





Conserving Asiatic lions and other wildlife is a challenging endeavour requiring numerous individuals' teamwork and hard work. The dedicated efforts of the frontline forest staff, who risk their lives to protect and conserve the Gir, often go unnoticed. These green soldiers of the Gir and their families must be recognised and supported.

With this perspective in mind, the concerned authorities, with members' support, have established a public trust known as "Late Shri Visana Memorial Gir Forest Staff Welfare Association". In short, it is known as the Gir Welfare Fund (GWF). The trust is named in memory of the Late Shri Shaktisinh Visana, who sacrificed his life in the pursuit of wildlife protection and conservation. The primary goal of this trust is to offer support and assistance to the forest personnel dedicated to the protection of Gir and its wildlife.

The association operates the GWF. The funds generated through the activities of the GWF are utilised for various purposes, including improving facilities, developing infrastructure, providing required assistance to the frontline forest staff and their families, and enhancing and implementing wildlife protection and conservation initiatives. Additionally, the trust has established a Group Insurance Policy specifically designed for the frontline forest staff, providing them with additional security and coverage.

The GWF operates the Souvenir shops at Sinh Sadan Campus, Sasan-Gir, and Gir Interpretation Zone, Devaliya. The profits generated from the sale of products at these facilities are directly deposited into the GWF. Each purchase significantly contributes to wildlife protection and conservation efforts and improves the security and coverage of the dedicated green soldiers safeguarding our forests. Additionally, the GWF warmly welcomes donations, providing an opportunity for people to contribute to the cause.

Let us acknowledge the unsung heroes who tirelessly dedicate themselves to their work, even in challenging and often overlooked circumstances.



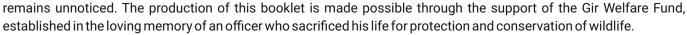
FROM THE PRESIDENT'S DESK

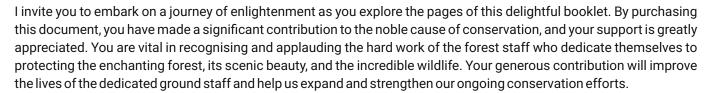
Dear Visitor,

Greetings from Gir National Park & Wildlife Sanctuary!

Welcome to this enchanting place, where you can witness its captivating charm. I extend my gratitude for taking the time to peruse this booklet. The purpose of this booklet is to foster awareness and instil a sense of responsibility for conservation among visitors and others alike.

This booklet results from incredible dedication and effort from the development team. It aims to shed light on the forest staff's arduous work and persistent commitment, which often





Thank you for being a part of this meaningful endeavour!

Enjoy your visit and stay at Gir!

DR. MOHAN RAM, IFS

President Gir Welfare Fund



NOTE TO THE READER...



Gir is a breathtaking landscape where wildlife's magnificence unfolds before you. Renowned as the home of the Asiatic lions, Gir offers visitors a chance to witness the awe-inspiring presence of this majestic species — a cherished memory that will endure a lifetime. The holistic beauty of the Gir landscape captivates every nature enthusiast, leaving them with an irresistible desire to return time and again.

The purpose of this booklet is to provide basic information about Gir that may go unnoticed during a brief visit. It is crafted to cater to various individuals interested in Gir, including amateur nature enthusiasts, professional photographers, park managers, researchers, and occasional tourists. The booklet has been meticulously designed to offer captivating insights into the Gir, presenting information concisely.

We sincerely hope that you find this beautifully crafted booklet enjoyable and enriching as you delve into the wealth of information about this unique landscape, its remarkable wildlife, and its vibrant community. This booklet reflects our earnest efforts to spread awareness and encourage environmentally responsible practices among readers. We wholeheartedly seek your support in fostering sustainable and eco-friendly behaviour during your visit and eagerly anticipate your unwavering support in conserving wildlife and its habitats. Together, let us strive to create a lasting impact in safeguarding the natural environment for future generations.





TEAM GIR WELFARE FUND



Gir Welfare Fund, Sasan-Gir

By choosing this product, you support the Gir Welfare Fund, championing the conservation of our precious flora and fauna. Together let's safeguard the beauty and diversity of the Gir Forest ecosystem.



Image courtesy: Wildlife Division, Sasan-Gir

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GIR FOREST A JOURNEY THROUGH ROARING WILDLIFE HEAVEN

01	Gir Forest An Introduction01	10	Protecting the Wild Management of Gir Forest	33
02	Navigating the Wild Area and Approach03		Tech for the Wild Technology in Conservation and Management	41
03	The Untamed Terrain A Look into the Landscape05	12	Forest and Wildlife Awareness Igniting Love for Nature	45
04	Into the Wild Discovering the Flora & Fauna of Gir Forest 07	13	Ecology and Economy Eco-development in Gir Forest	47
05	A Precious Gem Understanding the Conservation Values15	14	Discovering the Wild Eco-tourism in Gir Forest	49
06	The Majestic Asiatic Lion A Royal Resident of Gir Forest17	15	Training the Protectors Capacity Building of Frontline Staff	57
07	The Human Element Maldhari Nesses and Forest Settlement Villages 21	16	A Fine Balance Organizational Structure for Conservation	59
80	Fabric of Coexistence Managing the Human-Wildlife Conflict27	17	Gir Welfare Fund Contribution Towards Protectors	61
09	Healing Hands Wildlife Veterinary Care and Rehabilitation29	18	Rules of the Jungle Dos and Don'ts for Visitors to Gir Forest	63



Gir forest, located in the semi-arid western part of the country, is the largest tract of dry deciduous forest and is known for being the home of the Majestic Asiatic lions. It is one of India's oldest protected areas. The unique and diverse ecosystem of Gir forest boasts a rich biodiversity and provides habitat for numerous species, including endangered and critically endangered species. It has the highest concentration of two big cats: Asiatic lions and Indian leopards. Moreover, it is home to a large population of marsh crocodiles, making it a significant area for crocodile conservation in India. It is also home to over 630 species of plants, including several species of medicinal plants.

Seven perennial and ephemeral rivers, namely, Hiran, Saraswati, Dhatardi, Shingoda, Machchundari, Ghodavadi, Raval, Ardak and Bhuvatirth, greatly contribute to the ecological diversity of the area and benefit the human population residing in and around Gir forest.

Gir forest is a prime example of successful conservation efforts in India. The Asiatic lion was on the brink of extinction in the early 20^{th} century, with only a few lions left in the wild. Thanks to the conservation efforts of the erstwhile states and the Government of Gujarat, with the support of local people, the population of the Asiatic lion has increased over the years.

Today, the Gir forest is one of the most popular wildlife destinations in India. The forest is visited by thousands of eco-tourists every year who come to witness the beauty of the Majestic Asiatic lions and other wildlife in their natural habitat.



NAVIGATING THE WILD AREA AND APPROACH

Gir forest in the Saurashtra region is a vast wilderness area that covers ~1,880 square kilometers. Gir forest encompasses Gir National Park, Gir Wildlife Sanctuary, Paniya Wildlife Sanctuary, Mitiyala Wildlife Sanctuary and a buffer of reserved and protected forests. It is spread in three districts: Junagadh, Gir-Somnath, and Amreli. To protect and conserve the Majestic Asiatic lions, the State Government declared Gir as a Wildlife Sanctuary on 18th September 1965.

Gir forest is approachable by road, rail and air. The Sasan village is the primary entry point for accessing the wilderness of Gir. It is well-connected to nearby cities like Junagadh, Veraval, and Rajkot via road and rail. Keshod (60 km) and Diu (100 km) are the nearest airports, while Rajkot (160 km) and Ahmedabad (370 km) are more prominent and well-connected airports.

Most of the eco-tourism facilities are located in Sasan village, including the Gir Jungle Safari and Devaliya Gypsy Safari booking windows, Gir souvenir shops, interpretation center, forest guest house, seminar hall, conservation communication center, local eateries/shops, hotels, and resorts. The Sasan village is well-connected to major cities by road, and both GSRTC and private buses run frequently. It is approximately 60 km from Junagadh and 45 km from Veraval, connected to Ahmedabad by a broad-gauge railway line via Junagadh and Rajkot.





The name 'Gir' is derived from the word 'Girmala', which refers to a group of small, rugged hills reflecting the area's geomorphology. The area comprises a mix of dry deciduous forests, savannahs, grasslands, and hills. The eastern part of Gir has more undulating terrain compared to the western. The elevation varies from 100 meters to 617 meters above sea level. The landscape has three seasons: summer, monsoon, and winter. Temperatures range from a minimum of 7°C in December and January to a maximum of 43°C in May. The annual rainfall in the forest is ~980 mm.

The landscape is also home to several water bodies, including rivers, streams, and dams, which play a crucial role in supporting the diverse assemblage of wildlife found in the area. The rivers and dams, located within the sanctuary, are the significant water bodies that support the forest's ecosystem.

The grasslands in the landscape are another important ecosystem that supports the herbivores on which the Asiatic lion, the flagship species of the Gir forest, preys.

In nutshell, the Gir forest landscape is a diverse and unique terrain that boasts several ecosystems and habitats. The rugged hills, grasslands, and water bodies of the forest provide a home to a wide variety of wildlife, including the most iconic and endangered Asiatic lion.





INTO THE WILD

04

DISCOVERING THE FLORA AND FAUNA OF GIR FOREST

4.1 FLORA

The Gir forest is home to an incredibly diverse range of flora, with 631 species (142 trees, 71 shrubs, 279 herbs, 91 climbers, and 48 grass) of plants recorded. Dry deciduous forests and savannah-type grasslands on the fringes characterize the vegetation in the forest. The vegetation in Gir forest changes along the western to eastern parts, with *Anogeissus latifolia* being dominant in the eastern part and *Tectona grandis* being dominant in the western part. The most prominent tree species found in the forest include teak, anogeissus, flame of the forest, acacia, banyan, and jamun. Other notable tree species include khair, tendu, ber, bael, etc. The forest also contains a variety of shrubs, such as karonda, kanthar, aatedi, etc. During the monsoon season, the forest comes alive with a vibrant display of wild flowers, including lilies, wild turmeric, etc. It is also home to several species of orchids, including *Vanda tessellata*. The diverse flora of the Gir forest provides vital habitat for the wide range of wildlife species that call the forest home.

Vegetation in Gir forest is clubbed into three broad habitat types, viz. moist mixed vegetation, thorn forest, and hill forest, and further divided into eight types as given in the table below.









Table 1: Broad habitat types in Gir forest.

Sr. No.		Area (%)	
1	Moist Mixed	a. Moist Mixed Forest	12.76
1.	Vegetation	b. Mixed Forest	16.95
	Thorn Forest	a. Tectona-Acacia-Ziziphus	29.71
0		b. <i>Acacia - Ziziphus -</i> Thorn Forest	7.73
2.		c. Scrubland	4.48
		d. Savanna	1.38
0	Hill Forest	a. Acacia - Lannea - Boswellia	12.54
3.		b. Acacia - Tectona/Anogeissus	13.48
4.	Agriculture/ope	0.29	
5.	Wetland	0.69	

4.2 FAUNA

The Gir forest is renowned for its rich and diverse fauna, and is particularly famous for being the last remaining natural habitat of the Asiatic lion. It harbours 41 species of mammals, 338 species of birds, 47 species of reptiles, 10 species of amphibians, and more than 2000 species of insects. The major carnivores are Asiatic lions, leopards, hyenas, jackals, etc. The major herbivores include spotted deer, nilgai, sambar, four-horned antelope, and chinkara. Hanuman langur is the only primate found in the Gir forest. Other mammals are jungle cats, rusty-spotted cats, civet cats, foxes, honey badgers, wild boars etc. Small mammals like the black-napped hare, Indian pangolin, Indian porcupine, rats, mice, Indian gerbil, and others are also present. Gir forest is also home to many bat species, such as the Indian flying fox, greater short-nosed fruit bat, lesser false vampire bat, black-bearded tomb bat, and little Indian bat.



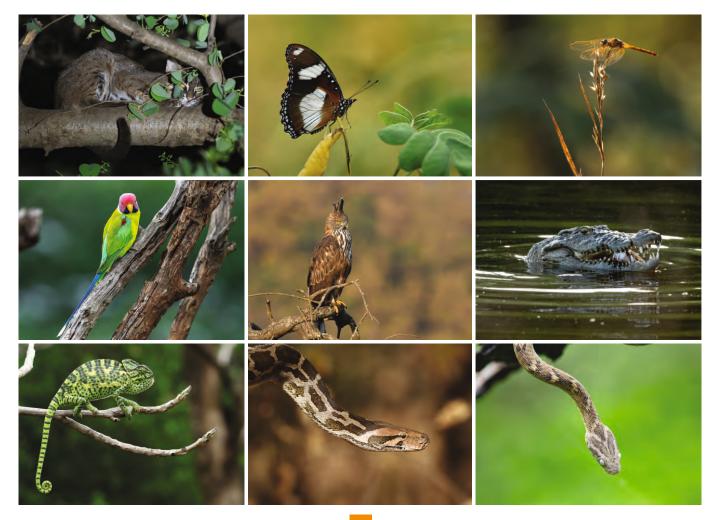
The Gir forest is also known for its large population of marsh crocodiles, which can be spotted in the forest's water bodies. It is also home to a variety of reptiles, including several species of snakes, such as the Indian python and the venomous Russell's viper. The star tortoise and monitor lizard also inhabits in Gir forest.

It is a birdwatcher's paradise and is among the Important Bird Areas which provide shelter and breeding ground to many resident and migratory bird species. Some of the most prominent bird species found in the forest include the paradise flycatcher, Tickell's blue flycatcher, black-napped monarch, Indian pitta, white-browed fantail, Indian peafowl, nightjars, painted sandgrouse, francolins, orioles, parakeets, pigeons, flowerpeckers, quail, buntings, sunbirds, lapwings, robins, minivet, white-eyed buzzard, oriental honey buzzard, shikra, crested hawk eagle, crested serpent eagle, etc. The forest is also home to several species of owls and vultures (seven species).

The diverse wildlife of the Gir forest is an important part of the forest's ecosystem and plays a crucial role in maintaining the balance of the ecosystem. It is also an important site for wildlife conservation efforts, with several initiatives aimed at protecting endangered species, such as the Asiatic lion.











- The only natural habitat with the wild gene pool of the majestic royal animal, which was once the national animal of India the "Asiatic Lion".
- The largest compact tract of dry deciduous forest and an oasis in India's semi-arid Saurashtra region.
- It is the only landscape in Gujarat state where the maximum number of carnivores survive in the wild.
- It is a biodiversity rich area in Gujarat state that was designated as an 'Important Bird Area', with a high number of flora and fauna species.
- It protects the ecological integrity in the landscape for the present and future generations.
- It is the origin place of seven rivers in the Saurashtra region which acts as a lifeline for the biodiversity and native communities.
- The ecosystem services provided by Gir forest play a pivotal role in the local ecology, economy and human well-being.
- The area has immense scientific, educational, economic, recreational, aesthetic, and social significance.
- It has a high biodiversity with unique interaction of nature, wildlife and people, which has evolved over the time with significant ecological and cultural values. Safeguarding the integrity of this delicate interaction is vital for the evolution of this landscape.

In nutshell, the Gir forest is not only important for the conservation of the Asiatic lion but also plays a crucial role in maintaining the ecological balance of the region. The conservation efforts undertaken by the Government of Gujarat have helped to preserve the biodiversity of the forest and promote sustainable development in the region.



THE MAJESTIC ASIATIC LION A ROYAL RESIDENT OF GIR FOREST

Asiatic lions are a symbol of pride for Gujarat and India. They were once widely distributed in Asia, covering Mesopotamia, Arabia, Persia, and the Indian subcontinent. However, they became extinct from most of their distribution range, and the only free-ranging population was confined to the Gir forest. The last lion seen in the wild outside of Saurashtra was reported in 1884. Indiscriminate hunting, habitat loss, and other factors contributed to their decline and extermination from other areas. Conservation efforts for Asiatic lions in Gir forest began in the early 19th century when the Nawab of Junagadh, the ruler of the region, took measures to protect the lions from hunting.

Unfortunately, the famine of 1901-1904 brought the lions into direct conflict with people, ending the earnest protection attempts. People started killing the lions in the name of self-defence, and after the death of the Nawab, about 12 to 13 lions were shot annually. In 1913, the Chief Forest Officer of Junagadh raised the alarm, and the dwindling number of lions was taken seriously.

After independence, the government of Gujarat took several initiatives to conserve and protect the lions. In 1965, the Gir Sanctuary was declared, and the Lion Project was launched in 1972, focusing on habitat management and community participation in conservation efforts. Moreover, the species was accorded the highest level of protection under the Wildlife (Protection) Act, 1972, by categorizing it as Schedule-I.



The lion population has been increasing thanks to successful conservation initiatives spanning over five decades. By the 1990s, they regained their historical lost territory in Girnar, Mitiyala, and the coastal forests of Kodinar. Today, Asiatic lions are present in Gir National Park and Wildlife Sanctuary and its surrounding areas, such as Girnar Wildlife Sanctuary, Mitiyala Wildlife Sanctuary, Paniya Wildlife Sanctuary, coastal areas, Savarkundla, Liliya, and adjoining areas of Amreli and Bhavnagar Districts as satellite populations. They have moved to forested patches through conducive corridors and are now distributed in nine districts of Saurashtra, collectively known as the Asiatic Lion Landscape.

To monitor the Asiatic lion population in the landscape, the Forest Department conducts population estimations every five years. The most recent estimation was carried out in June 2020, which reported a total population of 674 lions in Gujarat.

This conservation success story resulted in the IUCN changing the species category from Critically Endangered to Endangered in 2008.



Table 2: Population statistics of Asiatic lions from 1968 to 2020 (data source: Gujarat Forest Department).

V	Adult		Sub-adult		Oubs		
Year	Male	Female	Male	Female	Un-identified	Cubs	Total
1968	60	64	-	-	-	51	177
1974	40	52	13	25	-	50	180
1979	52	68	13	14	-	58	205
1985	66	75			-	48	239
1990	99	95	-	-	-	63	284
1995	94	100	18	21	-	71	304
2001	101	114	20	18	19	55	327
2005	89	124	-	-	72	74	359
2010	97	162	23	23	29	77	411
2015	109	201	32	28	13	140	523
2020	161	260	45	49	22	137	674







07

THE HUMAN ELEMENT MALDHARI NESSES AND FOREST SETTLEMENT VILLAGES

7.1 MALDHARI NESSES

The maldhari communities are semi-nomadic cattle herders and professional pastoralists who have lived in the Gir forest and surrounding areas for generations, developing a harmonious relationship with wildlife. They live in temporary hamlets called 'nesses' made from locally available materials.

The maldhari population in Gir forest is 4317, with a livestock population of 21746 in 44 nesses. They primarily rely on selling milk and good breeds of livestock for income. However, their increasing population and livestock have had a negative impact on the forest and wildlife due to overconsumption of forest produce and fodder. The practice of selling manure, made by mixing livestock dung and topsoil, has also hindered the nutrient recycling process. The maldharis shifting of nesses for better grazing grounds has resulted in increased pressure on forest resources, leading to competition with wild ungulate populations and damaging grasses and vegetation. Therefore, resettling the maldharis outside Gir forest is desirable for both wildlife preservation and the community's socio-economic well-being.

To secure the survival and well-being of the Asiatic lions and their habitat, the Gir Lion Project was initiated by the State Government in 1972, with provisions for the relocation of all permanent maldhari families from the Gir forest. The project aimed to gradually resettle the maldharis outside the forest by providing them with a suitable package.

Moreover, the forest department has taken several initiatives to involve the maldhari community in the conservation efforts. They have been engaged as eco-guides in safari vehicles and have also been given access to veterinary services and other support systems to help them maintain their livelihoods. Moreover, as the population of lions and the human population in the region continues to grow, it is important to work with such communities to ensure their continued involvement and support in conservation efforts.





7.2 SIDDIS

The Siddi community is one of the ethnic groups living in and around the Gir forest. They are believed to be descendants of Bantu people from Southeast Africa and were brought to India by the Portuguese and British in the 17th and 18th centuries. In Gujarat, they are known by several names, such as Siddi, Siddi Badshah, Badshah, and Habshi. Some villages with a Siddi population include Shirvan, Jambur, Madhupur, and Sasan-Gir.

Despite facing numerous challenges, the Siddi community has made significant contributions to the cultural and social fabric of the region. They have a unique cultural identity with a distinct *Dhamal* dance. It is performed during religious rituals and for eco-tourists visiting hotels and resorts in Gir forest. Their traditional occupations include farming, cattle rearing, and working with the forest department.

The Siddi community has also been involved in conservation efforts in the Gir forest. They have been employed as forest guards, foresters, eco-guides etc., and their intimate knowledge of the forest and its inhabitants has proven invaluable in wildlife conservation. They have also been involved in community-based conservation initiatives such as eco-tourism. The government has made efforts to provide good education and skill training programs, healthcare facilities and promote sustainable livelihood opportunities for the Siddi community.







7.3 FOREST SETTLEMENT VILLAGES

During the reign of the Nawab of Junagadh, some permanent labourers were settled in the Gir forest. Initially, these settlers were given forest land on a 15-year lease for cultivation, which could be renewed upon expiry. Today, there are 14 such settlement villages in Gir forest, covering an area of 5,176.44 hectares with a population of 4,494 humans and 4,241 livestock. The villagers act as the eyes and ears of the forest department, reporting any incidents of poaching, illegal logging, or other activities that may be detrimental to the forest and its wildlife. They are also involved in forest management activities, such as fire prevention and control and regenerating degraded forest areas. The forest department working for development works in these settlements under the Development of Forest Settlement Scheme. Despite being forest settlers, the socio-economic status of these villagers is far better than their counterparts in other tribal areas of Gujarat state. However, they are not satisfied with their current status, which prevents them from using services like bank loans because they are not allowed to mortgage the land leased to them. Therefore, the residents of these villages are calling for a change to convert the status of settlement villages into revenue villages. One pressing issue is their grazing rights in the Gir forest; the majority of these villagers now desire parity with maldharis, and this issue needs to be appropriately addressed as it is of great concern from conservation aspects.







08

FABRIC OF COEXISTENCE MANAGING THE HUMAN-WILDLIFE CONFLICT

Managing human-wildlife conflict in Gir forest is vital for effective wildlife conservation. As human and wildlife populations continue to increase, conflicts become more frequent. Crop damage by herbivores and omnivores, livestock predation, and human injuries and fatalities are common confrontations. Sugarcane and cotton cultivation also increase interactions between humans and wildlife in fringe areas. Fragmentation of habitats and movement areas exacerbates human-wildlife interaction. Effective management strategies are necessary to mitigate conflict and ensure the safety of both humans and wildlife.

The forest department has taken several measures to reduce human-wildlife conflicts and ensure the safety of humans and wildlife. Eco-development projects and involving local communities in conservation efforts have helped to minimize conflicts. A participatory approach involving locals such as *vanya prani mitra* (friends of wildlife) has successfully reduced conflicts. Ex-gratia compensation is provided in case of any unfortunate incidents, and securing open wells in farmers' fields with parapets has also proven effective. Farmers have been given *machans* (a raised platform to keep watch in the agricultural field) to keep a safe distance while watching over their farms to avoid conflicts. These measures have helped to reduce conflicts, although they cannot replace the losses incurred.

The forest department in Gir has introduced an early warning system using modern technology to alert communities of the presence and movement of wildlife, allowing them to take precautions and prevent conflicts. Rapid response teams have been deployed to manage stress calls and unforeseen situations. The department conducts awareness campaigns and training programs for forest staff and stakeholders to prevent conflicts effectively. The successful management of human-wildlife conflict is a result of the involvement of various stakeholders. Overall, the Gir forest is one of the best examples of managing human-wildlife conflict by involving various stakeholders.





HEALING HANDS WILDLIFE VETERINARY CARE AND REHABILITATION

Wildlife veterinary care and rehabilitation is one of the important aspects of wildlife conservation in Gir forest. Human activities such as urbanization, industrialization, and agriculture expansion often result in conflicts with predators, leading to injuries and stress. These conflicts manifest in various forms, such as road and rail accidents, animals getting stuck in villages or wells, and wildlife taking shelter in agricultural farms. To address these issues, the forest department has established dedicated teams of veterinarians and support staff to provide care and rehabilitation services to wildlife, including the endangered Asiatic lions.

Wildlife rescue, capture, and health management have a long history in the landscape, with well-equipped Wildlife Rescue Centers at Sasan, Jasadhar, Jamvala, Amarapur, Junagadh, and Simar, supervised by professionals. These centers are responsible for conducting rescue and treatment operations, health monitoring of wildlife, research, laboratory analyses, investigations, vaccination of domestic cattle, post-mortems of dead wild animals, and veterinary care for animals at the safari parks.

New veterinary and healthcare facilities have been established, and existing ones have been upgraded in the Gir forest. This includes four fully equipped Lion Ambulances operational since 2019 and an upgraded Lion Hospital at Sasan-Gir with modern veterinary care equipment such as a Hematology Analyzer, Biochemistry Analyzer, X-Ray, Bacteriological Incubator, and Laminar Airflow. These facilities enhance the healthcare of wildlife, particularly the endangered Asiatic lions.

The wildlife rehabilitation efforts in Gir forest are widely recognized by national and international institutions, playing a crucial role in protecting and conserving the region's diverse wildlife, including the endangered Asiatic lions.













PROTECTING THE WILD MANAGEMENT OF GIR FOREST

The Gir forest is one of the most significant protected areas in India, and it is home to a vast range of wildlife, including the endangered Asiatic lion. The forest is managed and protected by the forest department with support from local people.

Gir forest is spread in three districts (Junagadh, Amreli, and Gir-Somnath) with two territorial divisions (Gir West Division, Junagadh and Gir East Division, Dhari). To make the task of protection and wildlife management effective and easy, two administrative divisions (Wildlife Division, Sasan-Gir and Task Force Division, Junagadh) have been established.

The protection and management of the Gir forest are critical for the survival of the Asiatic lion population and the conservation of the area's ecological balance. The forest department has implemented various conservation and management measures to safeguard the forest and wildlife. These measures include:





- a. Protection and prevention against poaching, illegal removal of forest produce, fire, livestock grazing, natural calamities, open wells, invasive species, diseases and epidemics, pilgrimage, and heavy traffic movement.
- b. Wildlife and habitat management habitat improvement, development of water points to augment the supply of water, human-wildlife conflict management, rescue, treatment and rehabilitation of wildlife, corridor management, grassland improvement, eco-tone management, new technological interventions for better management, etc.
- c. Eco-development works promoting clean and green energy sources, fodder plot development, economic upliftment of villages, training and skill development, awareness and sensitization, plan for community cooperation for monitoring and protection of forests, basic infrastructure development, veterinary support for livestock (if required), providing 'machans' to reduce human-wildlife conflict, securing the open wells in farmers' fields, grass harvesting and distribution to local people, etc.
- d. Eco-tourism management of interpretation zone, nature education camps, catering, lodging and boarding facilities at forest guest house, management of eco-tourists in eco-tourism zone, orientation program and ecoguide facility, create recreational and educational opportunities for eco-tourists, vehicle tracking and management system.
- e. Law enforcement establishing wildlife crime cell, strengthening of task force, engaging the local people as *vanya prani mitra*, providing incentives to informers, anti-poaching strategies, red alert and special patrolling, etc.
- f. Special strategies Scientific research and monitoring works, special patrolling strategy, networking, modern communication, crime risk management, updating risk factors for sensitive charting, wildlife crime prevention strategy, etc.

Others work -

- Strengthening of protection measures by establishing check-posts and wireless communication networks to control the movement of people and livestock within the sanctuary by introducing patrolling vehicles and weapons.
- Use of soil and moisture conservation techniques.



- Popularization of non-conventional sources of energy.
- Employment generation activities.
- Installing speed breakers on roads to minimize accidents.
- Reduce the speed of trains that commute through the Gir forest.
- Improved animal husbandry.
- Nature education and mass awareness movements through forest youth clubs and other voluntary organizations.
- Human-wildlife conflict mitigation.
- Crisis management.
- Launching of the individual beneficiary scheme.

Outcomes of effective conservation and management

The conservation and management of Gir forest has direct or indirect social, economic and environmental benefits to local communities, researchers, visitors, government, etc. These outcomes include:

- A thriving wildlife population, including the good growth rate of endangered Asiatic lions (>5% annually, 2015 to 2020).
- Under the ambit of flagship species, the wild herbivores and other wildlife populations have also increased.
- An increase in the groundwater table resulting more availability of water on the forest fringes for agricultural and household purposes.
- Increase in vegetation cover, especially palatable grasses and browsable plant species.
- Modernization and technological advancement in rescue, rehabilitation and wildlife veterinary care facilities increased the capability to deal with any unforeseen situation.
- Development and strengthening of baseline database for future conservation and management of the protected areas.



Direct benefits from the Gir forest

- Gir is the centre of attraction for many wildlife enthusiasts, researchers, nature lovers, etc. Nearly 5.6 lakh ecotourists visit annually.
- Four major reservoirs and seven major rivers suffice the need for water for drinking and agriculture.
- *Maldharis* largely dependent on the forest. Around 20,000 livestock and 4,912 forest villagers are estimated to be dependent on the forest.
- Peripheral villages also have a dependency on the Gir forest for natural resources.
- Grasses collected from the grasslands are supplied to the local peoples, panchayats and panjarapoles.
- Eco-tourism activities provide livelihood to several local peoples.
- Gir forests ecology plays a pivotal in the economy of the region.

The Gir forest is managed to conserve its flagship species, "Asiatic lion", and as a unique ecosystem in Saurashtra for future generations. Management of Gir forest is always arduous; management authorities face several challenges in managing this unique landscape. A few of the challenges are as follows:

- Excessive grazing pressure of *maldhari's* livestock and forest villagers leads to habitat degradation and a negative impact on the forage availability for wild herbivores.
- Disturbance due to high vehicular movement on roads passing through the forest.
- Movement of trains across the forests.
- Increasing footfall and expansion of religious complexes.
- Expansion in agriculture practices, changes in land use patterns and practices.
- Human-wildlife conflict.
- Interaction of wildlife with domestic animals leads to an increased risk of disease transmission.

- An increase in eco-tourism led to the development of too much infrastructure.
- Increase in human and livestock population in nesses, forest settlement villages and peripheral villages.
- Increasing industrialization in coastal areas.
- ·Mining/quarrying in coastal and peripheral areas.
- Fragmentation of corridors.











TECHNOLOGY IN CONSERVATION AND MANAGEMENT

Technology plays a vital role in conservation and management efforts, allowing for a better understanding of ecology, habitat, and aiding conservation and management in the Gir forest. With ever-evolving on-ground situations such as urbanization, eco-tourism, human-wildlife conflict, rescue rehabilitation, individual identification, tracking case histories, and early warning systems, regular science-based monitoring enables informed decision-making that safeguards wildlife and humans. The forest department has a long-standing tradition of using the latest state-of-the-art technology to conserve and manage biodiversity.

Several technology-driven scientific initiatives have been implemented in the landscape, including radio-telemetry studies on avian and carnivore species, camera trapping, scat analysis, GPS tracking of safari vehicles, SIMBA, microchip database, GIS system, vegetation mapping, and other methods regularly used to comprehend better and monitor various components of landscape ecology. The radio-telemetry work has been conducted on carnivores and avifauna, which provides a comprehensive understanding of their ecology. It provides scientific data on their spatial distribution, corridor mapping and usage, movement and distribution of satellite populations, seasonal movement patterns, migration courses and patterns, land use patterns, habitat preferences, and activity patterns, and helps manage human-wildlife conflict.











Under carnivore radio-telemetry projects, Asiatic lions and Indian leopards are deployed with radio collars, while under avian telemetry projects, 16 species of birds are deployed with solar charging-based transmitters. These species include Lesser Floricans, six species of vultures (Indian, white-rumped, king, Himalayan griffon, Eurasian griffon, and Egyptian vulture), three species of eagles (greater spotted eagle, Indian spotted eagle and tawny eagle), two species of harriers (pallid harrier and marsh harrier), two species of cranes (common and demoiselle), lesser flamingos, and the recently reintroduced Indian grey hornbills in Gir forest.

The forest department has also developed a Forest Management Information System (FMIS) called e-GujForest, which has an easy-to-use Graphical User Interface (GUI) that helps record observations regarding wildlife protection and maps them for further use in devising management strategies.

Frontline forest staff has been equipped with new digital handheld wireless radios and vehicle sets for better communication along the landscape. Entry and exit points are equipped with CCTV cameras for surveillance. Safari vehicles used for eco-tourism in Gir jungle safari and Devaliya safari park are also equipped with GPS units to track their movement during the safari.

An Artificial Intelligence (AI)-based photo-identification software, SIMBA (Software with Intelligent Marking Based identification of Asiatic lions), has been developed with a user-friendly graphical interface specifically designed to distinguish patterns and marks. The software helps easily identify Asiatic lions based on their vibrissae pattern and other facial markings. Computer-assisted photo-identification software is a helpful tool for understanding population demographics, dispersal, social systems of the lions, and expanding conservation and management efforts.

Rescued lions and leopards are microchipped with a non-pathogenic unique chip that lasts lifelong, and their case histories are maintained in the database system, helping in monitoring and tracking and providing valuable insights about their movement and behaviour, as well as relevance in human-wildlife conflict mitigation.

The Gir Hi-Tech Monitoring Unit has been established with state-of-the-art facilities at Sasan-Gir, Gujarat, to monitor all these initiatives under a single platform.



FOREST AND WILDLIFE AWARENESS IGNITING LOVE FOR NATURE

Raising awareness plays a crucial role in conserving and protecting forests and wildlife. It serves as an invaluable means to educate individuals and communities about the significance of these natural ecosystems and the urgent necessity to preserve them. In an effort to disseminate knowledge, the Gujarat Forest Department organizes workshops and seminars that focus on various aspects, including the importance of forests, the conservation of wildlife and their habitat, and the essential measures needed to ensure their survival.

Additionally, various days related to forest, environment and wildlife, such as world environment day, world wildlife day, world lion day etc., are being celebrated by involving educational institutions, wildlife enthusiasts, local people and various other stakeholders.

Moreover, nature education camps play a crucial role in cultivating awareness and fostering appreciation among children and young adults, enabling them to develop a direct and immersive connection with nature. Since 1976, the Gujarat Forest Department has been organizing nature education camps for students and teachers in Gir forest, making it a pioneering protected area in India in this regard. The campers are exposed to wildlife and nature through informative lectures, interactive discussions, and engaging demonstrations. On average, 90 nature education camps are held annually to enhance participants' awareness. Furthermore, specialized camps are conducted to train nature conservation enthusiasts, equipping them with the necessary skills to organize similar educational camps in the future.









ECOLOGY AND ECONOMY ECO-DEVELOPMENT IN GIR FOREST

Eco-development is a concept that seeks to balance economic growth with nature conservation. It aims to protect ecologically important resources from excessive or inappropriate pressure resulting from human needs and activities. It involves promoting conservation by enhancing the living conditions of local communities. To conserve biodiversity and improve the management of protected areas while involving local communities, the India Eco-development project was implemented by the Ministry of Environment and Forests, Government of India, and various state forest departments, including the Gujarat Forest Department. The Gir eco-development project was implemented in 57 revenue villages within 2 km of the Gir Wildlife Sanctuary's boundary, 14 forest settlement villages, and 44 Maldhari nesses. The scheme included various conservation-friendly activities such as pasture development, soil and moisture conservation, popularizing non-conventional energy sources, livestock immunization, employment generation, distribution of *machans*, securing the open wells with parapet walls, and community development programs.

The Biodiversity Conservation and Rural Livelihood Improvement Project, funded by the World Bank, was implemented in Gir between 2012-2018 and aimed at preserving biodiversity in specific landscapes, including protected areas and important conservation areas while enhancing rural livelihoods through participatory approaches. Presently, several activities such as soil and moisture conservation, basic facilities in settlement and peripheral villages, beneficiary-oriented schemes (*machans*, parapet wall around open wells), promoting clean and green energy sources, reducing the dependency of local communities on forests, etc., are ongoing. Moreover, the implementation of eco-development initiatives also improved different aspects of wildlife research and monitoring in Gir forest.

In nutshell, eco-development in Gir forest is a holistic approach that strives to achieve a balance between economic growth, social well-being, and nature conservation. It promotes sustainable practices, encourages community involvement, and relies on collective action to create a harmonious and sustainable future.



DISCOVERING THE WILD ECO-TOURISM IN GIR FOREST

Since time immemorial, the Gir forest has been synonymous with the majestic Asiatic lions. It bestows a rich diversity of flora, fauna and landscapes in the Saurashtra region. A diverse assemblage of more than 600 species of wild flora, 41 species of mammals, 47 species of reptiles and over 300 species of resident and migratory birds gives serene and fascinating experiences to visitors in the vast swaths of forest. The presence of rolling hills and rivers originating from it makes it look more enigmatic. One can witness the tints and hues of Gir forest in different seasons, which gives an altogether different experience. It has had the glory of being one of the best wildlife areas in India. Moreover, it is the origin of cultural and religious evolution in Gujarat's Kathiawar region.

Eco-tourism is operated to minimize the negative impact of visitors on protected areas and wildlife, boost the local economy, enhance visitors' knowledge of their visit through awareness and interpretation, and make them aware for the conservation of nature and biodiversity. Gir has three eco-tourism destinations: Gir Jungle Safari, Gir Interpretation Zone, Devaliya and Ambardi Wildlife Interpretation Zone, Dhari. These destinations attract a large number of ecotourists every year.







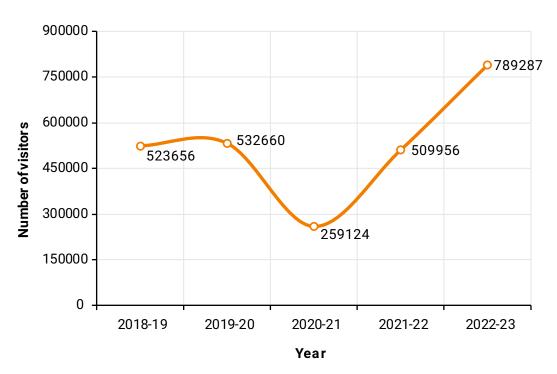


Fig. Inflow of visitors visiting Gir forest in last five years. The relatively low inflow of visitors in 2020-21 is due to the Covid-19 pandemic.

14.1. GIR JUNGLE SAFARI

Gir Jungle Safaris are operated from Sinh Sadan in Sasan village. These safaris offer visitors an incredible opportunity to experience the enchanting and pristine wilderness of the Gir forest. It boasts thirteen different routes, each showcasing the diverse flora and fauna of the area. To enhance the safari experience, trained and experienced ecoguides accompany visitors on regularly scheduled trips, providing interpretive insights. An orientation centre at the Sinh Sadan campus offers valuable information on the forest and wildlife's ecological importance. To obtain a safari permit, visitors must book online through the official website, https://girlion.gujarat.gov.in (for more details, please visit this website). Permit bookings open three months in advance and close two hours before the scheduled visit. Refunds for epermits are available according to the specified rules and regulations.

Gir forest is approachable by road from Junagadh-Mendarda-Talala and Junagadh-Visavadar state highways from Junagadh (60 km); Veraval-Talala-Sasan state highway from Veraval (45 km); Amreli-Dhari-Kodinar state highway from Amreli, Una-Tulsishyam-Dhari and Una-Jamvala state highways from Una. The western railway station is located at Sasan, approximately 60 km from Junagadh and 45 km from Veraval. Taxi and bus services for Sasan-Gir are readily available from both Junagadh and Veraval train stations. Keshod is the closest airport (60 km). Another nearest airport is Diu (100 km) from Sasan. The other two big and better-connected airports are Rajkot (160 km) and Ahmedabad (370 km).

Time schedule:

Season	Days	Time schedule
Winter (16 th October to 28 th / 29 th February)	Monday to Sunday	06:30 to 09:30 hours 09:30 to 12:30 hours 15:00 to 18:00 hours
Summer (1st March to 15th June)	Monday to Sunday	06:00 to 09:00 hours 09:00 to 12:00 hours 16:00 to 19:00 hours

Note: Gir Jungle Safari remains closed from 16th June to 15th October every year.





14.2. GIR INTERPRETATION ZONE, DEVALIYA

Nestled around 12 km from Sasan village in the Gir forest, the Gir Interpretation Zone, Devaliya (popularly known as Devaliya Safari Park), is a mini version of Gir. The 412-hectare safari park has almost all representative wildlife and forests of Gir. The foresight behind the safari park's conception was to create awareness about the Gir ecosystem's conservation values and provide visitors with a unique and unforgettable experience. Within a short period, one can expect to sight Asiatic lions (only found freely venturing in the Gujarat state) and other wildlife in their almost natural habitat. An open moat showcases the beauty of the Indian leopard in an enchanting near-natural world. One can also experience and appreciate the beauty of other wildlife such as spotted deer, sambar, blue bull, blackbuck, wild boar, Indian golden jackal, endangered and critically endangered vulture species, jungle cat and myriad species of birds. The safari park is best observed in three different seasons (monsoon, winter, and summer) in a year that gives an altogether different experience of tints and hues of the park.

The park has three safari routes to observe the wildlife and wilderness. The Forest department specifically designed mini safari buses to operate from Devaliya Safari Park's reception area. These safaris ensure an excellent sighting and unique wilderness experience. To have a personalized safari experience, one can also take a gypsy safari with a trained eco-guide from Sinh Sadan campus, Sasan-Gir. Current bookings can also be made (subject to availability) from the reception centre at Devaliya Safari Park for bus safari and the Devaliya Gypsy safari booking office in Sinh Sadan campus, Sasan-Gir for gypsy.

Time schedule:

Vehicle type	Particulars	Time schedule		
Mini bus	Monday to Sunday	7:30 to 11:00 hours 15:00 to 17:00 hours		
Gypsy Safari	Monday to Sunday	7:30 to 11:00 hours 15:00 to 18:00 hours		
Note: Devaliya Safari Park remains closed every Wednesday. Safari vehicles are operated on hourly basis as per the permit limits.				

14.3. AMBARDI WILDLIFE INTERPRETATION ZONE, DHARI

Situated on the mighty Shetrunji river banks, the Ambardi Wildlife Interpretation Zone (popularly known as Ambardi Safari Park) is located approximately 7 km from Dhari in Gujarat state. Established in 2017 to create another unique destination for wildlife lovers and enthusiasts, it spans over 365 hectares. The beautiful undulating terrain, proximity to a large water reservoir, and the famous Khodiyar temple give visitors a unique and unforgettable experience. It offers a remarkable diversity of flora and fauna with a feel of a savannah-type landscape and can be viewed as an extension of Gir forests' eastern part.

The forethought behind the park's conception was to further augment the Asiatic lion conservation efforts and raise awareness among the masses to connect them towards the cause of conservation. Diverse plant species create an assemblage of habitats needed for the proliferation of wild species. It shelters a healthy population of the Asiatic lion, Indian leopard, chinkara, blue bull, spotted deer, Indian porcupine, monitor lizard, birds and much more wild fauna.

It is easily accessible by road from Amreli-Dhari-Kodinar state highway from Amreli-Una-Tulasishyam-Dhari and Una-Jamvala state highways from Una. The nearest bus stand (Dhari bus stand) is 5 km from the park, while the nearest inter-city bus stand is 9 km away. The main railhead on the western railways' meter-gauge railway line is around 6 km from the park. Around 140 km from Dhari, Rajkot is the closest airport.

Time schedule:

Vehicle type	Days	Time schedule	
Mini bus	Monday to Sunday	08:00 to 11:00 hours 15:00 to 18:00 hours	
Note: Ambardi Safari Park remains closed every Tuesday.			



For more details on permit charges, safari vehicle charges and other charges for Gir Jungle Safari, Gir Interpretation Zone, Devaliya and Ambardi Wildlife Interpretation Zone please visit https://girlion.gujarat.gov.in or scan the QR code.









TRAINING THE PROTECTORS CAPACITY BUILDING OF FRONTLINE STAFF

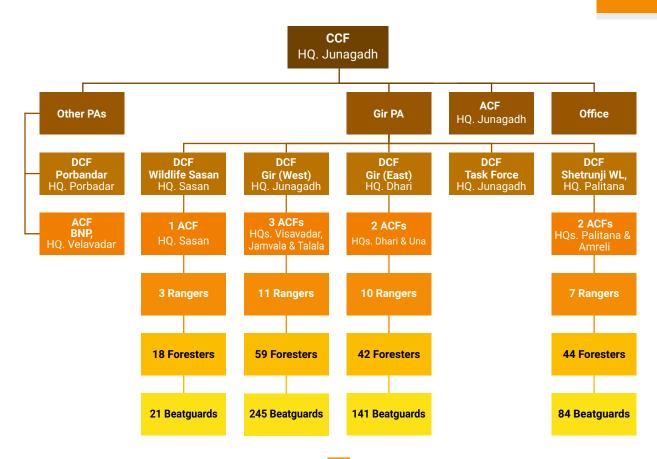
The frontline staff of Gir forest is consistently involved in their fundamental objective of wildlife conservation. To enhance their skills and knowledge, the frontline staff regularly participate in in-house workshops and field technique exercises conducted by trained officers and resource persons. These training programs cover a wide range of topics such as rescue and rehabilitation, ecology of Gir forest, technical aspects like the construction of check-dams and causeways, habitat manipulation activities, maintenance of communication systems, forest and wildlife laws, legal procedures, collection and confirmation of evidence, as well as the use and maintenance of weapons. Furthermore, the staff members receive training on wildlife health monitoring, monitoring of radio-collared carnivores and birds, wetland ecology, grassland ecology, and computer skills. These training programs serve as the main avenue for capacity building for staff members.

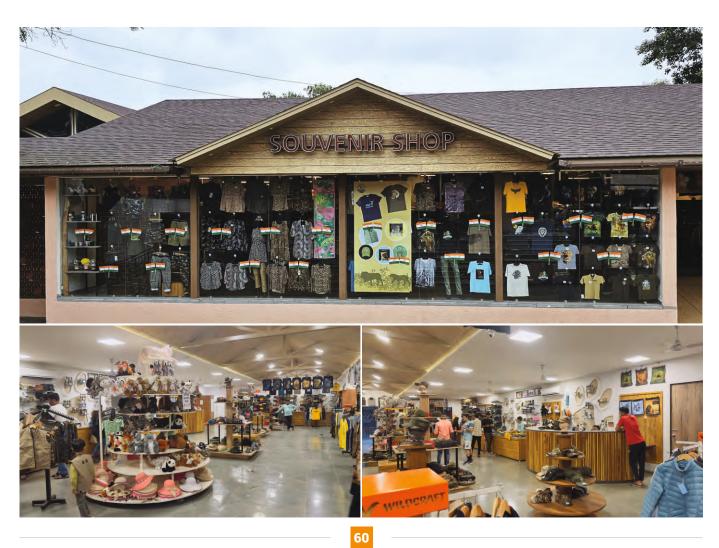
In addition to the staff members of Gir forest, training programs are extended to various stakeholders and target groups. These include forest officers from other forest divisions, ecotourism guides, trackers, Vanyaprani Mitras (friends of the wildlife), police personnel, judiciary personnel, forest staff from other states, as well as personnel from the customs and revenue departments. Furthermore, training is also provided to rural youth, nature educators, students, All India Service officers, and other interested individuals.





A FINE BALANCE ORGANIZATIONAL STRUCTURE FOR CONSERVATION





GIR WELFARE FUND CONTRIBUTION TOWARDS PROTECTORS

Conserving Asiatic lions and other wildlife is a challenging task. The dedicated efforts of frontline forest staff, who risk their lives to protect the Asiatic Lion Landscape, often go unnoticed. To recognize and support these green soldiers and their families, a public trust called the "Late Shri Visana Memorial Gir Forest Staff Welfare Association" (Gir Welfare Fund or GWF) was established in memory of Late Shri Shaktisinh Visana, who sacrificed his life in the pursuit of wildlife protection and conservation.

The GWF operates souvenir shops at Sinh Sadan Campus, Sasan-Gir, and Gir Interpretation Zone, Devaliya. The profits generated from the sale of products at these facilities are directly deposited into the GWF. Donations are also welcomed from those wishing to contribute to the cause. The funds generated by the GWF are used for various purposes, including improving facilities, developing infrastructure, assisting frontline staff and their families, and enhancing wildlife protection measures. Additionally, the trust has set up a Group Insurance Policy designed for forest staff to provide them with added security and coverage.







RULES OF THE JUNGLE

DOS AND DON'TS FOR VISITORS TO GIR FOREST

Dos



Don'ts



- Ensure you obtain a valid entry permit from the Gujarat Forest Department's official website (https://girlion.gujarat.gov.in).
- Be an early bird report at the reception centre at least 15 minutes before departure.
- Carry a valid identity card issued by the concerned authority.
- Respect the wildlife, their habits and their habitat.
- Keep a safe distance from wildlife and observe silence.
- Appreciate the colours and sounds of nature.
- Try to wear clothes that blend with the forest landscape.
- Drive slowly and carefully. Wildlife has its right of way.
- Observe the prescribed route and time limit in the forest.
- Capture memories without disturbing the wildlife.
- Observe the sanctity of holy sites, and respect the local customs.
- Obey the laws, rules and regulations of the Gir National Park and Sanctuary.

- Do not litter.
- Do not feed animals.
- Do not carry pets.
- No honking.
- Do not take away flora & fauna in the form of cuttings, seeds, roots or trophies.
- Plastic or items made up of plastic are prohibited in the forest area.
- No trespassing in forest areas.
- Do not alight from the vehicle.
- Do not use spotlights or searchlights.
- Do not disturb or tease wildlife.
- Avoid playing any kind of musical instrument.
- Smoking & liquor are strictly prohibited.
- Do not carry weapons or explosives inside the Gir National Park and Sanctuary.
- Do not be disappointed if you don't see a big cat cherish the beauty of the landscape and other wildlife.





