

AERIAL VIEW OF KANSAL LOGHUT



Sukhna Wildlife Sanctuary, At a glance



DEPARTMENT OF FORESTS AND WILDLIFE, UNION TERRITORY, CHANDIGARH

Paryavaran Bhawan, 2nd Floor, Sector 19-B, Madhya Marg, Chandigarh-160019

Ph. : 0172-2700284, 2700217 Email. : forestchandigarh@gmail.com

Please visit : http://chandigarh.gov.in/dept_forest.htm



DEPARTMENT OF FORESTS AND WILDLIFE, UNION TERRITORY, CHANDIGARH

**Santosh Kumar, IFS
Chief Conservator of Forests &
Chief Wildlife Warden
Union Territory, Chandigarh**



सत्यमेव जयते

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FOREWORD

The Sukhna Wildlife Sanctuary is green lungs of the city beautiful. It comprises of hilly catchment area of Sukhna Lake. To save lake and to maintain its pristine glory, extensive & intensive soil & moisture conservation works has been carried out in hilly catchment. Apart from this for biodiversity restoration, lantana weed has also been suppressed successfully in sanctuary.

The species richness and diversity of flora and fauna in the sanctuary is of high order. This all is possible by scientific management of protected area. Recently, the first ever Wildlife Census was carried out in Dec, 2010 which gave away enthusiastic results.

Sukhna Wildlife Sanctuary is also a potential place for Eco-tourism, Recreation, Research, Study, and other extension activities. All these activities are promoted and carried out on regular basis.

Department published a coffee table book on the Sukhna Wildlife Sanctuary during 2005. Since then, many improvements has been carried out in scientific management, infrastructure etc of sanctuary like-Wildlife Census Exercise, Digital Trek Route Maps, Tourist facilities, use of Camera traps etc. To highlight all such improvements, the book has been revised for convenience of visitors.

I would like to acknowledge the efforts made by Shri Birendra Choudhary, IFS, DCF (Wildlife), Mrs. Arpana, IFS, DCF (BG & NR) & Sh. Jatinder Verma, PA, in making & improving this Coffee table book, which I am sure will be of immense help to tourists as well as to wildlife lover. While going through the book, all the relevant points pertaining to protected area, Eco-tourism etc can be well understood.

(Santosh Kumar)

INTRODUCTION

In Chandigarh, Sukhna Lake was constructed in 1958 across the Sukhna Choe, a seasonal stream flowing down the Shivalik hills, to enhance the aesthetic appeal of the city and as a major tourist attraction. The creation of the lake was an integral part of the master plan of Chandigarh prepared by famous French Architect Le-Corbusier. The total catchment area, hilly and agriculture land, of this manmade lake is 4,207 hac. The Shivalik hills in the Sukhna catchment are ecologically sensitive and geographically unstable and are highly prone to erosion during rains. Therefore after the initial year of the construction of lake the siltation rate was very high due to soil run off from the hilly catchment area.

The alarming rate of soil erosion and fast siltation of the lake forced the erstwhile Punjab Government to acquire the hilly catchment area of the lake. During 1960's 26 Sq kms of the land was acquired for the soil and moisture conservation measures. In order to minimize & control soil erosion from hilly catchment area, various vegetative and engineering methods were adopted by Forest Department. These soil & water conservation measures under-taken on sustained basis yielded very good results and the rate of siltation of the lake has reduced significantly from 150 ton/hac/year to 3-5 ton/hac/year. Soil conservation measures supplemented with massive afforestation led to the development of very good forest in hilly catchment area which is now an ideal habitat for wide variety of fauna. This area (26 sq.kms) due to Ecological Faunal, Floral, Geomorphological, Natural and Zoological significance for the purpose of protecting, propagating and developing wildlife and its environment was declared as Wildlife Sanctuary vide Chandigarh Administration Notification No. 694-HII(4)-98/4519 dated 6th March, 1998.

SOIL CONSERVATION & HABITAT IMPROVEMENT IN SUKHNA WILDLIFE SANCTUARY

STRATEGY

The effort to save Sukhna Lake started with the acquisition of the present 26 Sq. kms of the land area in phases and taking up intensive tree plantation on this land. In the early seventies, soil conservation measures at a rather modest scale were taken up in the catchment. But even the well planned plantation schemes could not yield the desired results because it was a formidable task to achieve a reasonable success rate in this most degraded and difficult terrain. There was a network of hundreds of ever deepening and widening gullies with frequent landslides which made it difficult to achieved high rate of success in tree plantation. Therefore it was decided to go for intensive soil conservation measures alongwith tree plantation.

VEGETATIVE MEASURES

- Plantation of Indigenous species
- Plantation of soil binding grasses (Arundo donax etc.)
- Patch sowing in hilly slopes
- Natural regeneration



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[3]

ENGINEERING MEASURES

- Silt retention dams
- Gully plugging structures
- Grade stabilizers, spur, revetment etc.
- Desiltation of silted up dams

RESULTS ACHIEVED

- "Siltation rate reduced from 150 Ton/Ha/Yr to 3-5 Ton/Ha/Yr"
- Physical and Chemical properties of soil has improved in terms of
 - Low pH
 - Increased Phosphorous and Potash
 - Increased Organic matter build up
 - Improved root respiration
 - Formation & Accumulation of more litter on the forest floor.
- Overall tree & Bush Density improved
- Development of good wildlife habitat
- There is appreciable increase in the population of wild animals like – Sambhar, Chital, Peacock, Red Jungle Fowl, Porcupines, and Pangolin etc.



Natural Regeneration of Shrubs (Bushes)



Plantation of Arundo donax and Grasses along the Choe Banks



Plantation & Patch Sowing in hilly slopes



Silt Retention Dam in the Catchment Area



Gully plugging structure in Catchment Area



Grade Stabilizer

WILDLIFE CENSUS IN SUKHNA WILDLIFE SANCTUARY



Wildlife Census Team



Wildlife Census Exercise



Felicitation of WII, Dehradun Expert by CF & CWLW, U.T. Chandigarh

The first wild life census exercise was carried out in 2010. The census was carried out by The Department of Forests & Wildlife, with the technical assistance of experts from Wildlife Institute of India, Dehradun. Other stakeholders which participated in census exercise were students of Panjab University, NGO's and Birding experts. As per census report :

- 1) The forest of Sukhna Wildlife Sanctuary is healthy, with good ecological diversity and least disturbance. During the two days survey, teams encountered 9 species of mammals and 63 species of birds.
- 2) As per the report, the presence of all these Mammalian species suggest the potential of Sukhna Wildlife Sanctuary as one of the important wildlife and biodiversity conservation area.
- 3) The total abundance estimation of Sambhar in Sukhna Wildlife Sanctuary is between 1000 to 1200.
- 4) The total abundance estimation of Peafowl in Sukhna Wildlife Sanctuary is between 900 to 1100.



The average group size of Sambhar in sanctuary is between 3.39 to 10.07 one of the highest in any protected area in India

Table : Mammalian Species with their WPA and IUCN status reported during survey

| S.No | Common Name | Scientific Name | WPA Status | IUCN Status |
|------|------------------|-------------------------------|--------------|-----------------|
| 1 | Leopard | <i>Panthera pardus</i> | Schedule I | Near Threatened |
| 2 | Sambar | <i>Rusa unicolor</i> | Schedule III | Vulnerable |
| 3 | Chital | <i>Axis Axis</i> | Schedule III | Least Concern |
| 4 | Wild boar | <i>Sus scrofa</i> | Schedule III | Least Concern |
| 5 | Indian Porcupine | <i>Hystrix indica</i> | Schedule IV | Least Concern |
| 6 | Indian Pangolin | <i>Manis crassicaudata</i> | Schedule I | Near Threatened |
| 7 | Blacknaped Hare | <i>Lepus Nigricollis</i> | Not Listed | Least Concern |
| 8 | Golden Jackal | <i>Carnis aureus</i> | Schedule II | Least Concern |
| 9 | Gray Langur | <i>Semnopithecus entellus</i> | Schedule II | Least Concern |

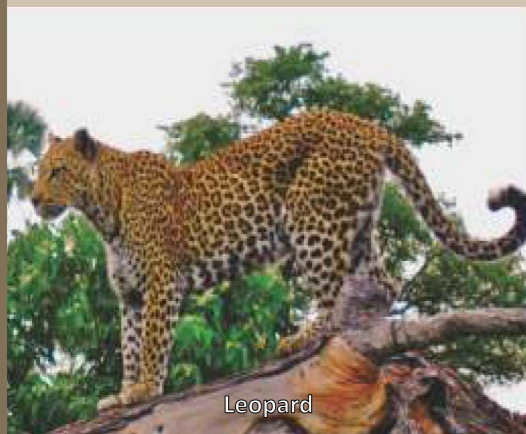
CAMERA TRAPS

The species richness and diversity in Sukhna Wild Life Sanctuary is of high order. In the sanctuary both nocturnal and diurnal species are found. To ascertain the status of the fauna department have placed camera trap at suitable locations.





Dhak Tree



Leopard



Chittal

FLORA

There are wide variety of trees, shrubs, herbs, grasses and climbers. The prominent among them are : Acacia catechu (*Khair*), Acacia modesta (*Phulai*), Acacia arabica (*Kikar*), Acacia leucophloea (*Raeru*), Dalbergia sissoo (*Shisham*), Anogeissus latifolia (*Chhal*), Azadirachta indica (*Neem*), Bombax ceiba (*Semal*), Butea frondosa (*Dhak*), Bauhinia racemosa (*Kachnar*), Emblica officinalis (*Amla*), Morus alba (*Tut*), Lannea grandis (*Jhingini*), Diospyros montana (*Kendu*), Murraya koenigii (*Kari patta*), Prosopis juliflora (*Mesquite*), Cassia fistula (*Amaltas*), Ziziphus jujoba (*Ber*), Vitex negundo (*Nirgundi*) etc.

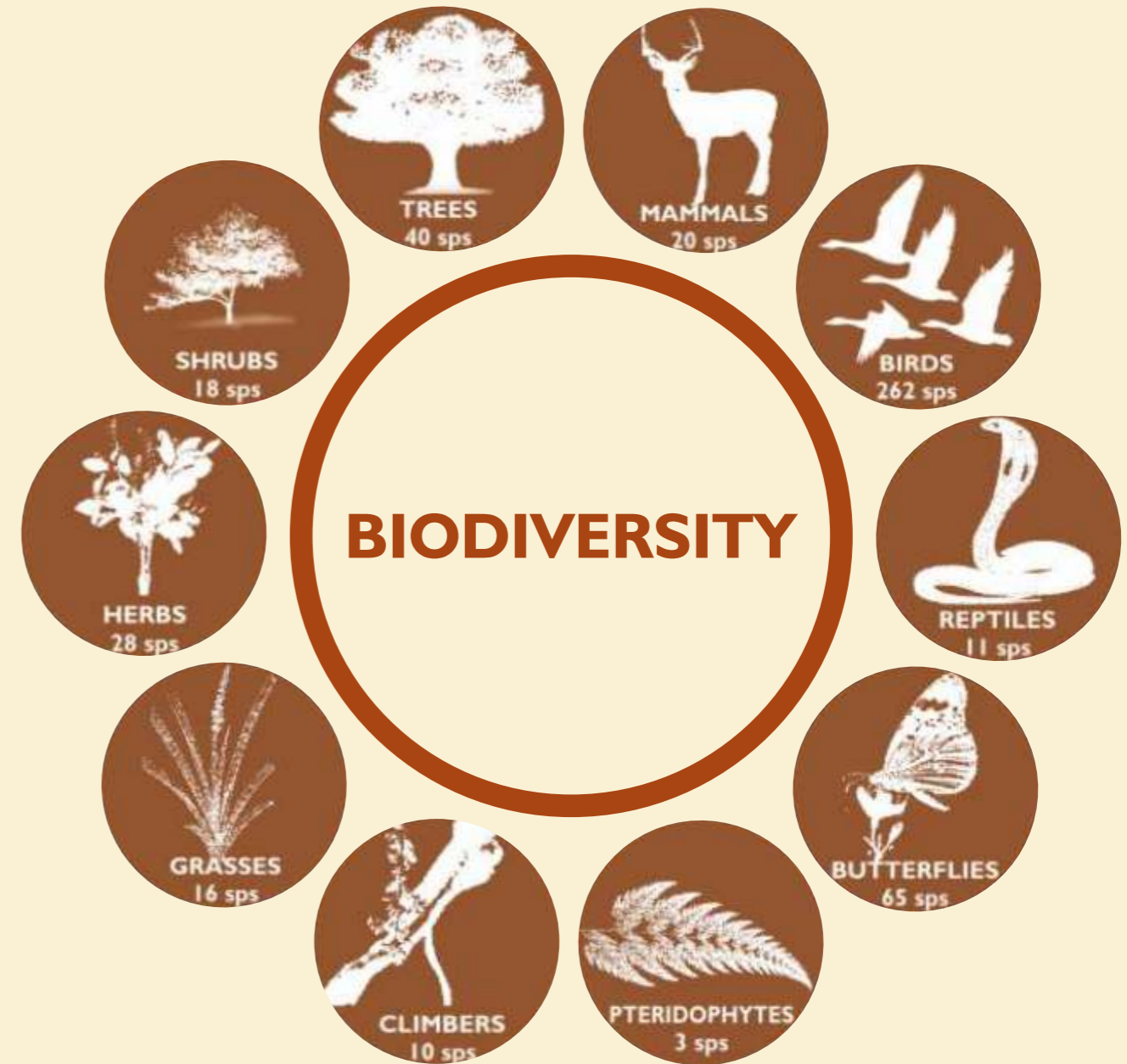
FAUNA

1. MAMMALS : Leopard Sambhar, Spotted Deer (Chittal), Pangolin (ant eater), Wild boar, Jackal, Small Indian Civet, Jungle Cat, Porcupine, Hanuman Langur, Rhesus Monkey, Indian Hare, Common-Mongoose, Common rat, Squirrel etc.

2. BIRDS : There are more than 262 varieties of birds including aquatic birds. Prominent among them are Peacock, Red jungle fowl, Grey partridge, Cuckoos, Night jars, Golden Oriole, Kingfisher, Swifts, Hoopoes, Hornbills, Barbets, Woodpeckers, Rollers, Barn owls, Parrots, Doves, Jacanas, Plovers, Coots, Hawks, Geese, Swan, Ducks, etc.

3. REPTILES : Cobra, Rat snake, Common Krait, Russell’s viper, Indian Python and common Monitor (Gho) etc.

4. INSECTS : Wide variety of Butterflies, Moth, Honey-bee and other micro-organisms are in abundance.



EXTENSION ACTIVITIES



Flagging off nature trek during wildlife week



Public during Trekking



The Administrator, UT Chandigarh visit to Migratory Bird Watching site near Regulator end of Sukhna Lake on 30.12.2016

NATURE TRAILS

With a view to promote Eco-tourism and to educate and create awareness among masses about our rich floral and faunal heritage, in the Sanctuary, 'Nature Trails/Trek Routes' has been created throughout the length and breadth of the forest. There are 8 numbers of designated trek routes in Sukhna Wildlife Sanctuary:-

- Route No. 1 : Kansal Log Hut and back (Bhagwanpura side) (5 km)
- Route No. 2 : Kansal Log Hut and back (towards Nepli) (2.5 km)
- Route No. 3 : Kansal Log Hut to Nepli Gate (9.0 km)
- Route No. 4 : Kansal Log Hut to Sukhomajri (5 km)
- Route No. 5 : Nepli Gate to Nathewala and back (6 km)
- Route No. 6 : Nepli Gate to Nepli Inspection Hut via Nathewala (6km)
- Route No. 7 : Nepli Gate to Nepli Inspection Hut via Ghareri (5 km)
- Route No. 8 : Nepli Inspection Hut to Kansal Log Hut (8 km)

Terrain of all the trek routes is undulating with moderate to gentle slopes at places. In Nepli to Kansal, Trek Route No. 8, one has to climb 3 small hillocks. Maximum height is 1500 ft., wide variety of Flora & Fauna is found all along the treks.

NATURE TREK

Annual Trekking Calendar is being prepared and released on website of Chandigarh Administration every year by Department of Forests & Wildlife, UT Chandigarh for the convenience of citizens of Chandigarh who are interested in adventure trekking. The Nature Trek is started from Nepli and culminated at Kansal Log Hut. The Trek is approximately 7.5 Km in length and passing through three Hillocks reaching a maximum height of 1500 feet.

How to Reach

First Reach the Mahadev Temple at village Saketri and the Nepli Entrance Gate to Sukhna Wildlife Sanctuary is located in front of that with clear signage written as "Way to Nepli Gate". It is about 1.5 Km from Regulator end of Sukhna Lake.

How to Register or to deposit the form

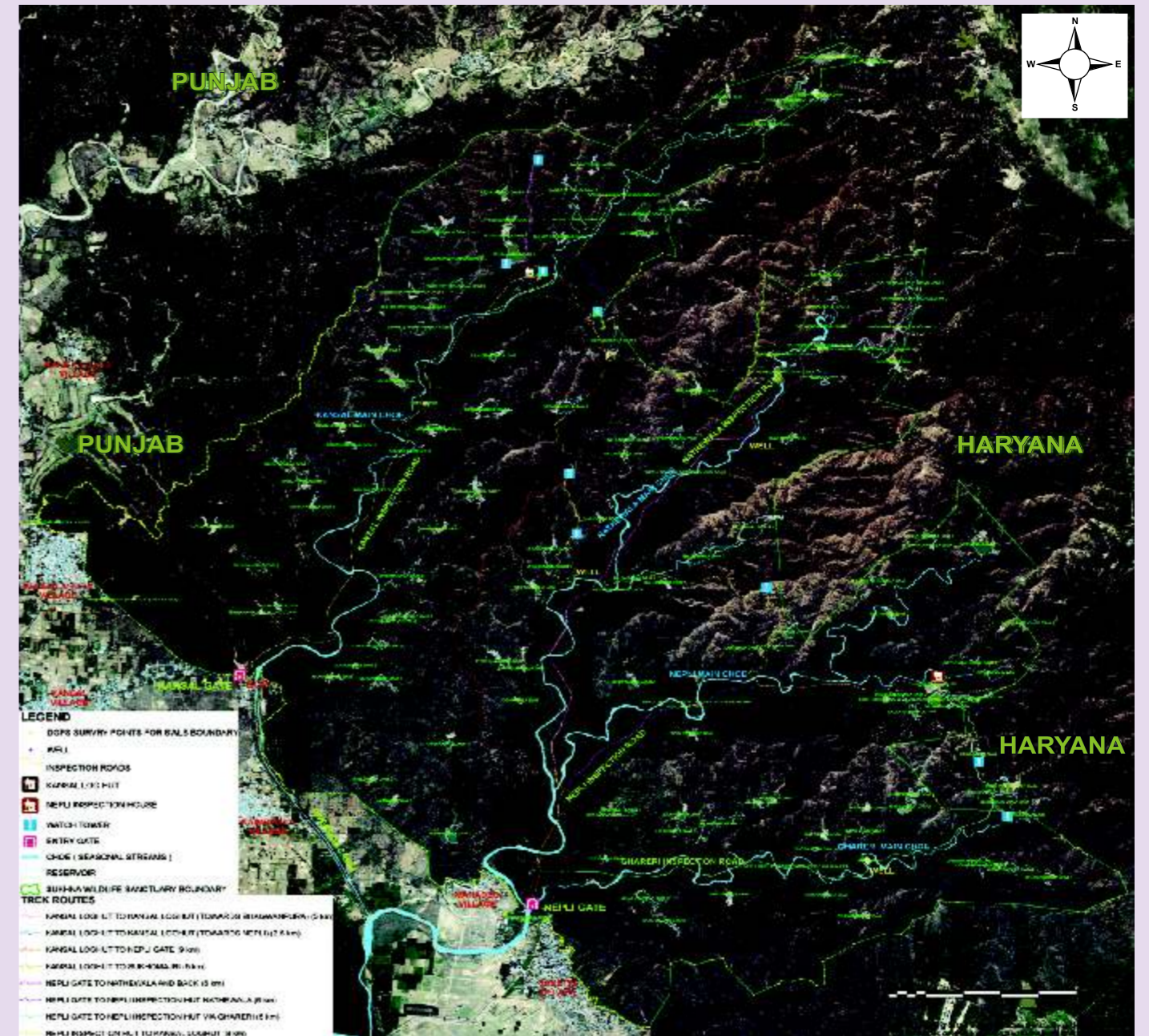
The interested persons/ group may visit the Chandigarh Administration's website http://chandigarh.gov.in/dept_forest.htm and fill up the Registration form and send it to email forestchandigarh@gmail.com or deposit the same in the office of Deputy Conservator of Forests & Deputy Chief Wildlife Warden, Paryavaran Bhawan (2nd Floor), Sector 19-B, Chandigarh (Tel.0172-2700217) to get it registered atleast 3 days in advance before the start of trekking.

The Do's & Don'ts for trekking to be followed by everyone is also listed at above web page.

TREK ROUTE MAP

For the convenience of the visitors the Map of all the eight Trek Route has been prepared. The Map is also available on the Department of Forest and Wildlife Website. http://chandigarh.gov.in/dept_forest.htm.

TREK ROUTE MAP



VISITING WILDLIFE SANCTUARY



Children during educational tour to Wildlife Sanctuary

To visit Sukhna Wildlife Sanctuary, one have to give an application/request letter addressed to Chief Conservator of Forests & Chief Wildlife Warden, U.T., Chandigarh to issue permit. The application should contain following informations :-

- Place of visit i.e. Nepli or Kansal.
- Number of persons in the group.
- Mode of journey.
- Date and time of the visit.
- Full address and telephone number of the applicant.
- Details of Passport & Visa in case of foreign national

There are two entry gates to the Sanctuary i.e. Kansal Gate and Nepli Gate. The route to Kansal gate is via 'Khuda Alisher' village or 'Kaimbwala' village of U.T. Chandigarh. The route to Nepli gate is via 'Suketri' village of Haryana.

As per the carrying capacity of Sukhna Wildlife Sanctuary, maximum 200 visitors can visit Nepli & Kansal everyday. So the permit for maximum 100 persons can be issued for Nepli and 100 persons for Kansal forests. The permits are issued on first come first basis.

EDUCATIONAL VISITS

To study the good work done large no. of groups – Indian Forests Service and State Forests Services Officers, Range Forests Officers and other is Executive Staff of Forests Department from various states visit.



Visit by Range Officer trainees from Maharashtra

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WATCH TOWERS & REST HOUSES

One can get wide view of Shivalik hills from the twelve watch towers constructed in the sanctuary area. These watch-towers also help in detecting/spotting forest fire, illegal poaching and felling. There are three beautiful rest houses namely Kansal Loghut, Kansal Inspection hut and Nepli Inspection hut inside the Sanctuary.

SIGNAGES

Protection, Directional and information signages has been placed all along the Trek Route for the conveniences of the visitors.

BEST TIME TO VISIT

- **October to March.**
- Avoid visit to the sanctuary during the rainy season, as due to rains almost all the roads and treks are difficult to cross and due to excessive ground vegetation a large no. of reptiles (snakes etc.) are found on the roads/treks, which may be dangerous.

TIMINGS

- **Sunrise to Sunset.**
- No visitor is allowed to stay inside the sanctuary during night.
- The sanctuary remains closed on National Holidays and Holi.



Kansal Log Hut

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Kansal Loghut Entry Point



Visitor Shed at Kansal



Watch Tower at Kansal



DON'TS IN SUKHNA WILDLIFE SANCTUARY

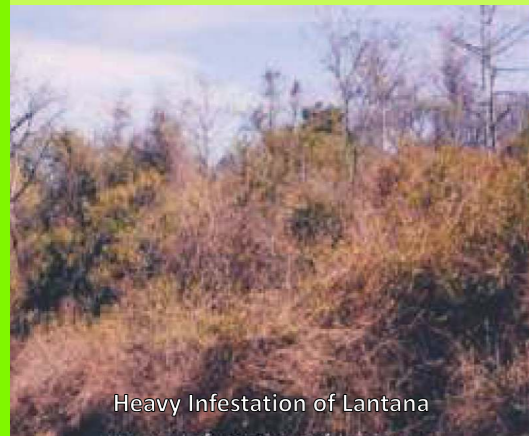
- Do not put on your car stereo or transistor. The quieter you are, more is the possibility of wildlife sighting.
- Do not carry gun or pistol. Feel free to shot snaps with a camera
- Don't light campfires or smoke in the forest
- Consumption of non-vegetarian food and alcohol is strictly prohibited inside the sanctuary.
- Any type of Group Meeting is not allowed in the Sanctuary area.
- Don't honk vehicle horn.
- Do not litter the wildlife sanctuary. Please dispose the garbage in the dustbins only.
- Cooking of food is prohibited.
- Keep safe distance from animals. Do not attempt to approach too close to an animal. Even seemingly harmless animals can be dangerous, if disturbed.
- Do not leave children alone. Always keep them in immediate sight. They are of the size of the Leopard prey.
- Do not feed animals. Feeding attracts animals to roadside areas where they could be in danger.
- Avoid using flash while photographing the wildlife. Use natural light.
- While walking on the natural trail, avoid stepping off the trek.

DO'S IN SUKHNA WILDLIFE SANCTUARY

- Please enter the Sukhna Wildlife Sanctuary after taking necessary permit.
- Drive slowly, preferably @ 20 km/h.
- Wear less bright clothes, as the bright clothes distract the animals.
- Avoid wearing perfumes, it attracts animals.
- Feel free to shot snaps with a camera.
- Carry Binoculars, Cameras, Drinking water, First aid kit, note pad, books and other reading material to study and enjoy the flora and fauna of the wildlife sanctuary.
- In case of Leopard sighting please inform the forest officials immediately.
- Be patient. Animal sightings are matter of chance, total silence and discipline enhances chances of animal sightings.
- Consuming alcohol or visiting sanctuary under the influence of alcohol is strictly prohibited.
- Small groups are preferred.
- Give way to animals first.
- Trekkers are advised to use jungle boots to ensure safety.
- Respect animals and their habits.



BIODIVERSITY RESTORATION IN SUKHNA WILDLIFE SANCTUARY



Heavy Infestation of Lantana



Fire Hazard



Lantana Removal

More than 50% of the forest area in Sukhna Wildlife Sanctuary was highly infested with lantana weed. Lantana was posing a serious threat to the 'Biodiversity' of our forests. It is a very hardy weed and grows fast in comparison to the indigenous plant species. With the sincere efforts of the department this obnoxious species has been successfully suppressed in the protected area and is no more present in a weed form.

IMPACT OF LANTANA ON ECOLOGY & ENVIRONMENT

- Affects Natural Registration
- Adversely Affects floral & fauna
- Fire Hazard
- Degrades Wildlife Habitat

STRATEGY

- 1) Lantana Removal before fruiting and seeding.
- 2) Lantana was uprooted physically.
- 3) Uprooting in successive 2 years from the same site to ensure non reoccurrence of lantana.
- 4) Encouraging the natural regeneration and enrichment planting.

RESULTS ACHIEVED

- Restoration of Biodiversity
- Improvement of wildlife habitat.
- Regeneration of indigenous species palatable grasses & shrubs.
- Minimisation of fire hazard.



Natural Regeneration after removal of lantana

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BIRDS OF SUKHNA WILDLIFE SANCTUARY & ADJOINING AREAS



Tufted Pochard



Crimson Sunbird



Brown Headed Gull



Purple Moorhen



Common Pochard



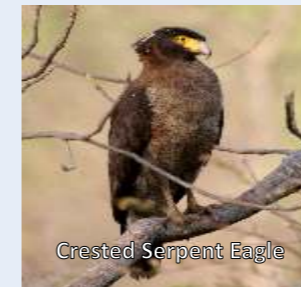
Blue Tailed Bee Eater



Golden Oriole



Greenshank



Crested Serpent Eagle



Grey Hooded Warbler



Yellow Wattled Lapwing



Purple Heron



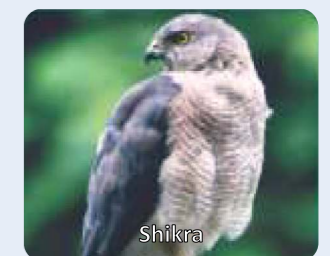
Great Egret



Purple Sunbird



Barheaded Goose



Shikra

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STATE FLOWER, TREE, BIRD & ANIMAL OF CHANDIGARH



DHAK FLOWER
Butea frondosa



MANGO TREE
Mangifera Indica



INDIAN GREY HORNBILL
Ocyroceros birostris



INDIAN GREY MONGOOSE
Herpestes edwardsi