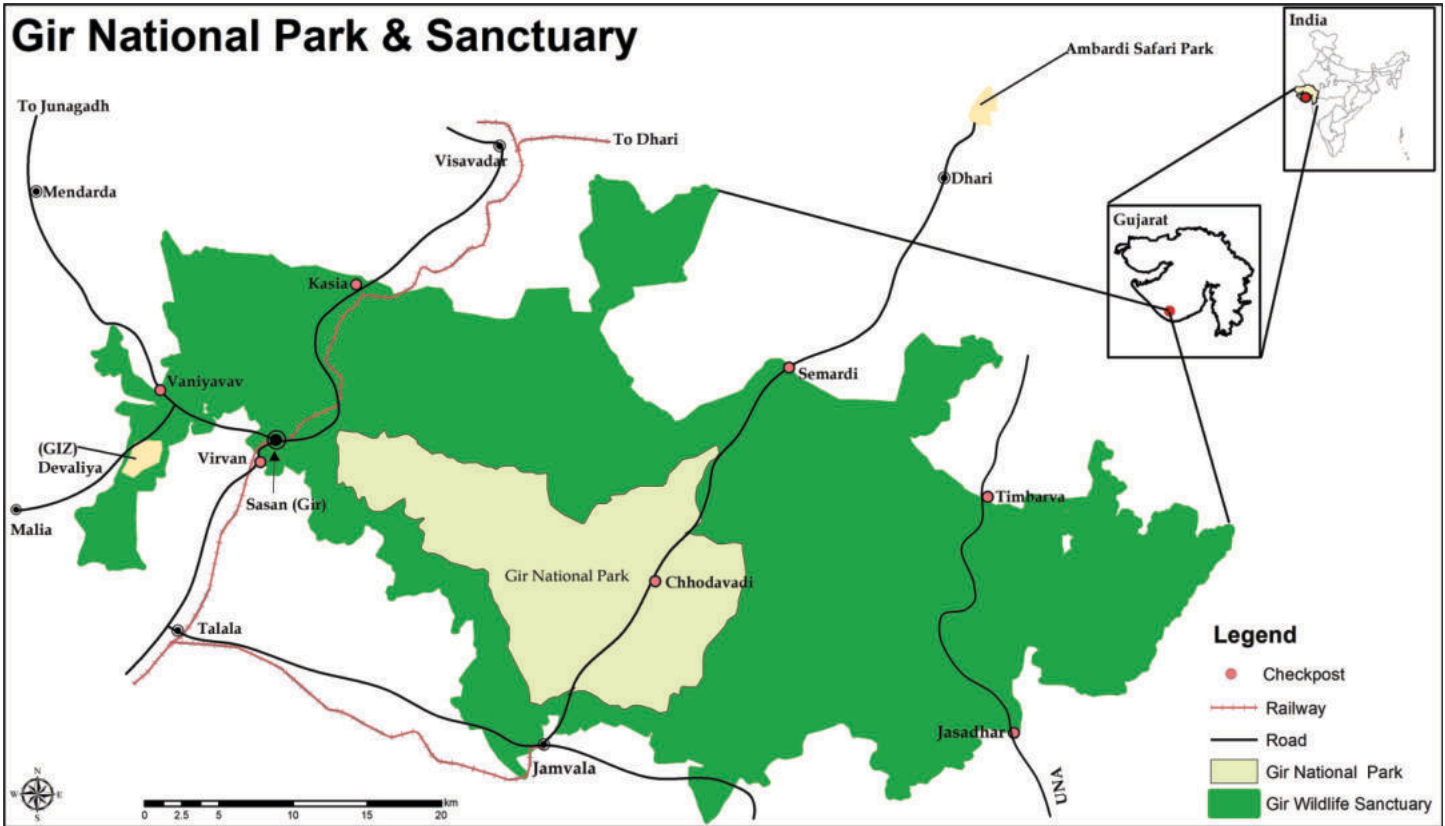




Gir

National Park
& Sanctuary

Gir National Park & Sanctuary





Gir Welfare Fund

Sasan-Gir

Conserving lions and other wildlife is not an easy task. It takes co-operation and hard work on part of numerous people. The frontline forest staff has been putting in painstaking efforts that often go unnoticed. They protect the Asiatic Lion Landscape risking their lives. These soldiers of Asiatic Lion Landscape and their families should be recognised and supported.

With this view in mind, the Gujarat Forest Department established a public trust called the Late Shri Visana Memorial Gir Forest Staff Welfare Association in the memory of Shri Shaktisinh Visana who laid down his life for the cause of wildlife protection and conservation. The main objectives of the trust are to provide assistance to the forest personnel of the Asiatic Lion Landscape.

The Gir Welfare Fund (GWF) operates under the association. The funds generated through the activities of the GWF are utilized for betterment of facilities, development of infrastructure, provision of necessary assistance to the frontline staff and their families as well as in improvising and developing wildlife protection measures. The trust also has a Group Insurance Policy for the forest staff.

The Souvenir shop at Sinh Sadan, Sasan Gir and canteen at Gir Interpretation Zone, Devalia are run under the GWF. The profit obtained through the sale of products at these facilities is directly deposited in the GWF. Every purchase made contributes significantly to conservation and improving livelihoods of the people protecting our forests. GWF also accepts donations.

Let's acknowledge the unsung heroes who work with all their might in otherwise unrewarding circumstances.

From the President's Desk...



Dear Visitor,

Greetings from Gir National Park & Sanctuary!

I welcome you to experience the charisma of this place and appreciate you sparing some time out to read this. The booklet you hold aims to generate awareness and imbibe conservation responsibility among visitors and other people.

The booklet on Gir National Park & Sanctuary has been put up together by a lot of hard work on part of the development team. It humbly tries to bring the painstaking efforts and toil of the forest staff to light which otherwise goes unreported. The booklet has been produced under the aegis of the Gir Welfare Fund which was found in the loving memory of an officer who laid down his life for the noble cause of wildlife protection and conservation.

I invite you to read it and enlighten yourself regarding Gir. By purchasing this document, you have contributed majorly to the noble cause of conservation and have been instrumental in commending all the hard work being put in by the forest staff in protection of this beautiful forest, the landscape and wildlife. Your contribution will be used for the betterment of the ground staff's life and also aid in up-scaling our ongoing and relentless conservation efforts.

Thank you for being a Conservation Hero!

Enjoy your visit!

Dr. Mohan Ram, IFS
President, Gir Welfare Fund

Note to the reader



Dear reader,

Gir is a picturesque landscape where wildlife presents itself in all its grandeur. Gir is known for being the last abode of the Asiatic Lion. For any visitor to Gir, a sighting of the Asiatic Lion and the sheer opulence the species exudes is a memory to cherish for a lifetime. A nature enthusiast who visits Gir is bound to keep returning to experience the holistic beauty that the landscape has to offer.

This booklet is aimed at providing more detailed information about Gir which may be missed during a short visit. The booklet is targeted to reach out to anyone keen about Gir: an amateur nature enthusiast, a professional photographer, a park manager, a researcher or an occasional tourist. The booklet has been designed to provide interesting information and entails details about the Gir National Park & Sanctuary in a succinct manner.

We sincerely hope that you enjoy going through this document and enrich yourselves with the information about this amazing landscape, its wildlife and its people. This booklet is our earnest effort in ensuring a much aware and environmentally responsible audience. We affirmatively desire a sustainable and eco-friendly demeanour during your visit and look forward to a perennial support in conserving wildlife and its habitats.

Thank you!

Wildlife Division Team, Sasan Gir





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His majesty- The Asiatic Lion



1. INTRODUCTION

The Gir National Park & Sanctuary is famous for the Asiatic Lion all over the world. It is one of India's oldest sanctuary and the only place in India to see the Majestic Asiatic Lion in its natural habitat. The sanctuary has the largest compact tract of dry deciduous forest in the semi-arid western part of the country. It has a rich biodiversity supporting a large number of species including several endangered species and has the highest concentration of large carnivores; the Lion, the Leopard and also possibly a single large population of the Marsh Crocodiles in the country. It is the catchment area of seven rivers namely Hiran, Saraswati, Datardi, Shingoda, Macchundri, Ghodavadi and Raval, which sustain the economic prosperity of this drought prone region. It is also an important biological research area with considerable scientific, educational, aesthetic and recreational values.





The Gir Landscape



2. AREA AND APPROACH

The Government notified the large geographical extent of Gir as Wildlife sanctuary on 18th September, 1965 in order to conserve the Asiatic Lions. The Government of Gujarat has declared an area of 1412.1 sq. km the Protected Area which comprises of 258.7 sq. km as National Park and 1153.4 sq. km as Sanctuary. Besides this, 470.5 sq. km of forest area forms a buffer zone as Reserved, Protected and Unclassified Forests. Thus, a total area of 1883.6 sq. km makes up the Gir forest in Junagadh, Gir Somnath and Amreli districts. Owing to its rich and diverse flora and fauna, Gir significantly has become a very stable ecosystem with tremendous regenerating, self-supporting and sustaining power.



Verdant green Gir



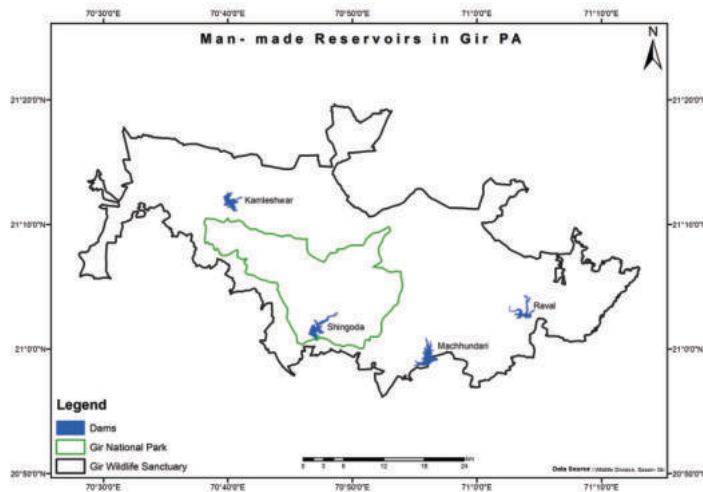


Seven major rivers originate in Gir National Park & Sanctuary

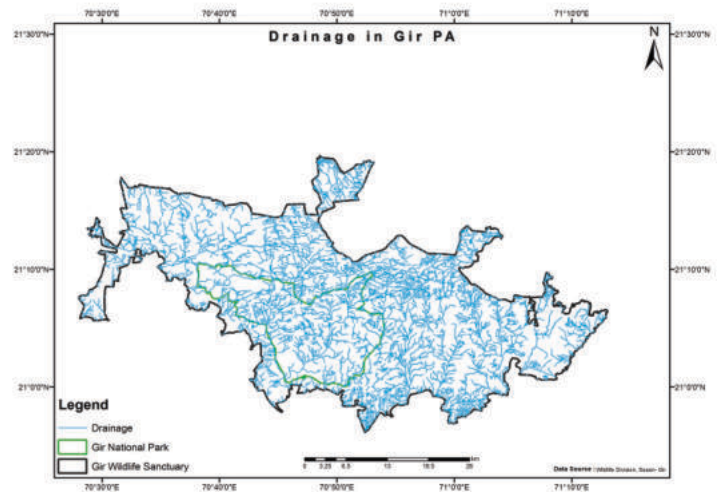
3. PHYSICAL ENVIRONMENT

3.1. Location, Topography and Geomorphology

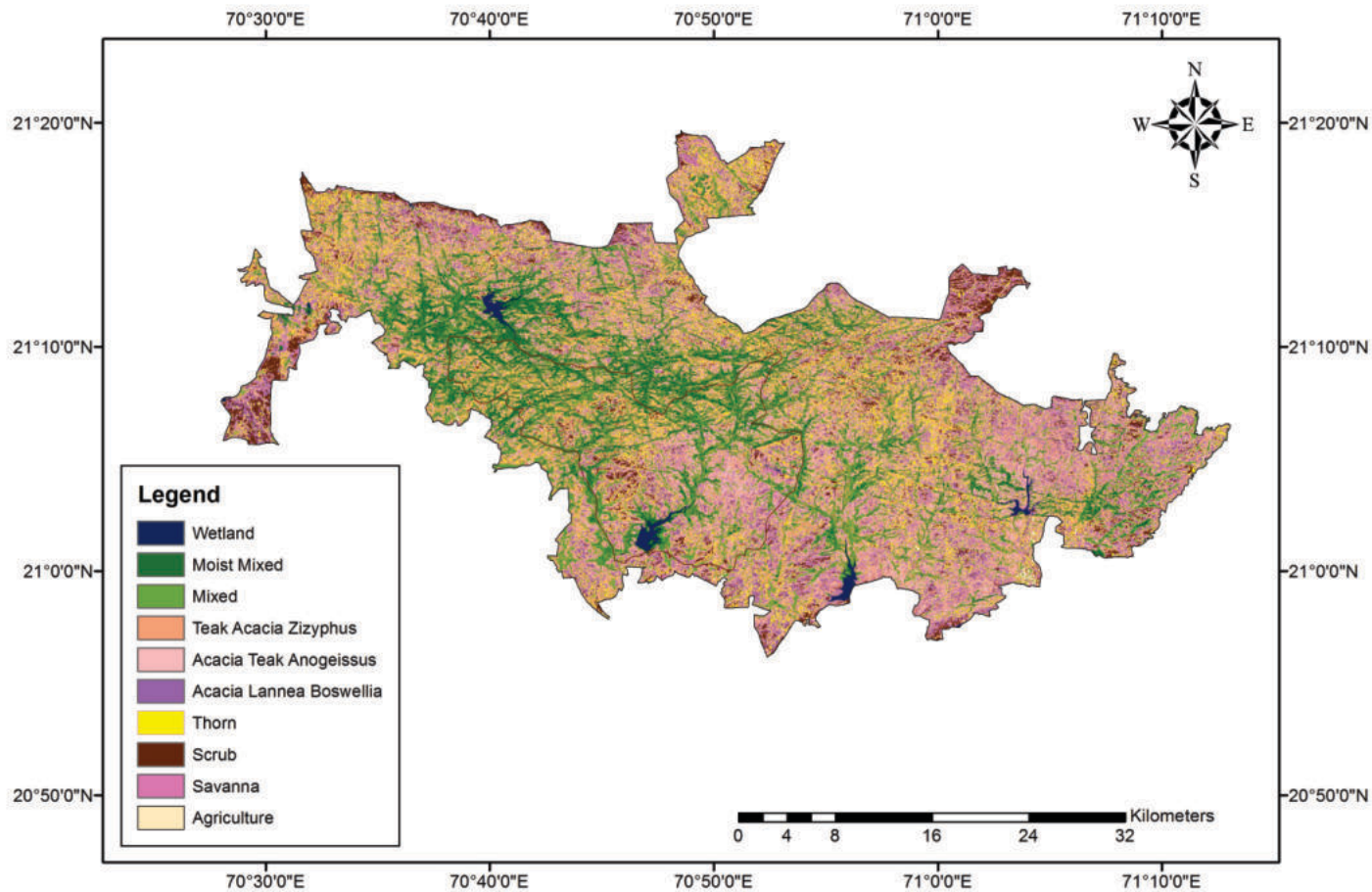
Gir lies between $20^{\circ} 40'$ and $21^{\circ} 50'$ N latitudes and $70^{\circ} 50'$ and $71^{\circ} 15'$ E longitudes. The terrain is mainly undulating with moderate hills, valleys and plateaus without definite direction of hill ranges. The northern parts are hillier while the southern part is relatively less hilly, with the general drainage direction being south and southwest. The hills are of volcanic origin. The main geographical formation is Deccan trap and main rock types are Dolomite and Basalt. Besides sandstone, limestone and metamorphic schist are also present. Volcanic rock has given rise to reddish brown sandy loam soil. Soil texture varies from gravelly along the river banks, clay in deep valleys to stony and murrum of hills.



Dams in Gir National Park & Sanctuary



Drainage in Gir National Park & Sanctuary



Vegetation types in Gir National Park & Sanctuary



3.2. Climate

Gir has a tropical monsoon climate, with three distinct seasons- Summer, Monsoon and Winter. Late November to early March is cool and dry, with temperatures dropping to around 10° C in midwinter. This is followed by a hot dry summer with peak temperatures rising to well above 40° C. Mid-June to Mid-October is the monsoon period with a recorded rainfall of 1114 mm in this region during the year 2019. Due to irregular monsoon and uneven distribution of rainfall, drought years are not uncommon.

3.3. Water Resources

Gir forms the catchment of seven rivers namely the Hiran, the Saraswati, the Datardi, the Shingoda, the Macchundri, the Ghodavadi and the Raval.

The Northern aspect of the Northern ridges forms the catchment of Shetrunji river, which flows outside the Sanctuary area. All these major rivers of Gir have perennial water supply except during severe drought.

At the peak of summer, surface water for wild animals is available at about 400 water points. In order to tap water resources, four dams have been constructed along the Hiran, the Macchundri, the Raval and the Shingoda respectively. The total catchment of these dams is 820 sq. km, while water from rest of the areas remains untapped. During droughts, surface water is not available at majority of these points. Water scarcity is a serious problem in many parts of Gir during droughts. Water availability is achieved through construction of 388 artificial water points throughout the landscape.





The hill slopes in Gir are dominated by *Acacia-Lannea-Boswellia* type of vegetation sometimes interspersed with Teak

4. FLORA AND FAUNA

4.1. FLORA

The flora of Gir forest of Saurashtra published by the Forest Research Institute (FRI) in 1955 had recorded 403 species of plants which was updated to 606 after identification of new records.

The vegetation changes along the west to east axis in Gir Protected Area (PA). In eastern Gir, *Anogeissus latifolia* is dominant and in western Gir, *Tectona grandis* is dominant. According to Champion and Seth's revised classification of forest Types (1968), Gir PA falls under the type 5A/C1a, i.e very dry teak forests.



Water lily (*Nymphaea* sp.)



Impatiens



Barleria sp.



Herbaceous undergrowth dominates the Gir landscape during monsoon



A flowering climber

Qureshi and Shah categorized the vegetation types by using Geographical Information System at coarser resolution in 2004. The details are given in the table with percentage contribution of vegetation types within Gir PA.

Vegetation Type	Percentage Area
Moist Mixed Forest	12.76
Mixed Forest	16.95
<i>Acacia - Tectona / Anogeissus</i>	13.48
<i>Acacia - Lannea – Boswellia</i>	12.54
<i>Tectona – Acacia – Zizyphus</i>	29.71
Thorn Forest	7.73
Scrubland	4.48
Savanna	1.38
Agriculture/ Open Area	0.29
Wetland	0.69



Cluster figs attract many species of birds and other animals



Herbaceous undergrowth dominates the Gir landscape during monsoon



The onset of spring marks flowering in most plant species



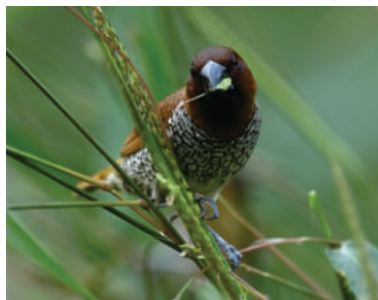
Curcuma amada



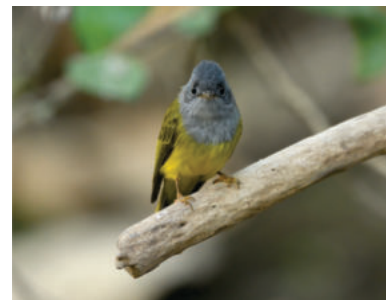
Crested Serpent Eagle



Brown Fish Owl



Scaly Breasted Munia



Grey headed Canary Flycatcher



Rain Quail



Asian Paradise Flycatcher



Crested Tree Swift



Indian Peafowl



Coppersmith Barbet



Vultures

4.2. FAUNA

The Gir PA has a diverse assemblage of wildlife harbouring 39 species of mammals, around 300 species of birds, 37 species of reptiles and more than 2000 species of insects. The lesser false vampire bat was recorded for the first time in 2008 from Gir PA. Alexandrine parakeet was also sighted in Gir PA in 2011. The main scavenger birds include 6 species of vultures. Indian peafowl is found all over the Gir PA. Other avian species categorized by their feeding guilds inhabiting Gir are listed as follows;

Frugivorous: Coppersmith Barbet, Plum headed Parakeet, Yellow footed Green Pigeon, etc.

Carnivorous: Indian Eagle Owl, Mottled Wood Owl, Spotted Owlet, Tawny Eagle, Shikra, Black-winged Kite, Crested Hawk Eagle, Crested Serpent Eagle, Oriental Honey Buzzard, Osprey, etc.

Omnivorous: Jungle Crow, Black headed Oriole, Golden Oriole, etc.

Nectarivorous: Purple Sunbird, Thick-billed Flowerpecker, Pale-billed Flowerpecker, etc.

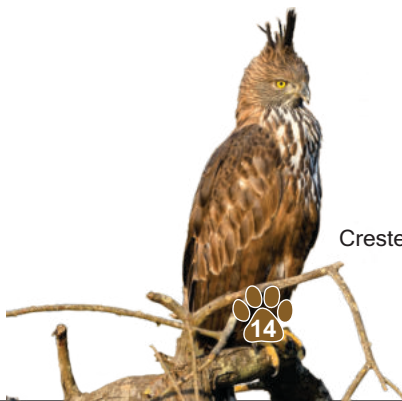
Granivorous: Jungle bush Quail, Crested Bunting, Painted Francolin, Spotted Dove, Grey Francolin, etc.

Insectivorous: Indian Pitta, large number of Flycatchers including Verditer flycatcher, Asian Paradise Flycatcher, Tickell's blue Flycatcher, Indian Robin, Hoopoe, Oriental white Eye, Scarlet Minivet, etc.

Other water birds such as Cormorant, Darter, Asian Open Bill, Grey Heron, Little Egret, Cattle Egret, Yellow-Wattled Lapwing, Purple Swamphen, etc. are found in and around reservoirs, streams and other water pools inside and outside the sanctuary.



Indian Pitta



Crested Hawk Eagle



Painted Francolin



Small Indian Civet



Striped Hyena



Jungle Cat



Sambar



Nilgai



Chital or Spotted Deer



Indian Chameleon



Indian Monitor Lizard



Tawny Coster

In the Gir PA, prominent carnivore species are Asiatic lion and Leopard and other carnivore species are Jungle cat, Rusty Spotted cat, Striped hyena, Jackal, Grey Mongoose, Ruddy Mongoose, Small Indian civet, Indian Fox and Ratel. Major wild herbivores in Gir are Chital, Nilgai, Sambar, Hanuman Langur, Wild pig, Four-horned antelope, Chinkara. The smaller mammals like Porcupine, Black Naped Hare, Indian Pangolin are found in Gir. Marsh crocodiles are found in the four big reservoirs within the PA as well as in the main rivers and some of their tributaries and constitute the largest population in a single place in Gir PA. The Star tortoise, monitor lizard and a number of snakes are also common. Indian rock python is a rare encounter and sometimes met along the stream banks.

Different floral and faunal bio-diversity reported from Gir PA is shown in the table.

Biodiversity	Particulars	Number of Species
Floral Biodiversity	Trees	108
	Shrubs	50
	Climbers	86
	Herbs	248
	Grasses	45
	Sub-total	537
Faunal Biodiversity	Mammals	39
	Reptiles	37
	Birds	300+
	Insects	>2000
	Sub-total	2376
Grand Total		2913



Marsh Crocodile



Indian Rock Python



Indian Pangolin

5. CONSERVATION VALUES

In terms of conservation values, Gir

- Is the largest compact tract of dry deciduous forest in the semi-arid western part of the country;
- Is the last home of the Asiatic lion- its last surviving gene pool in nature in the world;
- Is a rich biodiversity area supporting large number of species including several endangered species;
- Has the highest concentration of large carnivores;
- Is the catchment area of seven rivers which sustain the economic prosperity of this drought prone region;
- Ensures the ecological security and environmental improvement for the region, climate, water, salinity prevention and pollution absorption;
- Is an important biological research area with considerable scientific, educational, aesthetic and recreational value; and
- Is the cradle of culture and religious evolution in Saurashtra.



There are several streams and rivulets that flow through beautiful cascades adding grace to the beauty of Gir



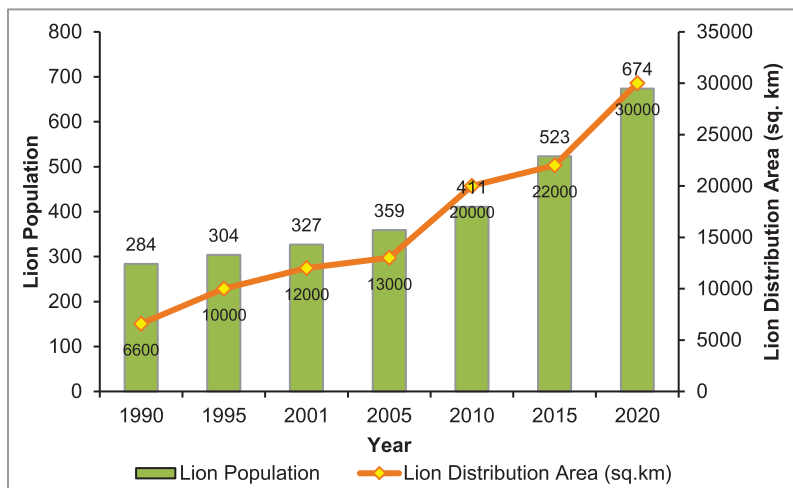
Adult males usually form coalitions of two or more partners

6. THE ASIATIC LION

Gir is well known for the only wild gene pool and the last home of Asiatic lion all over the world. The Asiatic lion was once widely distributed in Asia covering Mesopotamia, Arabia, Persia and the Indian subcontinent. In the Indian subcontinent, its range extended across northern India, as far as east up to Bihar, with the Narmada river marking the southern limit. Before the close of the 19th century, the Asiatic lion had become extinct from its range except Gir. The animal struggled to survive during one of the most severe droughts between the year of 1901-1905 that also killed many humans and livestock. The Nawab of Junagadh provided adequate protection to the lions, and their population increased between the years of 1904-1911. After the death of Nawab, about 12-13 lions were shot annually. From 1911 onwards, hunting was rigidly controlled by the British administration. In 1913, the Chief Forest Officer of Junagadh reported that there were not more than 20 animals left in the forests.



Before 1936, the population estimates of lion were based on personal knowledge of informants. The first organized census was conducted in 1936, the population of lion then was 287. The results of population estimation exercise of lions in the Gir Forest from 1936 to 2020 are as follows:



Population and distribution trend of Asiatic Lions.



Sub adult males venture out in search of territories and are nomadic for a major part of their lives till they establish their kingdom in an area

1936	The then Junagadh State	287
1950	Mr. Winter Blyth	227
1955	Mr. Winter Blyth	290
1963	Gujarat Forest Department	285
1968	Gujarat Forest Department	177
1974	Gujarat Forest Department	180
1979	Gujarat Forest Department	205
1984	Gujarat Forest Department	239
1990	Gujarat Forest Department	284
1995	Gujarat Forest Department	304
2001	Gujarat Forest Department	327
2005	Gujarat Forest Department	359
2010	Gujarat Forest Department	411
2015	Gujarat Forest Department	523
2020	Gujarat Forest Department	674*

* Based on Poonam Avlokan data June 2020

Age and sex categories of Asiatic lions enumerated during the population estimation exercise is given in the following table.

Year	Adult		Sub-adult			Cub
	Male	Female	Male	Female	Unidentified	
1995	94	100	-	18	21	71
2001	101	114	20	18	19	55
2005	89	124	-	-	72	74
2010	97	162	23	23	29	77
2015	109	201	32	28	13	140
2020	161	260	45	49	22	137



Common Hoopoe



Lion cubs are altricial i.e. they are born with their eyes and eyelids closed and require a lot of care for the first few weeks after birth



Lionesses are fearlessly protective mothers who care for their young till they are capable of hunting

The Wildlife Conservation Program for the Asiatic lion was started by the Forest Department in September 1965 with the declaration of 1265.01 sq. km area as Sanctuary, which was expanded to 1412.1 sq.km. With the implementation of Wildlife Management and the Gir Development Scheme, the population of lions increased gradually from 177 in 1968 to 523 in 2015. Similarly, the population of major herbivores (Chital, Sambar, Blue bull, Wild pig, Chinkara, Four-horned Antelope, Blackbuck, Hanuman Langur and Peafowl) has also increased from about 38,221 in 1995 to 1,55,659 in 2019.



Four-Horned Antelope



Hanuman Langur



The Maldharis have been living in Gir for generations and find mention in many folklore

7. NESSES AND FOREST SETTLEMENT VILLAGES

7.1. NESS

Maldharis are an integral part of the Gir ecosystem. They have been living in Gir for generations in small hamlets in the forest area called “nesses”. In the past, plenty of water and fodder was available for their domestic livestock, but with the passage of time, the increase in livestock increased pressure on forest resources. This resulted not only in the increase in competition for the limited resources with ungulate populations, but also had an adverse impact on grass production. This phenomenon caused harm to the health of forest, wildlife and maldharis. Thus, it was prudent to resettle the maldharis outside the sanctuary for their socio-economic upliftment as well as for the benefit of wildlife. The Maldharis used to shift their ‘nesses’ every year. In the process of shifting their nesses, maldharis caused damage to the forest by cutting or lopping of trees for making circular fencing around their homes. Also, some aggrieved Maldharis started poisoning lions by sprinkling insecticides on the carcass. Gir lion was imperiled and eventually it became necessary to remove Maldharis from the Gir forest to ensure the very survival and well-being of the Gir Lions. This became the main plank of the prestigious Gir Lion Project launched by the State Government in 1972.





The Siddis are tribals of African origin and inhabit the Sasan Gir, Jambur, Sirvan and many other villages near Gir

Gir Lion Project which was formally approved by the State Government and the Agriculture, Forest and Cooperation Department in 1972 resulted in shifting some of the permanent Maldhari families from the sanctuary and resettling them outside Gir PA by allotting them cultivable and grazing land for their cattle. As per the survey conducted by Wildlife Division Sasan Gir in 2019, there are 50 nesses and settlement villages consisting of 384 families with 4,912 people and 21,552 livestock in Gir Wildlife Sanctuary. The livestock include buffaloes, cattle, sheep, goats and camels. Four settlement villages do not hold any population of Maldharis.

Siddi/ Sidi/ Sidhi, Habshi/ Habsi or Badshah are the ethnonyms of an Afro-Indian tribal community who have inhabited Gir and Gujarat (and also many other states of India) since more than five hundred years. Siddis of Gir become a cynosure for tourists. Siddis live at Sasan Gir, Jambur, Sirvan and many other villages near Gir.

7.2 FOREST SETTLEMENT VILLAGES

Gir has 14 forest settlements, covering an area of 5176 hectares. The total human population is about 4500 and the cattle population is 4200. Settlement land measuring 1867 hectares. has been given on lease to cultivators for agriculture, initially for 15 years, renewable after expiry of the lease. The Forest Department carries out all works in these settlements under the Development of Forest Settlement Scheme.

The condition of most settlers in the Gir Forest is entirely different from the counterparts in the tribal areas in South Gujarat. Many are economically better off than their non-settlement counterparts in the villages. However, in the name of forest settler, they want equality with maldharis as far as grazing in the sanctuary area is concerned which has been dejected. Similarly, they are not content with their present status as forest settlers. It makes them unqualified for other facilities such as crop loans from the banks as they cannot mortgage land granted to them on lease by the Forest Department. Owing to resource crisis, development work often suffers. This is the main reason for their discontentment, leading to demands of converting their land into revenue areas, which is ridden with several problems pertaining to the management of the Sanctuary and Reserved Forest area.



Gujarat Forest Department is well equipped and has an expertise in dealing with human-wildlife conflict situations

8. HUMAN - WILDLIFE CONFLICT

Predominant human-wildlife conflict problems are predation on livestock, human injuries and death, crop damage and loss of property by wild animals. Depredation events on livestock by lion and leopard are quite common in and around Gir PA. Lion population has increased from 117 (1968) to 523 (2015). The population of wild herbivores has also increased from 9635 (1973-74) to 1,55,659 (2019). This poses a serious management dilemma as wild animals have started moving out from the Gir forest in the past two decades into the human-dominated areas.

Cultivation of sugarcane and mango has increased man-made forest like patches around Gir PA. This has allowed large felids and other wild animal to disperse out of the Protected Area and find shelter there, leading to increased interactions with human and cases of conflict. Straying has been defined as “to wander away from home or from the right way and lost from home”. In other words, the lions and leopards here are not “lost from home” but are searching for “lost home” which is outside the Gir PA which once existed.

Eco-development projects aimed to minimise conflict between the Gir management and people. Innovative participatory approach has been adopted to reduce conflict prevailing in Gir. *Ex-gratia* compensation for human death or injury by wildlife and livestock killed by lions and leopards is provided as per the recently updated Government Regulation (2016).





Many wildlife health interventions are conducted in the field through expert veterinary teams

9. WILDLIFE VETERINARY CARE

Rapid urbanization, industrialization and agriculture expansion cause a direct backlash on wildlife. Lions, leopards along with other predators and prey species come directly into conflict with the diverse human interests causing injuries and stress. Such dimensions might be manifold like road and rail kill and/or injury, stuck in a village hutment, falling into parapet less wells, injuring and/or killing people, interferences in agriculture activities due to respite in a sugarcane farm and many more.

There are some natural calamities and phenomena (diseases, flash floods, infights, cub rejection by mother, etc.) causing such stresses to wild animals. For successful management of the Protected Areas at the landscape level, it is imperative to control animal mortality/ stress due to such causes. In reflectance, the Gujarat Forest Department has a long history of wildlife rescue, capture and health management in Gir and Greater Gir with well-equipped Wildlife Health Centres at Sasan, Jasadhar, Dhari, Jamvala, Amrapur, Simar, Junagadh, Krankach, Ranigala, Vadai, Gebar and Babarkot under supervision of proficient Veterinary Officers.

The wildlife rescue initiatives in Gir are paramount and prominent examples as acknowledged by many national and international institutions. Today when India is struggling hard to save many of its critically endangered species, mortalities due to such causes could be irreparable and the template of Gir could be a lesson for many of the Protected Areas across the country.

Rescue Centres are responsible for different rescue operations, treatments, release operations, health monitoring of wildlife, wildlife health research, laboratory analyses, investigations and vaccination of domestic cattle, etc. They also conduct the post-mortem of dead wild animals. Teams are also responsible to extend such services to animals at Gir Interpretation Zone, Devalia, Ambardi Safari Park and Crocodile Breeding Centre, Sasan.



The rescue centres in the Gir landscape are well equipped and efficient in handling any wildlife health related situations

The dispersing lions have been moving out of Gir in search of new territories. Natural dispersal of the lions started since 1990. At present, lions have scattered to Bhavnagar in the eastern part as well as occupied major parts of Amreli, Gir Somnath and Junagadh districts. Recently, their movement has been recorded in Chotila, Surendranagar district. This indicates that the lions are regaining their historically lost territory. At present, Asiatic Lions roam in more than 30,000 sq. km of Saurashtra region in Gujarat.





Proactive management measures help the lion populations to thrive in Gir and Greater Gir landscape

10. MANAGEMENT IN THE GIR PA

Since the declaration of the area as Gir Sanctuary in 1965, it has been realized that the ecosystem here was deteriorating very fast. An urgent need was felt to start extensive ecological research work in the Gir forests. In order to initiate this research, the 'Gir Lion Project' was started by BNHS (Bombay Natural History Society), Mumbai, in 1969 with financial assistance from the Smithsonian Institute and Yale University, USA. A research station was established at Sasan Gir during this period. Many researches and conservation-oriented studies have been carried out by various institutions and individuals ever since.

The Gir forests are spread across three districts- Junagadh, Gir Somnath and Amreli, and are divided into two territorial divisions, East and West with headquarters at Dhari and Junagadh respectively. Gir also has one Wildlife Division with headquarter at Sasan that aims to make the task of protection and wildlife management more effective.

Issues and problems related to Gir PA management

- Destruction of habitat due to grazing by domestic livestock of Maldharis and in-forest settlers.
- Traffic movement on roads passing through PA.
- Railway line inside the PA.
- Temple complexes and increase in number of people visiting religious places.
- Changing land use pattern outside the Protected Area, especially changing crop pattern in agriculture sector.
- PA staff and people conflict.
- Increase in tourism related problems, development of infrastructure nearby the PA.
- Ever growing human and livestock population in nesses, forest settlement villages and peripheral villages.
- Setting up of new industries in coastal zones.
- Mining/quarrying in coastal areas and peripheral areas.
- Fragmentation of connectivity linking the Gir PA to other protected areas owing to biotic pressure.



Radio collars have been deployed on 75 Asiatic lions by the Gujarat Forest Department to study their movement and behaviour in the Gir and Greater Gir landscape

To ensure that the PA is managed successfully, the staff has been given the following mandate:

1. Protection against

- Poaching
- Illegal removal of forest produce
- Fire
- Livestock grazing
- Pilgrimage
- Traffic
- Natural calamities

2. Wildlife management

- Habitat improvement
- Ensuring regular supply of water throughout the year
- Protection from poaching
- Prey base development
- Human wildlife conflict management
- Rescue, treatment and rehabilitation of wildlife
- Corridor management
- Grassland management
- Eco-tone management
- Introducing new technologies and updating it as required

3. Eco-development works

- Alternate energy sources
- Fodder plot development
- Eco-development of villages
- Training and skill development
- Awareness and education work
- Off-farm income generation activities
- Plan for community cooperation for monitoring and protection of forests

4. Eco-tourism

- Management of interpretation zone
- Nature education camps
- Catering, lodging and boarding facilities at forest guest house
- Management of tourists in tourism zone
- Orientation program and tourist guide facility
- Create recreational and educational opportunities for tourists
- Vehicle tracking and management



Construction of water holes and Soil Moisture Conservation works are key for provision of water in the Gir landscape

5. Law Enforcement:

- Wildlife Crime Cell
- Strengthening of striking force
- Vanya Prani Mitra
- Incentive to informers
- Anti-poaching activities
- Red alert and Combing operations

6. Special strategies

- Research and Monitoring
- Patrolling strategies
- Network, Modern Communication and Crime Risk Management
- Updating risk factors for sensitive charting
- Wildlife crime prevention strategy

7. Others procedures

- Strengthening of protection measures by establishing check-posts and wireless communication network to control movement of people and livestock within the sanctuary by introducing patrolling vehicles and weapons
- Soil and moisture conservation

- Popularization of non-conventional sources of energy
- Employment generation programs
- Speed restrictions and installing safety measures for wildlife on the roads which are sensitive with regards to movement of wildlife
- Reduce speed of trains that commute through Gir sanctuary area
- Nature education and mass awareness movements through forest youth clubs and other voluntary organizations
- Human-wildlife conflict mitigation
- Crisis management
- Village level monitoring committee
- Launching of individual beneficiary scheme





The Asiatic lions radio-telemetry project is implemented through competent professionals well versed with the fields of wildlife health, biology and ecology

Efficacy of Gir PA Management.

- Increasing lion population; which was estimated to be 411 in 2010 grew to 523 in 2015.
- Increase in other wild animal population including wild ungulates; e.g. chital population grew from 43,363 in 2010 to 65,524 in 2019.
- Improved ground water recharge with better eco system services.
- Habitat improvement, increase in vegetation cover, grass and browse availability.
- Better wildlife health, wildlife rescue capabilities and better capabilities to address the human-wildlife conflict issues.
- Improved infrastructure and field as well as office equipment.
- Better baseline data for future planning and improvement.

10.1. Present Scenario

10.1.1. Problems identified

1. Dispersion of wildlife from Sanctuary area; wildlife versus human, interface, conflicts.
2. Weed infestation particularly by *Lantana camara* and *Cassia tora*.
3. Forest fires.
4. Religious places within the sanctuary with their ambitious expansion plans. Gir PA is under constant pressure by 1,50,000 pilgrims who visit these shrines round the year.
5. Grazing pressure by domestic livestock of maldharis and forest settlers.
6. Scarcity of water in the eastern part of the sanctuary specieally during the peak summer period.
7. Herbivores damaging agricultural crops in surrounding villages.
8. Wild animal falling and getting trapped in open wells.
9. Traffic on public highways and railway lines passing through the PA.

Indian Chameleon





The Sinh Sadan Campus at Sasan Gir serves as the Forest Guest House in addition to facilities for conducting seminars, trainings and workshops

10.1.2. Mitigation Measures

1. Lions enter human habitation areas beyond the sanctuary limit. However, owing to their increased interaction with human beings due to population increase, incidents of people disturbing them and lions injuring people have increased. Initiatives such as mass education through public appeals, nature education camps and extension activities in rural areas have already been taken up to reduce unpleasant human-wildlife encounters. Payment of compensation to the people for loss/injury to human life and domestic cattle as per recently updated Government Regulation (7th June, 2016).
2. Every year, weed eradication operations are carried out. However, there is a need to accelerate the work and hence increased facilities are also proposed.
3. To minimize the damage from fire, measures like erection of watch towers, preparation of fire lines and engagement of labourers to control fire during winter and summer has been taken up and is being monitored regularly. A comprehensive plan for fire control measures has been prepared and submitted to minimize the damage to the Gir Ecosystem in the future. Cutting, grazing and poaching are being controlled through enforcement of effective patrolling and checking of the area with the help of improved communication network, necessary vehicles, wireless sets and weapons.
4. Sanctuary rules and regulations are being applied at the religious places and steps are being taken to not allow new rights and privileges.
5. An area specific fodder development/nutrient enrichment programme is being incorporated in micro plans of surrounding villages and is proposed to be taken up under the ecodevelopment project.
6. Construction of Check-dams in the forest areas and water supply in artificial waterholes during critical periods is being carried out to ensure availability of water. Under the biodiversity conservation plan, emphasis has been laid on the eastern part of Gir for the construction of artificial waterholes and other water harvesting structures.



Gujarat Forest Department actively supports rural livelihood improvement works by organizing workshops for locals



Parapet walls around wells are constructed in the Asiatic Lion Landscape to prevent accidents or wildlife falling in open wells

7. At present the problem of wild ungulates damaging agricultural crops is not very serious. It is generally related to fodder availability within the sanctuary and surfaces only during scarcity or drought years. Wild pigs have been causing damage to agricultural crops in surrounding villages. Habitat manipulation works like thinning of dense woody growth and lopping for browse species are prescribed to increase food availability wherever necessary in the biodiversity conservation plan.
8. Traffic on public highways and the railway line disturbs the wildlife. Efforts have been made to minimize the number of trains and to reduce their speed limit. At present, no train runs through the area after sunset. A proposal to stop heavy vehicles and to close highways passing through the forest during the night is under consideration.
9. In wildlife dominated areas, more than twenty five thousand open wells have been secured through construction of parapet walls.

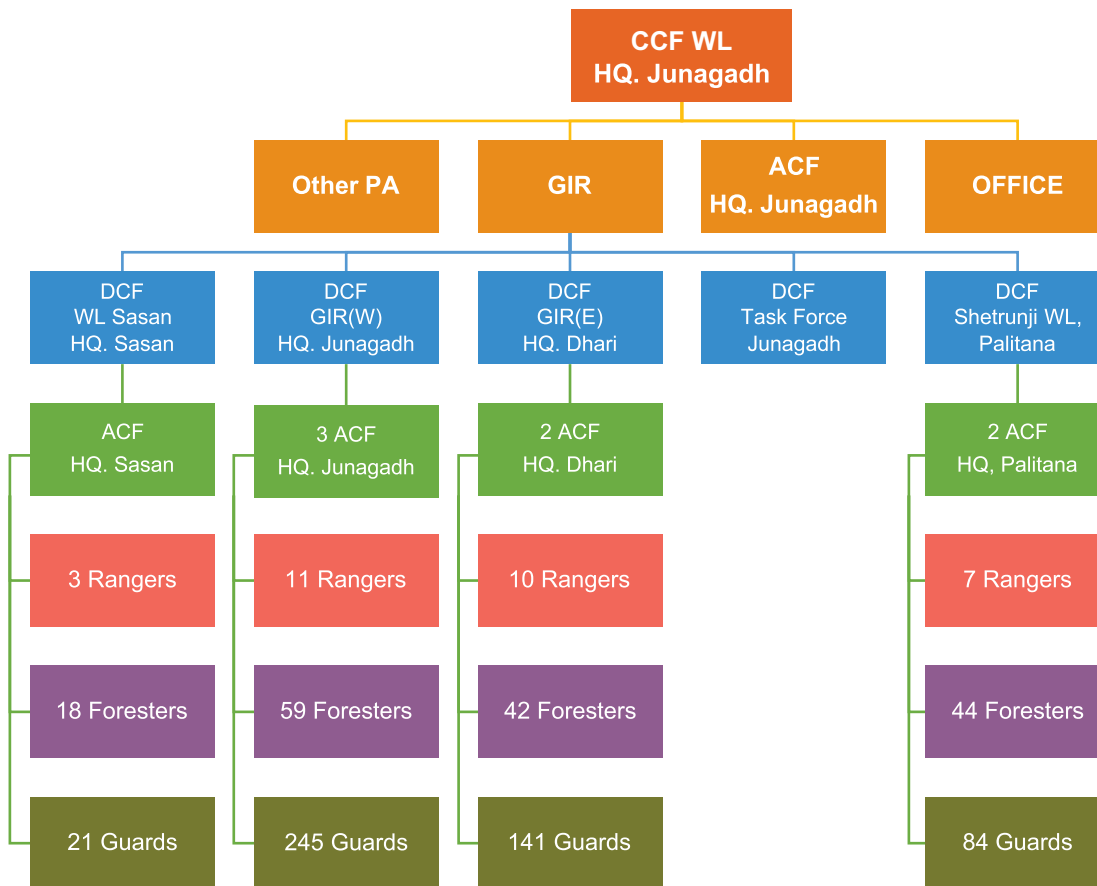
10.2. Direct Benefits from the Gir PA.

- Gir is a major eco-tourism centre. Nearly 5.5 lakh eco-tourists visit Gir annually.
- Dams outside the Gir, built on rivers that originate within the forest like the Shetrunji provide drinking water to places as far away as Palitana and Bhavnagar.
- More than 20,000 livestock of the Maldharis and 4912 forest settlers are entirely dependent on the forest.
- Nearly 1 lakh livestock of peripheral villagers are partially dependent on the forest.
- From non-reserved vidis, grass is provided to panchayats and panjarapoles.
- Through the four reservoirs of the Gir, approximately 106 MHM of water is provided annually for irrigation and drinking.
- Besides departmental infrastructure facilities for tourism, approximately 100 families earn their livelihoods directly from the ecotourism industry.
- Approximately 1 lakh man-days are generated annually through different works being carried out in the Gir Ecological Unit.



The able and dedicated team of Forest Officials ensures the conservation of biodiversity including the lions in the Asiatic Lion Landscape

11. ORGANIZATION





Nature Education Camps are an important means to impart knowledge and awareness to a myriad of target audience

12. NATURE EDUCATION AND TRAINING

It is observed that involving people in wildlife conservation is possible by bringing them in an intimate contact with nature. Gir is one of the pioneer Protected Areas of India that started environmental education way back in the year 1977-78 to elicit the support of general public. Maldharis, local villagers, students, city-dwellers and professionals are selected as target audience for Nature Education Camps (NECs). During the past years, efforts were made to create a support base for Gir conservation. Campers are taken in the forest for trekking through prescribed routes and adequate information about forest, wildlife and environment is provided through discussions, lectures and demonstrations, etc. The Forest Department also involves NGOs as resource persons to organize such camps in the forests. The Forest Department provides all necessary help and support for these works. Sasan Gir, Jamwala and Jasadhar are permanent sites for the Nature Education Camps.

There are about 125 forest youth clubs in Junagadh district. Approximately 90 NECs a year are organized for imparting awareness among participants. Advance trainer's camps are also conducted with the objective of training nature conservation enthusiasts to develop capabilities to organize NECs.





Several Livelihood generating workshops for women have been organized by the Gujarat Forest Department



Meetings with Eco-Development Committee members



Awareness programmes for farmers

13. ECO-DEVELOPMENT

The India Eco-Development project was implemented by the Ministry of Environment and Forest, Government of India and various State Forest Departments, including the Gujarat Forest Department. The strategy of Eco-development is to conserve biodiversity by addressing the impact on the local people of the Protected Areas, it has two main thrusts- improvement of the PA management and involvement of the local people. Activities like pasture development, soil and moisture conservation, popularizing non-conventional energy sources, scientific animal husbandry, employment generation and community development programs had been proposed under the Gir Eco-development Project. This project was implemented in Eco-development zone covering 57 revenue villages within the distance of 2 km from boundary of the PA, 14 forest settlement villages and Maldhari nesses.

The World Bank Funded Biodiversity Conservation and Rural Livelihood Improvement Project (BCRLIP) aimed at conserving biodiversity in selected landscapes, including protected areas/critical conservation areas, while improving rural livelihoods through participatory approaches. The Government of India and Gujarat Forest Department supported BCRLIP Gir as a Learning Centre with very good health care facilities, research data base, library and team of research scholars from various institutes and universities working in Gir PA. Documentation and dissemination of different research findings and field experience has been an important aspect of making Gir an exemplary learning centre.

Implementation of the Eco-development activities uplifted the wildlife research and monitoring work in Gir PA. Several untouched fields of research works were taken up during this period. By establishing linkages and by strengthening existing linkages with research organizations, institutes, universities and research scientists, a wider network for research support has been shaped.



Wildlife viewing on designated routes of the Gir Jungle Trail is an extremely satisfying and enriching experience

14. ECO-TOURISM

Eco tourism is allowed to minimize the negative impacts of tourists on PA and wildlife, to provide economic benefits to the local communities, to maximize enjoyment of people during their stay through education, interpretation and to increase their concern for nature and biodiversity conservation.

Gir has well trained trackers, eco-guides, drivers and staff who manage ecotourism services effectively. Training programs for guides and staff are regularly conducted for enhancement of communication skills, spoken English, information of recent developments in Gir including information on biodiversity.

An information counter is available at Reception Centre, Sasan-Gir with all communication facilities which provides general information related to both lodging and boarding facilities available in and around Gir, places of visit, etc. to the tourists. This counter also coordinates with local operators, hoteliers including tourism operators outside Gir to gather all the relevant information. Moreover, high quality information materials such as brochures, booklets, etc. are available for general tourist use. A good natural



history film on Gir covering all aspects of the National Park and Sanctuary is available for daily film show at present. Information material in vernacular language has also been developed. A system of filling up forms by tourists to get feedback and help in filling the gaps of recent practices and strengthening and improving existing tourism facilities is also in place.



Aquatic life abounds in Gir National Park and Sanctuary

The Sasan Gir tourism headquarter is situated at a distance of 65 km from Junagadh and 45 km from Veraval. Sasan is well connected to Ahmedabad (a major mega-city of Gujarat) via Junagadh and Rajkot. The nearest Airports from Sasan Gir are Diu (100 km) and Rajkot (160 km).

Gir Tourism permit booking is 100% online. For online permit booking, login to www.girlion.gujarat.gov.in

Timing		No. of Permits for Jungle Trail		
In Winter (16th October to 29th February)	In Summer (1st March to 15th June)	Normal Days	Festival Days / 2nd and 4th Saturday/ Sunday	
6:45-9:45 AM	6:45-9:45 AM	50	60	60
8:30-11:30 AM	8:30-11:30 AM	50	60	60
3:00-6:00 PM	3:00-6:00 PM	50	60	60
Total		150	180	180

Tariff for Jungle Trail		
Particulars	Indian (INR)	Foreigner (INR)
Normal Days Up to 6 Persons	800/-	5600/-
Festival Days / 2nd and 4th weekend	1000/-	7000/-
<i>*Extra 1700 /- Gypsy charge and 400/- Guide Charge</i>		
Camera charge	200/-	1400/-



Black Naped Hare

In the past, lion shows used to be arranged for the benefit of tourists visiting Gir. However, this practice was found to be cumbersome and deleterious for the lions and the staff and has thus been discontinued. At present, Gir Sanctuary and National Park is not divided into zones and there is no defined tourism zone. To reduce disturbance from tourism in the main Sanctuary and National Park area, and to facilitate the understanding of tourists about Gir and its wildlife, Interpretation zones have been designed at Devalia and Ambardi. These comprise of chain-link fenced lion area which is Gir in a nutshell, covering all habitat types and wildlife of Gir. It also has a feeding cum living cage for carnivores. The basic aim of creating these facilities is to provide an opportunity to sight lions and other animals in their natural habitat within a short period of time and to reduce tourism pressure on Gir Sanctuary.

G.I.Z., Devalia

An interpretation zone has been created at Devalia that covers 412 ha. of area with double-gate entry point. At present, Spotted Deer, Blue bulls, Wild Pig, Blackbucks, Chinkaras and Sambars along with Lion, Leopard, Jackal and other reptiles are living in their natural habitat in the zone. A good variety of avifauna is also spotted in this area, vultures are also found in Devalia. Tourists have to book the permits online or take a permit from reception centre (subject to availability) at Devalia to visit Gir Interpretation Zone. Forest department provides mini buses AC and non-AC to take visitors inside the G.I.Z. Gypsy service is available from Sinh Sadan, Sasan Gir. There is also an Orientation Centre from where visitors can learn about wildlife, their habitat and its ecological importance.

Tariff for Devalia Bus Safari (7:30 AM to 11 AM and 3:00 PM to 5:00 PM)		
Particulars	Indian (INR)	Foreigner (INR)
Normal Days	150/-	2400/-
Festival Days/ 2nd and 4th Saturday/ Sunday	190/-	3000/-



Tariff for Devalia Gypsy Safari (7:00 AM to 11:00AM and 3:00 PM to 6:00 PM)				
Particulars	Indian (INR)	Foreigner (INR)	Timings	
			Morning	Evening
Normal Days	800/-	5600/-	7:00-7:55 AM	3:00-3:55 PM
			8:00-8:55 AM	4:00-4:55 PM
			9:00-9:55 AM	5:00-5:55 PM
			10:00-10:55 AM	
Festival Days/ 2nd and 4th Saturday/ Sunday	1000/-	7000/-	Same as normal Days	
*Extra 1500 Gypsy charge and 400 Guide charge				



Ambardi Safari Park

The Ambardi Safari Park, 7 kms from Dhari is situated on the bank of Shetrunji river near Ambardi village. Interpretation zone of Ambardi Safari Park is spread in 400 ha to facilitate the tourists to understand Gir and its wildlife. It also provides an opportunity to sight lion and other animals in their natural habitat in a short visit. Permits of Ambardi Safari Park are available at reception centre of Ambardi Safari Park, which is a 100% offline permit system. Forest Department buses are provided for park visit. Visiting time is from 8 AM to 11 AM and 3 PM to 5 PM every day. Tariff of Ambardi Safari Park is same as Devalia Safari Park. Ambardi Safari Park does not provide Gypsy Services.



Eco- tourism facilities are well managed and maintained by the Gujarat Forest Department



Wildlife viewing on designated routes of the Gir Jungle Trail is an extremely satisfying and enriching experience

IMPORTANT NOTES:

- Gir Jungle Trail remains closed from 16th June to 15th October every year.
- Devalia Safari Park remains closed on every WEDNESDAY.
- E-permits don't include Camera Fee, etc.
- The 'e-Permit' is for the visit to 'Gir Jungle Trail' and 'G.I.Z. Devalia Safari' only.
- For the entry in 'Gir Jungle Trail' and 'G.I.Z. Devalia Safari'

All visitors should upload a copy of their Original Photo Identity Proof.

All visitors should carry their Original Photo Identity Proof (Aadhar Card/ Driving License/ Voter ID Card).

For **FOREIGNER**, it is compulsory to carry the original passport as the Photo Identity Proof with him/her.

- **No entry without Original Photo Identity Proof.**

- During the reporting time, the presence of each person mentioned in the 'e-permit' is compulsory.
- One 'e-Permit' allows entry of maximum 6 adults+ 1 child to visit 'Gir Jungle Trail' and 'G.I.Z. Devalia Gypsy Safari' within the selected time period on a particular route only.
- The e-Permit doesn't include the Guide charges (Rs 400/- only) and Gypsy vehicle charges for Gir Jungle trail (Rs 1700/- only) & G.I.Z. Devalia Gypsy Safari (Rs 1500/- only), which need to be paid separately to the respective guide and gypsy owners.
- The authorities of the concerned Forest Department have the full rights to change the visit timings as per the weather/seasonal conditions or sudden unavoidable circumstances.
- 'Gir Jungle Trail' can be booked only through the online booking system and 'G.I.Z. Devalia Gypsy Safari' can be booked through online as well as current booking (it will be done if the permits are available).
- For Gir Jungle Trail and G.I.Z. Devalia Gypsy Safari online booking opens three months prior to the date of visit and closes down 30 minutes before the date of visit.

White-eyed
Buzzard



- If due to technical errors, one does not receive an e-Permit despite a successful financial transaction, a refund will be made within 20 working days. For such issues, kindly send an email to gslcsgir@yahoo.com or call on 02877-285621.
- Gir Jungle Trail and G.I.Z. Devalia Gypsy Safari visitors are requested to arrive at the respective reception centres (Boarding Point) at least 30 minutes prior to the scheduled time.
- In case of late reporting at the boarding point, e-Permit will get cancelled and no refund can be claimed.
- The waiting list will be cleared only as per the cancellation.
- It is compulsory to keep a local registered Guide in the Gypsy safari vehicle, and allocation of the guide will be done by the concerned authority.
- For the Gypsy safari vehicle, each visitor's name, his/her identity card number and type of identity card should be clearly mentioned during the online booking.
- No other person than the registered visitor is allowed in the safari vehicle.
- Bookings with incomplete or incorrect I.D. proof will be considered invalid.
- No Gir Jungle Trail/ G.I.Z. Devalia Gypsy Safari will be permitted against such bookings.
- No refund will be made for such cases.
- Safari Route and other information of G.I.Z. Devalia Gypsy Safari will be provided on the basis of permit numbers during the reporting time at the respective reception centre(s).
- All disputes and legal matters are subject to the jurisdiction of Junagadh District, Gujarat State only.
- The services such as the issue of duplicate permit tickets for lost/mutilated/torn permits and bulk booking for more than 6 people will not be provided.

15. TESTIMONIALS

My visit to Gir National Park and Sanctuary has been a memorable one. The sight of wild animal roaming freely in this beautiful habitat is a sight to behold. I could feel the majesty and aura of the Asiatic lions, the pride of our nation. The Government of Gujarat, Forest Officers, Staff and local people especially the Maldhari and Siddi communities have made untiring efforts to ensure that the rich Flora and Fauna of Gir thrives and is preserved for posterity. I am confident that the Gir lions shall continue to roar forever.

Shri Ram Nath Kovind,
Hon'able President of India.



Today, my heart is filled with joy after visiting Sasan Gir National Park. After profoundly evaluating the efforts taken here for wildlife conservation. I have come to the conclusion that Gir National Park is completely safe and protected. Especially the modern techniques used for Lion conservation and monitoring their prides is extremely appreciated. I also had the privilege to experience generosity and humbleness of the Sasan Gir staff during my stay. My wish is that the humbleness remains continue. I hope this National Park continues to attract those who are interested to know every little thing related to wildlife.

Thank you & Best wishes

Shri Acharya Devvrat
Hon'able Governor of Gujarat



Little Brown Dove



Long-tailed Shrike

The fate of the Asiatic Lion in the Gir forest has been a concern of the IUCN SSC Cat Specialist Group since the chairmanship of Pete Jackson in the 1980s. Then, the Cat SG was worried about the future of the last Asiatic Lions. Today, we are coming to the Gir forest to learn how to conserve a large, charismatic predator in a human dominated landscape. We are impressed by the comprehensiveness of the conservation programme, including the habitats, the prey, the lion, and the people in the near and far vicinity of the Gir forest. And we hope that this outstanding example of successful conservation may be repeated across the distribution range of *Panthera leo leo* !

UM Breitenmoser, Co-chair, IUCN SSC Cat Specialist Group

Sam Nicholson, Co-ordinator of the Africa Lion Database

Hans Bauer, University of Oxford



We had a one-night amazing stay. The early morning safari ride is highly recommended. We encountered 2 male lions out for marking their territories and a lioness lazing around. Food was also amazing. The rooms are spacious, luxurious, well decorated and clean.

Justice Vikram Nath

Hon'able Chief Justice, Gujarat High Court



Our stay here was pleasant and comfortable. Meals were very good like home cooked food. The safari was very enjoyable and we saw majestic lion as well as several other animal and birds. It was very informative and educational too. And we got an insight of the amount of labour that goes into managing the forest and taking care of the animals. Overall, every member thoroughly enjoyed themselves. The staff was very warm and courteous.

Justice Harola Desai

Judge, High Court of Gujarat

This is my 6th or 7th visit to this wonderful forest. What to say about the different Jungle! Mornings are wonderful in the jungle and feel that when such fresh air would be inhaled again. The lions, lioness and cute cubs are compelling me and my family to visit it again and again! The system developed of communication between the personnel among forest department is unbelievable! 'Sinh-Sadan' is exceptionally maintained. Very clean and hygienically maintained. Staff is very courteous.

Shri A. J. Desai

High Court of Gujarat



Many thanks for making my visit memorable and comfortable. We thoroughly enjoyed the experience, and deeply appreciate the efforts of the staff at the Park/ sanctuary, and at the circuit house. Best wishes.

Vice Admiral Shri Girish Luthra

Commander in Chief,
Western Naval Command, Indian Navy

Indian Roller



Common Grey
Mongoose





Indian Leopard

16. DOS AND DON' TS



Dos

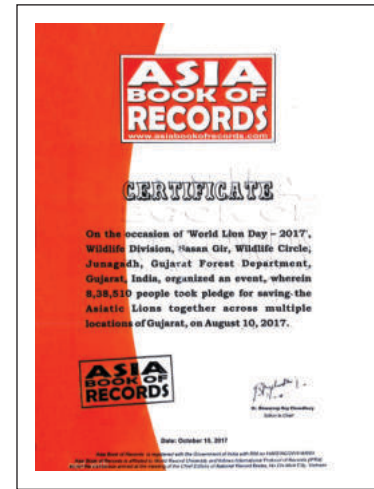
- Make sure you have obtained a valid entry permit.
- Be punctual for the activities.
- Respect animals and their habitat.
- Observe in silence.
- Appreciate the colours and sounds of nature.
- Carry a valid identity card issued by a Government Agency.
- Wear clothes that blend in with the forest landscape.
- Take pictures, but without disturbing wildlife.
- Keep a safe distance from wild animals.
- Drive slowly and carefully. Wild animals have the first right of way.
- Observe the sanctity of holy sites, respect local customs.
- Observe the prescribed route and time limit.
- Obey the laws, rules and regulations of the sanctuary.



Don'ts

- Do not litter.
- Do not feed animals.
- Do not carry pets.
- Do not blow horn.
- Do not light any kind of fire.
- Do not take away flora and fauna in the form of cuttings, fruits, flowers, seeds or roots.
- Do not carry any type of plastic bags inside the sanctuary.
- No trespassing in forest area.
- Do not alight from the vehicle.
- Do not use spotlights or search lights.
- Do not disturb or tease animals.
- Avoid playing any kind of musical instruments or music systems.
- Smoking and consumption of liquor are strictly prohibited.
- Do not carry weapons or explosives inside the sanctuary.
- Do not be disappointed if you don't see a big cat- there are many other interesting creatures and plants to be seen and cherished.

International recognition of Gujarat Forest Department for promoting people's participation in conservation





Nature works in astounding ways!

A curious case of a lioness fostering a leopard cub was recorded in 2019. The leopard cub became a part of the lion pride and was seen playing with lion cubs like its own siblings. This association continued for 45 days till the leopard cub died due to internal ailments.



Gir Welfare Fund, Sasan-Gir

By purchasing this book, you are contributing to the cause of biodiversity conservation and lauding the tireless efforts of the forest staff working in the Asiatic Lion Landscape. Thank you!