

Col Tod's Trail

Todgarh Raoli Wildlife Sanctuary

COL. JAMES TOD WILDLIFE TRAIL
DUDHALESHWAR-KABRAHATA
कर्नल जेम्स टोड - प्रकृति पथ
दुधालेश्वर काबरा दाता




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INTRODUCTION

 Kabradata FRH

 Eco Lodges

This is a narrative for Col Tod's Trail that starts from the Eco Lodges at Dudhleshwar and finishes at Kabardata FRH.

Before the walk begins there is an introduction to Col James Tod who lends his name to the Trail.

Thereafter, a systematic story unfolds on the Biodiversity of Todgarh Raoli Wildlife Sanctuary in relation to India and the World.

The central idea is to impart an understanding of Biodiversity to the visiting tourists and leave them with a message to take home & think about: Biodiversity is absolutely necessary for our survival as a species.



The Story of Col Tod's Trail

with a running thread of Biodiversity

2.5 Kms



The underlying theme is: Biodiversity is absolutely necessary for our survival.

LIEUT. COL. JAMES TOD

(Beginning of the Trail)

Todgarh is named after a British Colonel James Tod.

He was born in Scotland & he came to India as a soldier in 1800 at age 18.

Tod worked as a Survey Officer & did an excellent job mapping
Madhya Pradesh, Gujarat & Rajputana.

But it was with Rajputana that Tod had a long lasting relationship.
He called it “Home of my adoption” and collected the history of the Rajput clans.

1818 he became East India Company’s Political Agent for Rajputana.

Tod sorted out Mewar’s problems, chiefly its pride vis-à-vis other states.
1819 in appreciation of his work, Maharana of Udaipur renamed Barsawada,
a village in Merwara Region, as “Todgarh” which comes down to us today.

There is no record of Tod having ever come to Todgarh or lived there.

In 1820 he went back to England, got married & had two sons and a daughter.
Tod returned to India briefly but his health began to fail & he went back in 1823.

Back home he wrote two volumes The Annals and Antiquities of Rajasthan
which were published after his death in 1835, at prime age of 53.

The Annals & Antiquities of Rajasthan remain a lasting tribute to his memory.

Col Tod will always be remembered as the one who replaced
the old British “Rajputana” with the new word “Rajasthan”, which we use today.

Painting dated October 1882 showing Colonel Tod seated on an elephant. The original inscription reads: *Kaptan Jems Tad Saheb is riding from Udaipur to the Dabok Bungalow. His Guru – Gyanchandra – also rides with him.*



Algae: Photosynthesis

Science tells us that
Life is said to have begun on our Planet
between 4 to 3.5 billion years ago with single cell micro-organisms.
They evolved into complex multi-cellular forms that
lived in water & metabolized heat of the earth.
Then around 2.5 billion years ago
came the Cyanobacteria
which were the first organisms to photosynthesize
or convert sunlight into food
by taking hydrogen from water and carbon from the air
and releasing oxygen.
They evolved into what we know today as Algae
a very large group of Uni & Multi-cellular organisms
that can grow over 200 feet (kelp) in the oceans.
These Algae were the forerunners of the Plants
as we know them today.



1st Stop ALGAE

Here we see the Common Green Algae
(check with Satish Sharma)

Biodiversity on Earth

(between the 2nd and the 3rd stop the Guide tells you about the Biodiversity on Earth)

Mankind has been trying to count the number of living species on the Planet for more than hundred years but still nobody really seems to know how many exist. Different scientific organizations have come up with different figures. Based on their findings we can say that it is estimated that there are 10 to 30 million species of living organisms on earth. Scientists have identified only 1.7 million species of animals & plants (as of 2010).

PLANT BIODIVERSITY

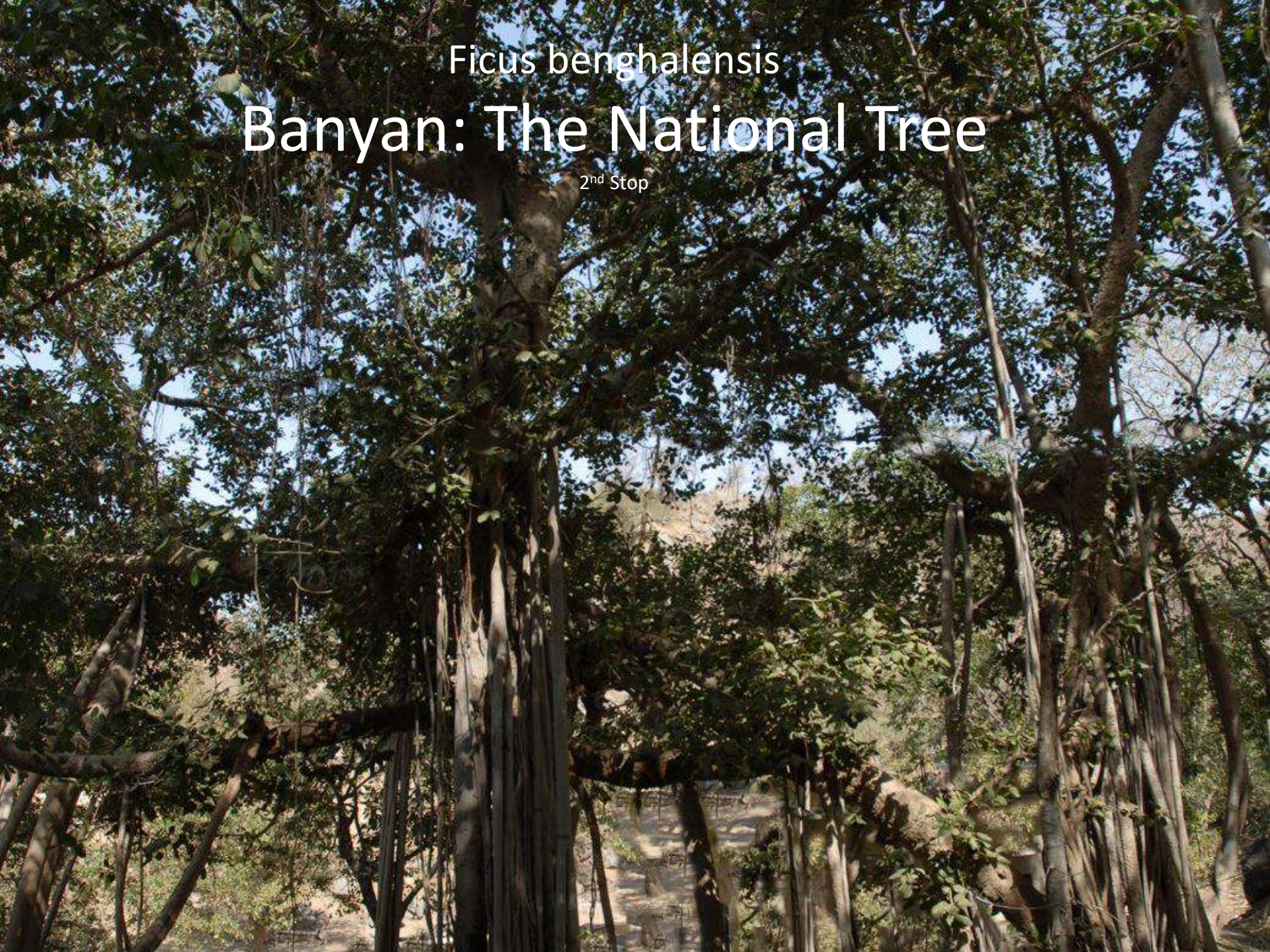
Out of the 1.7 million species of animals & plants identified so far
400,000 are Flowering Plant Species in the World and
15,000 are found in India and an estimated
600 are found here in Todgarh Raoli.



Ficus benghalensis

Banyan: The National Tree

2nd Stop



Banyan:

Roots, Fruits & Flowers

The distinctive feature of this extraordinary tree are its Aerial Roots, which fall down from branches to take root in the ground below. The Banyan begins to 'walk', spreading out to become a huge tree. It appears that the Banyan does not bear any flowers only fruit - the fig. But in fact the fig contains hundreds of tiny flowers concealed in its fruit. Small insects enter the fruit to ensure cross-fertilization. At first green & hard, the figs ripen between April and May when they become bright red & pulpy and are much sought after by the birds and animals providing a rich source of carbohydrates, vitamins and yes, high-protein in the wriggling larvae within.



Banyan: A Micro Habitat

The Banyan is an extraordinary tree that supports many creatures with its Leaf, Fruit & Flower, Bark & Root.

Fresh green leaves of the Banyan are eaten by both domestics & wild animals like Sambur & Chital, Chausingha, Neelgai and Wild Boars.

Squirrels drink the 'milk' from stems and eat tender parts of the buds.

The ripened fruit of the Banyan draws a wide range of Birds like Mynahs, Babblers, Doves etc that hang around all day.

There are visiting Koels, Tree Pies, Thrushes, Barbets, Woodpeckers etc. Doves of Green Pigeons or Rose Ringed Parakeets fly-in at sunset to roost for the night - when the bats arrive to feed on the figs.

Monkeys eat figs & Sloth Bears are known to climb the banyan for them. Fallen fruit on the ground are eaten by almost all herbivores –

Deer & Antelope, Boars, Porcupines, Rabbits, Moles and even the Tortoise!

The hanging roots are eaten by all wild ruminants, even the Elephants!

A home for Owl, the hollows of the Banyan are large enough to house Foxes, Jackals, Ratels, Mongoose etc.

And the Leopard loves to climb its high branches.

Crisscrossing the leaf litter under the shade of the Banyan is a separate reality of Beetles & other Insects that dominate the ground. And, it is not uncommon to find a Snake living in the many crevices of the tree.

THE BANYAN

IN INDIAN CULTURE

Banyan is deeply rooted in the art & culture of this land. It is called the 'Bodhi' tree under whose shade, Buddha attained enlightenment. Sanctity for the tree also comes from the mythic story of Savitri, a devoted wife who worshiped this tree to save the life of her husband. On the occasion of Savitri Vrat, women worship the Banyan for the well being of their husbands.

'Bargad' in Hindi, the Banyan has a name in almost all Indian languages & dialects. And not without reason. People know the Banyan's healing & curative properties and have many medicinal uses of its Leaf, Latex, Buds, Bark, tender Roots & Resin. Different parts of the Banyan are used in many other ways. No wonder, the Banyan is the National Tree of India.



Famous Big Banyans of India

Well known for their age, spanning centuries, there are some famous big Banyans in India. Perhaps the most celebrated is in the Botanical Gardens in Calcutta, known to have grown in 1782.

According to the Guinness Book of World Records, the world's largest banyan goes to the one found in the village of Gutibayalu, district Anantpur, Andhra Pradesh. It has the distinction of having a canopy of 5.2 Acres with 1,500 aerial roots! And is calculated to be 600 years old by wood scientists.

Special mention must be made of the Banyan recorded in Jehangir Namah, which mentions of a gigantic one found in a village called Shekhupur, in Daulatabad, Maharashtra. Jehangir observed the girth of the trunk measured 48 feet and height from the base to the pinnacle 161 feet.



Banyan & the Story of the Squirrel as told by Satish Sharma





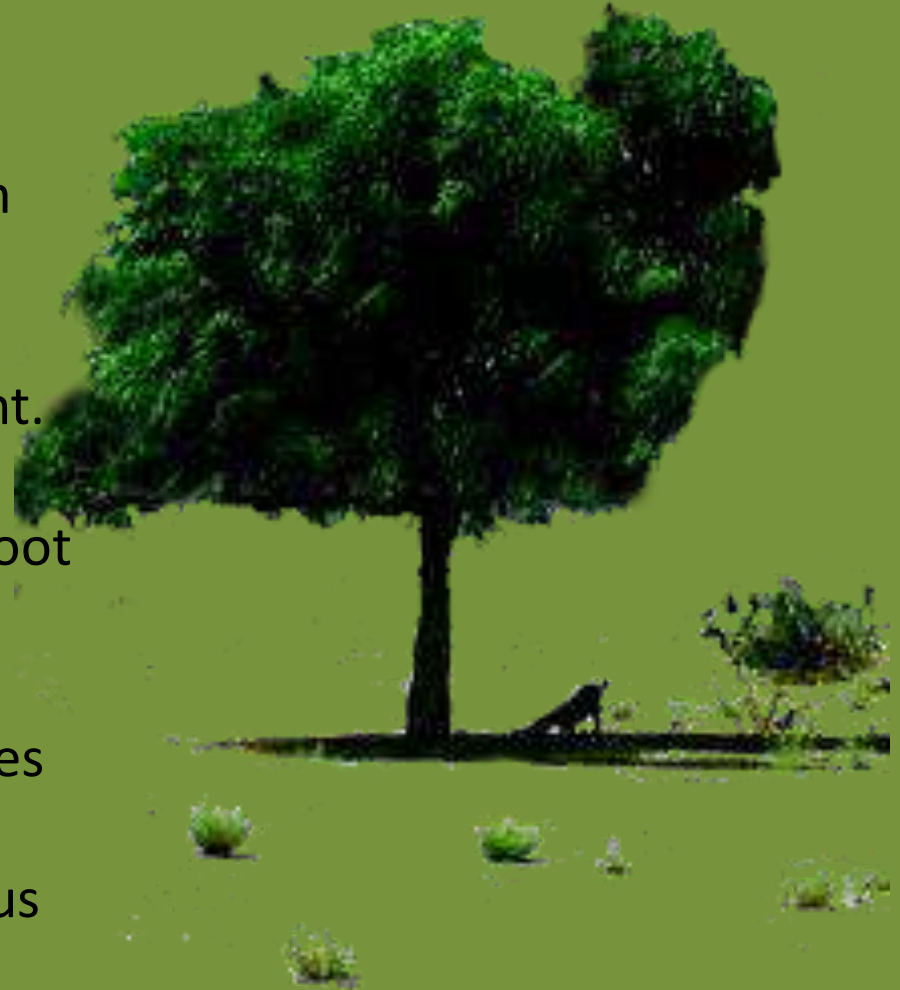
Prosopis cineraria

KHEJRI: The State Tree

3rd Stop

Khejri: The Drought Resistant Tree

Khejri's importance in the desert state of Rajasthan is in the fact that it requires minimum rainfall to thrive. In fact, it is drought resistant and can survive many years of drought. Part of the reason is that it has a root system that sends a taproot more than a hundred feet deep into the ground for subsoil moisture. It can withstand extreme temperatures from near zero in winters to being nearly half boiled at 50 degrees Celsius in summers.



Ecology & Economy of the Khejri

Khejri is an extraordinary tree because it plays a vital role in the ecology & the economy of the arid and semi-arid areas, providing as it does, Food, Fodder, Fuel, Fixtures, Medicines and other things needed to survive in the desert.

FOOD: Once a year the Khejri bears pods called “sangri” which are cooked as a vegetable when fresh and green. It is also dried for later use as curries and pickles. Khejri secretes a brown gum which is very tasty, nutritious and is especially eaten by pregnant women.

FODDER: Another amazing fact about the tree is that it remains green for most part of the year and its leaves are relished by all manner of livestock. Locally called “loong” the leaves are of high nutritive value while the pods also forms rich animal feed - fresh or dried. It is the mainstay for the Chinkara & the Blackbuck

WOOD: The wood of Khejri is termite resistant. People use it for house building, chiefly as beams in the roofs, or to make doors & windows, traditional agricultural tools etc. And of course, the wood of Khejri makes for excellent firewood and charcoal.

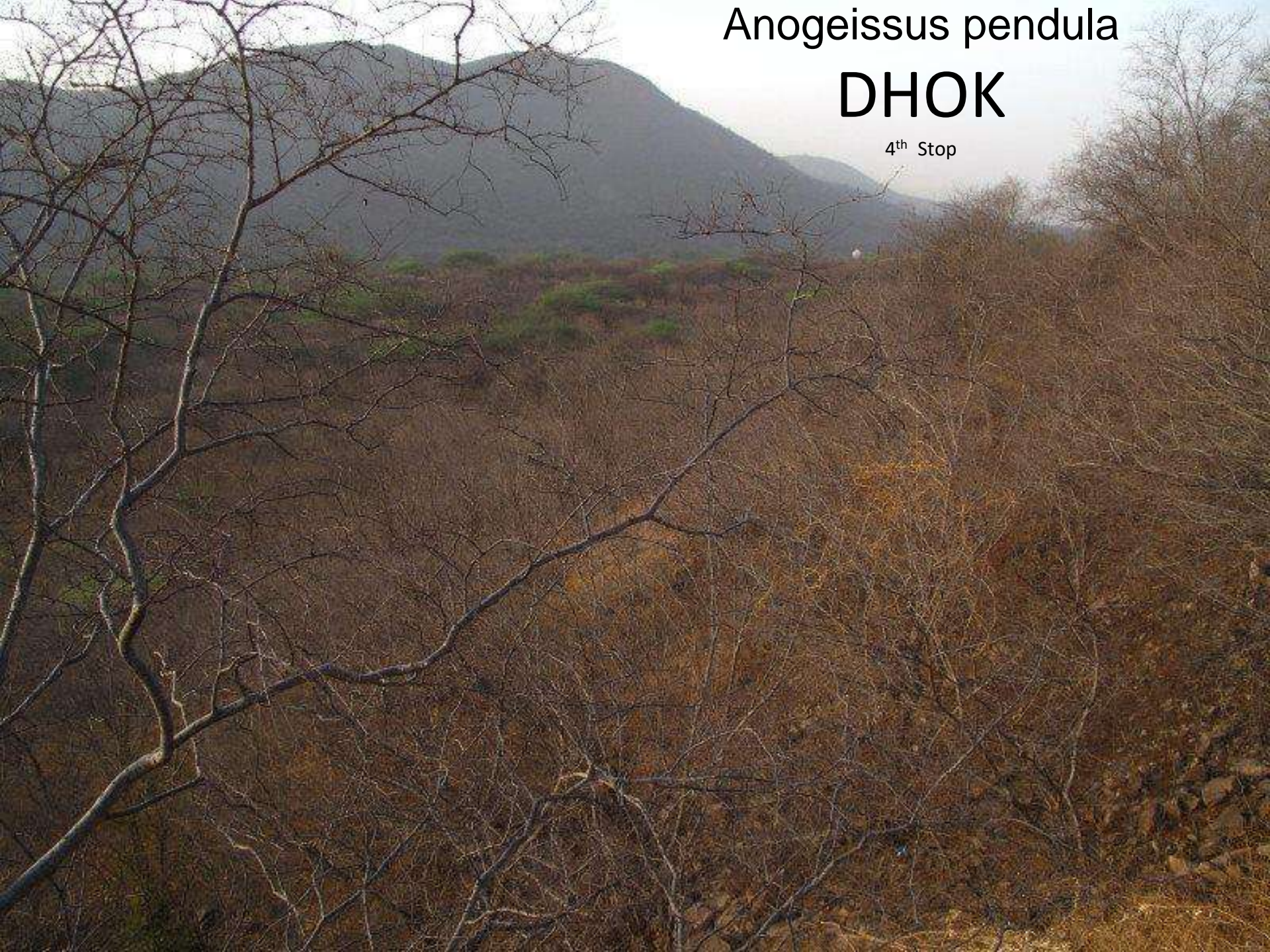
MEDICINES: In Ayurveda system of medicine, Khejri’s Leaves, Flowers, Pods and Barks, all find a cure for different ailments.



Anogeissus pendula

DHOK

4th Stop



Anogeissus pendula

DHOK: The Tree of Todgarh

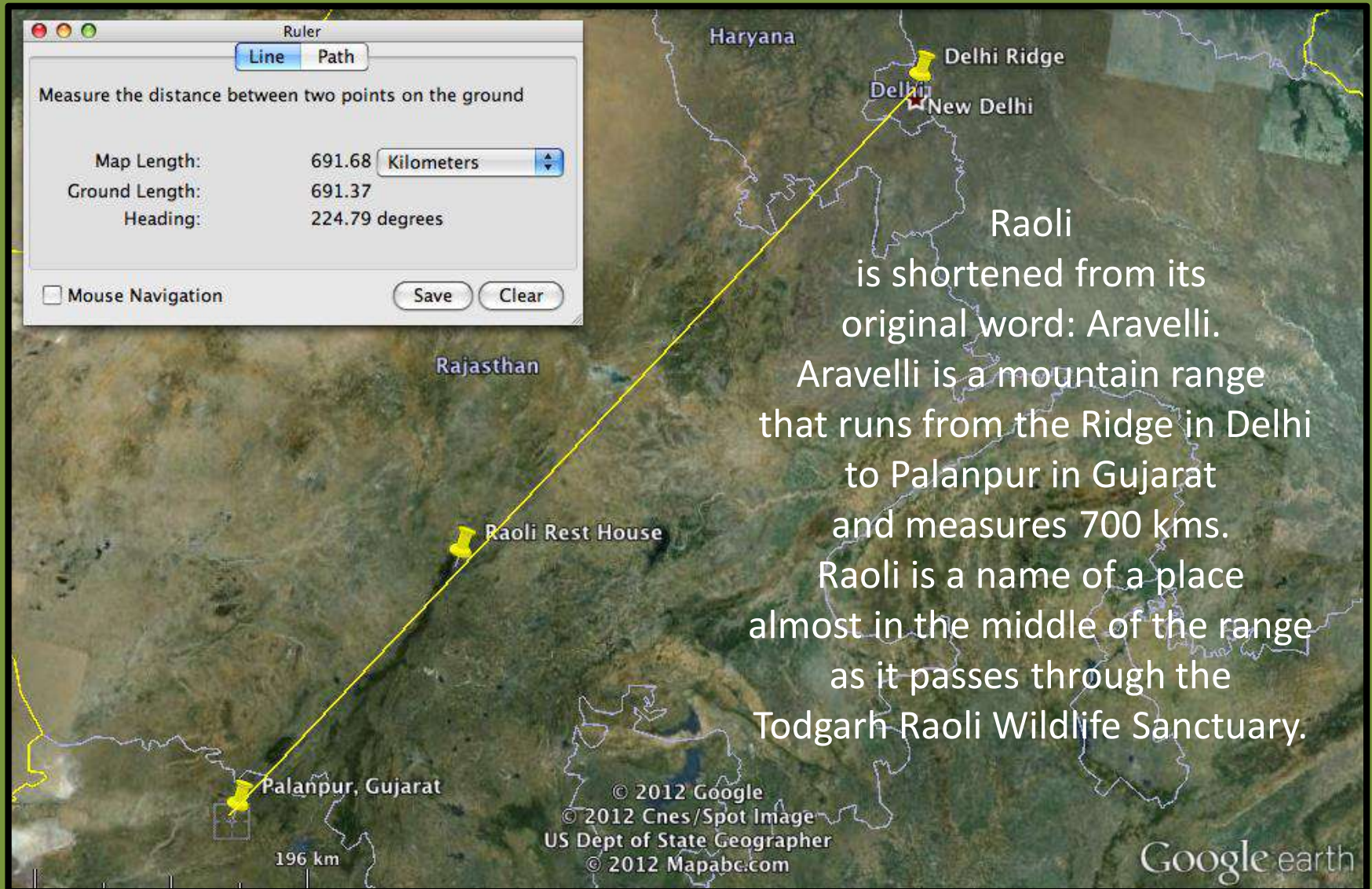
Dhok is the tree that is predominantly found in this forest.

It has two qualities that endear it to the people:

1. As firewood it burns very well.
2. It's leaves are eaten by almost all domestic and wild animals.
3. Dhok also secretes a Gum which is edible & nutritious.
4. The wood is extremely hard and therefore used in furniture making
5. Leaves are used in dyeing, producing a dark green colour.

RAOLI / ARAVELLI

Bench View Point





Aravalli High Points

The Highest Point in the Aravalli Range is
Guru Shikar in Mt Abu at 5,650 feet.
Kumbhalgarh at 3,600 feet is said to be the Second Highest.
And that mountain top you see there
is called Goram Ghat and is just under 3,000 feet.
There is a temple at the top of Goram Ghat
that the strong of heart can climb.



Goram Ghat

Aravalli's claim to fame is that it is older than the Himalayas.

In fact, along with the Atlas in North Africa,

Aravallies is one of the oldest mountain ranges in the world.

Mineral Wealth: Marble for the Taj / Copper since Mughal times / Zinc

& Other Minerals like Granite, Sandstone, Slate, Phosphates etc

3 National Parks: Ranthambhore, Sariska & Kumbhalgarh

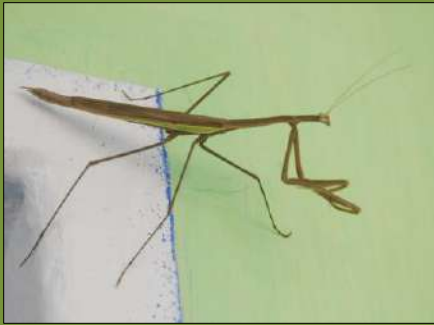
5 Wildlife Sanctuaries: Todgarh Raoli, Phulwari ki Naal, Sita Mata, Jaisamand & Mt Abu



ANIMAL BIODIVERSITY

Out of the 1.7 million species of animals & plants identified in the World so far,
it is estimated that more than 1.3 million are animals.

4,725 species are found in India and 37 are found here in Todgarh





THE WORLD OF INSECTS



Insects have a three-part body,
with three pairs of joined legs,
compound eyes and two antennae
and no backbone,

They are one of the earliest arrivals on the planet,
alongside the flowering plants.

And they are also one of the
most diverse group of animals on this planet.
Almost half the documented species on earth are Insects!

Insect Biodiversity on the planet today
is estimated between 6 to 10 million species.

And they are found everywhere on the planet –
from frozen poles to flaming equators.

First to fly, even before the birds

Insects
are unique and absolutely indispensable for the Planet!



BENEFITS OF INSECTS

We Humans instinctively do not like insects.

We consider them Pests because they

1. Destroy our Crops
2. Spoil our stored Products
3. Transmit Disease to us & our animals.

We try our best to kill them the moment we see them.

But the good they do far outweighs the bad.

1. POLLINATION: without insects we would be living in a world without flowering plants.
2. INSECT PRODUCTS: Humans enjoy many products made exclusively by insects like: Honey, Silk, Wax, Lacquer etc
3. INSECTS RECYCLE nutrients, enriching soils.
4. Insects eat other insects harmful to agriculture.

Cicadidae Platypleura

SONGS of the CICADAS

During the heat of the day in summers,
the forest of Todgarh Raoli resounds
with an over powering hum
that is made by a winged insect called
Cicada.

From its camouflaged position on the trees,
thousands of cicadas
make a very hypnotic sound in unison.
It is the male cicadas that
sing their unique songs by
vibrating membranes on their abdomens
to attract a mate.

There are about 2,500 species of cicadas
found all over the world
and many of them remain unclassified.

For those who fear Insects:

Cicadas don't bite us.

They live off sucking the sap
from the tree.



THE WORLD OF REPTILES

Reptiles are evolutionary seniors to the Insects
because they have a Backbone
and a Skeleton inside their bodies.
Plus, they are cold blooded & their bodies are covered in scales.
Being cold blooded means that their bodies
react to the temperature of their surroundings.
When they get too warm, they go to water or shade or cool off.
And when they get too cold, they bask in the sun to warm up.
The creatures that belong to this group are
snakes, lizards, crocodiles, turtles and tortoises etc
There are more than 9,500 reptiles
identified in the world as of Feb 2012.
And more than 530 species of reptiles are found in India.
Statistical estimation of reptiles found in Todgarh Raoli are xyz.

Most Reptiles are harmless to Man
and play a useful role in controlling agricultural pests,
by eating Insects & Rodents.
But it is the poisonous snakes
that have made this family of animals
perhaps the most feared by Man.
But tortoises are very endearing....



Geochelone elegans

STAR TORTOISE

STAR TORTOISE: Facing Extinction

Star Tortoise takes its name from the the beautiful star pattern on its shell.

Once upon a time, star tortoises were very numerous and were seen wandering freely in the landscape.

But then two things spelt disaster for them.

First, the star tortoise made a very popular pet in urban homes because it does not grow too big and completely harmless.

And secondly, demand for star tortoise soup in the restaurants of South East Asia & China almost drove them to extinction.

The locals collected them and sold them for a pittance to agents who exported these beautiful creatures in the illegal wildlife markets.

Now the Star Tortoises are protected under the wildlife act and it is an offence to keep them as pets or trade in them.

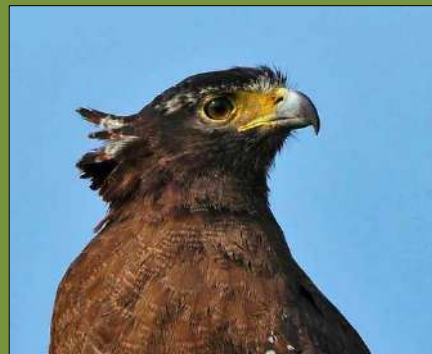
The star tortoises mostly vegetarians and feed on grasses, fallen fruit, flowers and leaves of succulent plants. Occasionally, they will eat decaying flesh of dead animals.

THE WORLD OF BIRDS

From Pole to Pole, birds fly in every bit of the sky.
From the Bee Hummingbird that measures 2 inches
to an Ostrich in Africa that stand 9 feet high,
the birds come in all sizes, shapes and colors.
All birds Fly because they have wings, which are evolved forelimbs.
But there are many flightless birds like
penguins, ostrich, emus, kiwi etc
Many species undertake
long distance annual migrations
while many others
never leave the place where they were born.
Birds are very social creatures & communicate
through calls and songs.
They also use visual signals by their movements.

BIRD BIODIVERSITY

Currently, the number of birds on the planet stand close to 10,000 species. In India, 1,300 species have been identified out of which 42 are endemic i.e. only found in India. In Todgarh more than 200 have been identified.



Gallus sonneratii

GREY JUNGLE FOWL

has the distinction of being the most significant bird of Todgarh Raoli



Gallus sonneratii

GREY JUNGLE FOWL

to be re-written:

The Grey Jungle Fowl is a wild ancestor of the domestic chicken. It is a beautiful bird that is found only in the peninsular India. Todgarh Raoli however marks the northern limits of its range.

Their loud calls can be heard in the early mornings and at dusk. They forage in groups. Although mostly seen on the ground, Grey Jungle Fowl fly into trees to escape predators and to roost. They feed on grains including bamboo seeds, berries, insects and termites.

They are threatened by hunting for food and habitat loss. Feather use in fly-fishing has also been suggested as a threat. they are hunted for meat and the long neck feathers are sought after for making fishing lures.

MAMMAL BIODIVERSITY

Currently, the number of mammals on the planet stand close to 4,629 species.

In India, 350 species have been identified out of which 44 are endemic.

In Todgarh more than 37 have been identified.



THE WORLD OF MAMMALS

Mammals are the most evolved creatures on the planet because they

1. Breathe air
2. Have a backbone
3. Are warm blooded
4. Have hair
5. Have Sweat Glands and
6. Mothers give birth to babies whom they feed their milk.

From 2-inch bumblebee bat to 108 feet long blue whale, mammals come in all shapes and sizes.

5,676 species of mammals were known in 2005.

In India 410 species of mammals.

In Todgarh 37.

(Pl see Addendum 6 List of Mammals at Todgarh Raoli)

Melursus ursinus
SLOTH BEARS



SLOTH BEARS:

Dread of the Indian Forests

Or that's what the British called them.

And not without reason.

Consider the following:

3 inch long unsheathed claws.

3 inch canines as powerful.

Poor senses of Sight & Hearing makes it easily startled.

In an unexpected human encounter,

the Sloth rears up in anger and with its powerful claws,

takes a swipe at the victim's face

and then deliver few bites with its big teeth & a fierce jaw.

Usually, the victim is not killed.

Just severely mauled for life.

And there is no escaping a Sloth

since it can outrun any athlete on the forest floor.

And if you climb a tree – so does the Sloth –

an expert tree climber to get to honey combs & wild fruits.

It's claws and flappy big lips are especially suited

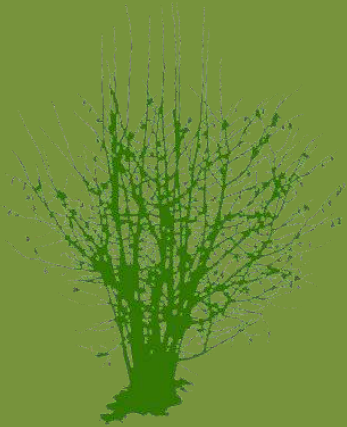
to dig out ant & termite mounds and suck them in.

Todgarh Raoli is a good place to see the Sloth Bear

because the forests offer a wide range of fruiting trees

and a equally rich insect life.

SLOTHS: Food Chain

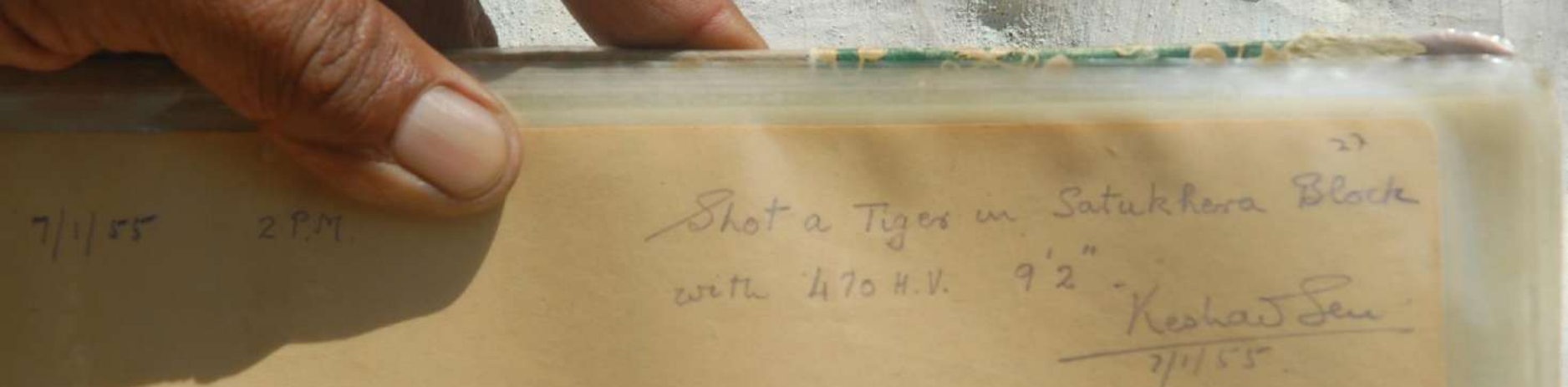


SLOTHS:

THE DANCING BEARS

Once upon a time, the nomadic Qalandhars who entertained the Mughal Emperors with trained animals acts, used to make the sloth bears dance for public entertainment. These street performances were made illegal in 1972. But it was difficult to enforce the law because where do you keep the confiscated bears? So they granted licenses to control trafficking in bears and later made a sanctuary for them near Agra.





DISAPPEARING BIODIVERSITY in TODGARH RAOLI

People living around the forests
cut the trees essentially to light their cooking fires
as well as for various other reasons.

They also drive their cattle in the forest to forage for free.
Consequently, there is human pressure on the forests of Todgarh Raoli.
The forests have also been exploited for trees of commercial value
like Teak, Bamboo, Khair or Acacia catechu etc.

The rural poor themselves have mindlessly destroyed
their own natural resources to feed insatiable urban demands.

The star tortoise is nearly extinct.

Sambur, Chausingha and Chital are completely nocturnal
as are wild boars and other mammals.

Once there were Tigers here.

Guest Register at the Raoli Forest Rest House made by the British,
has an entry recording the officially last tiger shot in 1955.

Tiger was last seen here in early 1960s.

Importance of Biodiversity

Biodiversity is one word for millions of uncountable living species of plants and animals that provide us with all our food, medicines and most of the things that we need for living.

All these species are interconnected by food chains in an extraordinary web of life.

If there are any disruptions in the chain, it has a repercussion that finally comes to us.

Biodiversity directly impacts our Health & Lives since declining Biodiversity seriously affects our Fresh Water & Food Supply and increase incidence of Pests & Diseases.

Biodiversity enables an ecosystem to deliver services that we take for granted like:

- a) Purify the Air we Breathe
- b) Cleanse & Conserve the Water we Drink
- c) Enrich the Soils & Prevent Soil Erosion
- d) Breakdown & Absorb Pollution created by Mankind.
- e) Stabilize Climate

Other Benefits of Biodiversity include:

- a) Economic Value of Natural Resources jute & wood fiber etc
- b) Spiritual, Cultural & Aesthetic Values
- c) Traditional Knowledge Systems
- d). Gene Pool for Future

We are completely depended upon the Biodiversity on the Planet without which we cannot survive.

CONCLUSIONS

What Can I Do?

01. Understand that Loss of Biodiversity is a serious subject because it affects my life.
02. If you have understood that, then communicate the Importance of Biodiversity to others around you.
03. Take initiative to make your neighborhood, local park or garden into a bio-diverse area.
04. If you are a good communicator and media savvy, you can spread the importance of Biodiversity to a wider audience.
05. You can become actively involved in various efforts by various agencies working to save Biodiversity.
06. You can volunteer your services with NGOs working your region.
07. Become aware that all “Conspicuous Consumption” is directly or indirectly related to the degradation of our environment. The more you consume, the more you are devouring the environment. So, stop mindless consumption. Our unnecessary lifestyle is destroying Biodiversity.

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an Initiative to Communicate
the Importance of Ecology
the Story of Resources and
the Lessons of Sustainability

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