



SHOOT AT SIGHT HOW DID IT STOP?

By Editors of CT

Chanakya (375–283 BCE) was an ancient Indian polymath who was active as a teacher, author, strategist, philosopher, economist, jurist, and royal advisor. He is better recognized as a conservation ideologue for he laid emphasis, in his ethical scripts, on declaring separate forest reserves for separate objectives. Some were meant for ecological values others for human uses. He cited significance of mammals like Elephant to be provided large chunks of well forested regimes to let these pachyderms survive without hardships. Mention of Tiger was made for protecting forests.

“**Aakhet**”: Yet hunting for sports prevailed upon such dictates since ancient time. It was called “aakhet” (big game hunting) and sported by the rich and privileged. The ruler had his reserved right to do so. During mediaeval period, the Mughals indulged in big sport. Almost each emperor tried to prove his might by bagging many tigers. Nur-ud-Din Muhammad Salim Jahangir (1569-1627), bypassed all previous records. His register maintained details of each shoot/slain. He often himself measured animals and described colours of birds' feathers. Indian rulers took a cue from such emperors. However, balance between prey and predator was always kept in mind and practiced on field.

The foreign invaders and rulers saw capturing or hunting of tigers as a symbol of masculinity and an adventurous sporting event.

Killing of this charismatic wild animal, tiger, was an extension of justifying kingship and establishing sovereignty.

Brits's acts: The consequences were larger during the British Raj due to the

This issue of Conservation Times raises curtain over Project Tiger poised to have its golden jubilee during 2023.



Tiger's afternoon pant in Ranthambhore Reserve

hunters' use of far superior firepower. Their hobby to hunt shared by a lot of colonial aristocrats led to further depletion of tiger numbers. Some of the British officers chronicled hunting events in their personal diaries, memoirs, official gazetteers and their photographs to establish extravagance and might of the British Empire in India.

British rulers enacted Forest Act of 1878 which enabled them to treat forest area as hunting grounds to eradicate tigers legitimately which were subsequently labeled as vermins. George P. Sanderson, a British official posted in erstwhile Mysore State in India, wrote "May the day be far distant when the tiger shall become practically extinct!"

India became independent in 1947. While a score of social and economic projects were lined up through a planned process of development, ecology or wildlife found no mention. Tiger continued to be bagged by overseas visitors. They had to procure a 'permit' and its cost then was today's half US Dollar! It took long time to realize that tiger would be extinct in circumstances if it was left to face the barrel. The Project Tiger initiated in 1973 provided a new hope.

Tiger-parts: Poaching has been a big threat to tigers in India. Big money has always been involved in such deals. Tiger parts had massive turnover as China and its neighbouring countries used such organs in traditional medicines and eatables. It was not easy to control smuggling across borders and even at international airports in India. The past two decades have fetched positive results. Not certain if China and its associate consumers still use tiger parts for own philosophies to be materialized? The organ-game presumably continues.

Today throughout Asia, tigers are found across twelve regional Tiger Conservation Landscapes (TCLs). Of these, India is home to six global priority TCLs for long-term tiger conservation significance and it harbors more than 60% of the global genetic variation in the tiger species. The tiger is classified as Endangered in the 'IUCNs Red List of Threatened Species.

Global Forum: India is one of the Founding members of the inter-governmental platform of Tiger Range Countries – Global Tiger Forum, headquartered in New Delhi. With a global share of 17% human population and 18% livestock population within 2.4% land area of the world, India has successfully managed to conserve the single largest population of free ranging wild tigers in the world effectively trying to reverse a century of decline. The Government of India increased the budget allocation for tiger

conservation from INR 185 crore in 2014 to INR 300 crore in 2022.

By 2020 it was estimated that nearly 30% of tiger population in India is presently roaming outside the designated Tiger Reserves. While other tiger range countries with relatively more economic prosperity have failed to protect this endangered species, India has lived up to its global commitment for tiger conservation and achieved the target of doubling its population.



TIGERS vs PEOPLE

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It is time we like to circulate a congratulatory message across the world. Project Tiger will complete fifty years during April 2023. It should come as hearty

satisfaction to all those who shed their sweat to conserve this wild species, declared to become extinct by end of the previous century. Pressure of poaching, smuggling of Tiger parts, loss of habitat, etc., had been causing indescribable problems. The success has brought forth unexpected problems too: Tigers vs People!

The Project Tiger office in New Delhi has pointed out that about 30% of Tigers, living in 53 designated Tiger Reserves in India, roam outside their boundaries! Where do they go? They roam over the countryside across Tiger-landscape. Agricultural and pastoral communities dominated the areas for centuries. Such people are irked as Bluebills and Wild Boars raid their crops at night. Often at day, Tigers are found strolling across mustard fields causing men-women to run amuck for safety. Leopards' fresh pug marks are observed almost daily over rural peripheries. Yet the rural folk remain tolerant. The economic losses they suffer from wild animals are not being acknowledged by any section of the Government in India. One will shudder to know number of cases of rural people having received injuries at hands of predators all over the country, many not able to survive the attacks.

Hail Project Tiger by all means. It has added a new value to India's stand for ecological security of its forested habitats. As the Project is getting matured, I like to appeal to the authorities to pay attention to needs of stake holders in face of conserving this mammal. Admitted, Tiger is an umbrella species to ensure benefits for all sections of society. The Project's conceptual thesis had clear vision for looking after needs of stake holders so that wild animals do not receive antipathy of people. Wonder if forest authorities ever cared to bandage the bleeding wounds of rural folk.

INVITATION TO HUNT TIGERS!



Shikar! The eyes of the tiger in the jungle-black night are two haunting orbs of fire. Many who have seen them have recorded the experience on film. Others have brought the tiger home... the sportsman's greatest trophy. A Shikar in the jungle of India is a princely caravan, with scores of servants and chefs to tend to every need, expert hunters to guide, and thrills lurking in every rustle of the leaf. • Enjoy the excitement of an Indian Shikar – the beloved sport of the Maharajahs. Here's the first step: Ask your travel agent for full information and literature on SHIKAR – or write Dept. N. Y.

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THEME FOR THE NEXT ISSUE

The theme for the next issue of Conservation Times is drought and its effects on wildlife and people. As usual, we welcome good articles on any wildlife or environmental topic in addition to those on the theme for the upcoming issue. If you would like to write an article, please request a style sheet for Conservation Times from emccrea@ecg.org. The deadline for submitting articles for the next edition is 25 March, 2023

TIGER AS EVIDENCED IN MOHENJODARO ERA



A Mohenjodaro seal depicting a Tiger, wikimedia



A person fighting a Tiger in Mohenjodaro era, National Museum, New Delhi



A Harappa seal depicting a Tiger, wikimedia



Tiger God or Goddess of Indus valley, wikipedia



Mohenjodaro is an archaeological site in the province of Sindh, Pakistan. Built around 2500 BCE, it was the largest settlement of the ancient Indus Valley Civilization, and one of the world's earliest major cities. It had an estimated population of at least 40,000 people,

It was abandoned in the 19th century as the Indus Valley Civilization declined. The site was rediscovered in 1920s. It was designated as a UNESCO World Heritage Site in 1980.



TIGERS' CULTURAL ASSOCIATION

BASIC CONSERVATION TOOL

By Dr. Satish Kumar Sharma

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A folk illustration of a goddess riding a Tiger, showing how wild species were associated with deities to cause their conservation, wikimedia

Dr. Satish Kumar Sharma has served the Department of Forest in Rajasthan and as such, amassed indescribable field knowledge on wild species. He attained twin Ph.Ds and is based in Udaipur – Editor

Today's tiger-lovers probably find satisfaction in having observed this wild cat in some Reserves, only to forget the wilderness adventure. How many of them will know that tiger has had an ancient association with people, in India and in other countries. An object once associated with religion or cultural ethos, would become dearer to people. Tiger has been no exception.

Tiger as God: A seal was discovered in Mohenjodaro (in Pakistan) depicts a tiger looking back at a human figure on a tree. Another seal shows a tiger with a

horn. A convex moulded tablet in Harappa museum shows a female figure fighting two tigers while standing above an elephant. They are interpreted as Bharata who played with lions. On another seal a mythical female figure -- half human half tiger, is portrayed. This seal is to be observed in the National Museum in New Delhi.

Lord Ayyappa (in Sabarimalai temple in Kerala, India) rides a tiger. Padmasambhava is worshipped in Tibet and Mongolia. He was the Indian ascetic who brought Buddhism to Tibet in 762 AD. He was shown riding a tiger. Patanjali (Pulikkal Munivar) was a human with legs of a tiger. Shiva wears a tiger skin.

Mahabharata very often uses the

epithet "tiger among men". People wear tiger nails in their chains. The Brahmana literature describes Kshatriyas as tigers. Narasimhavatar is half man, half lion. The ten-armed warrior goddess Durga rides the tigress into battle.

Tribal appeal: Indian tribes like the Bhaina, Bharia, Bhatra, Dangis, Gond, Gosain, Kol, Korku, Koshti, Velip, and Warli, are stout worshipers of Waghoba or Bagheshwa (tiger god). They all bear a deep reverence towards the deity and have held strong beliefs about it for generations.

R.V. Russell mentioned in "Tribes and Castes of the Central Provinces of India," Vol. II, pg. 248: "The Bharias venerate Bageshwar, the tiger god, and believe that no tiger will eat a Bharia. On the day of Diwali, they invite the tiger to drink the gruel that they place for him behind their houses while simultaneously warning others not to stir. In the morning, they display the empty vessel as proof that the tiger visited them"

Garos of Meghalaya, Gonds of Madhya Pradesh and Tulunadus of South Kanara district of Karnataka look upon the tiger as a protector. Garos wear necklace of the tiger claws embedded in gold or silver for protection. The Irula tribe of Tamil Nadu also worships the tiger for protection from evil spirits. The Dhangars, a pastoralist community in Maharashtra, also revere the tiger as "Waghdev/Waghjai" with the belief that the deity will protect their sheep from tigers and leopards. A recent study showed that the Mishmi tribe in the northeast India sees the tiger as their brother.

Gavri: Gavri dance is one of the famous dances of Bhils dedicated to Lord Shiva and Gavri (i.e. Gori or Parvati). During this dance, a half necked man pastes yellow colour on his body made by the turmeric. Black strips are also pasted on the face and body using charcoal powder to symbolize a tiger.

This 'tiger' is considered full of divine powers. Infants and babies of 1 to 3 years age are placed before this tiger on the ground to get his blessings. The divine tiger jumps over the babies

giving them blessings. It is a general belief among the tribals that after this ritual, the blessed kid will grow up to become a fearless person.

Bhuyan tribals of Koraput district of Odisha are well known for their Bagha Nacha i.e., tiger dance. Hide of the tiger is wrapped on the body by the dancer to perform the rituals of tiger dance.

Symbols: Nahar Singh, Sher Singh, Babbar Singh, Nar Singh etc., are common names among various martial societies of India. These names are dedicated to loins and tigers which are symbol of strength and courage.

Gujjars or Gurjars are traditionally a pastoral community of cattle herders who possess a large population of livestock. Gujjar community considers Baghji (Tiger) as their ancestor. It is a general belief among Gujjar society that Baghji was a half tiger and a half man. It is believed that Baghji was son of Baba Hari Ram and Mata Leela Sevdi (Leelavati). Later on, Baghji became father of 24 sons and Bhoj was one of them. Bhoj and Devnarayan ji are famous demi-gods among Gujjar community. Bhoj, later called Sawai Bhoj, was father of Devnarayan ji. Gujjars respect tigers considering their ancestors still today.

During ancient time, erstwhile rulers were not only hunted tigers but also played a vital role in their conservation. This can be understood by an example of erstwhile Dungarpur princely state. During Chhapania Kaal (the deadly famine of 1900 AD) the entire tiger population of Dungarpur state was wiped out. A small population of tigers was still present at the border of Dungarpur in Kherwada area of adjoining Mewar state. The rulers of Dungarpur made a plan to attract the adjoining tigers into their territory. They started baiting the tigers close to border area and gradually shifted baiting process deeper into their forests to pull the outer population of tigers inside their own area. So their state again was rich with tigers. Perhaps, this was the first tiger introduction in the world.

Tiger's grave: Dungarpur had a strong male tiger called as Bokha. It died on December 16, 1934. It was dear to Maharawal Lakshman Singh of Dungarpur, so he ordered it to be buried near the Navalkha Baori (step



well) and a special grave was created as its memorial. A temple dedicated to tiger known as Naharsati is situated towards eastern edge of Sariska Tiger Reserve in Alwar district. It is said that during ancient time a woman became Sati (self immolation) with a tiger near Baleta village. She was held in esteem as Nahar-mata (tiger's mother) and a temple was constructed as a memorial. A large number of pilgrims reach this temple to worship the Naharsati Mata.

Chinese belief: In Chinese mythology and culture, the tiger is one of the 12 animals of the Chinese zodiac. In Chinese art, the tiger is depicted as an earth symbol and equal rival of the Chinese dragon – the two representing matter and spirit respectively. The Southern Chinese martial art Hung Ga is based on the movements of the tiger and the crane. In Imperial China, a tiger was the personification of war and often represented the highest army general (or present day defense secretary), while the emperor and empress were represented by a dragon and phoenix, respectively.

In Buddhism, the tiger is one of the Three Senseless Creatures, symbolising anger, with the monkey representing greed and the deer love sickness. The Tungusic peoples considered the Siberian tiger a near-deity and often referred to it as "Grand father" or "Old man". The Udege and Nanai called it "Amba". The Manchu considered the Siberian tiger as "Hu Lin," the king.

Peoples' knowhow: Most of such beliefs and practices are based in superstition. But interaction with people who share space with the large

cats and have temples in their area, reveals that they also have a sound knowledge of the animals' biology and the precautions that need to be taken to protect themselves from them.

Thus, the deity of Waghoba (tiger) sets about an important discussion in the field of conservation. It sheds light on a different level of human-animal relationship. Such a relationship has been rarely explored in the field of wildlife conservation.

Generally, there is a huge focus on the economic aspect of the "human-wildlife conflict" and the media also highlights such events in a sensational way. Such reporting could have serious ramifications on how policy is framed to deal with these otherwise complex interactions.

The recent studies that look into the social and cultural aspects of the interactions teach us to go beyond the economic facets and explore the other kind of relationships existing between human and other carnivores, including the large cats.

New insight: Today, because of various reasons, large carnivores are bound to increase their ranges into human dominated landscapes. However, conservationists and managers are unable to deal with the human dimension of the issue due to the negative narrative in the ecological sciences about human-large cat interactions.

I have worked in extreme tribal areas of southern Rajasthan, India, for couple of decades and lived at tiny non-facilitating hamlets of tribal people.

While I was doing my doctoral work on ethno-botany of Phulwari ki Nal Sanctuary, I had endless experiences with local people. Also I had many encounters with wild animals. An irony that during my stay there, the tiger had become extinct in that region (Udaipur landscape). I felt the shadows of this predator were to be observed over mental floppies of local people.

The aim of conservation is to promote co-existence. We need to look beyond the negative aspect of the human-animal interaction. Better we try to understand co-adaptation strategies that humans have developed over the centuries to survive and flourish with the large cats.

TIGERS CAUSED VILLAGES TO BE EVACUATED

By Editors of C. TIMES



A scene of the 'Beat' to push the Tiger ranch out to face bullets, in Surguja, National Geographic

"We went to India not only to observe the changes that had occurred since my former visit, 23 years ago, at the conclusion of our Philippine War, but also to visit places of interest, see something of the military air and ground forms, visit some old friends and acquaintances, and then have a good tiger and big game hunt."

---National Geographic 3 Aug 2014

In November 1924, Brigadier General William Mitchell, who is regarded by many historians as the father of the U.S. Air Force, published this account of a three-day tiger hunt in eastern India with the Maharaja of Surguja, a legendary tiger hunter.

Mitchell reported that tigers posed a major threat in central India, killing 352 people in the villages surrounding the Surguja district in 1923 alone.

He stated: "Tigers have been known to cause whole districts to be evacuated. There is a record of one beast which so terrorized a community that 13 villages were evacuated and 250 square miles thrown out of cultivation.

Another completely stopped work on a public road for many weeks, while it frequently happens that mail-carrying is suspended on account of tiger activities."

Nearly a hundred years later, their numbers were to decline from more than 100,000 wild tigers in Asia to fewer than 3,200. And where once the National Geographic Society celebrated such hunting accounts, it now-through its Big Cats Initiative-partners with wildlife conservation programs such as Panthera and the Global Tiger Initiative to save the species and its habitat.

FROM SHOOTING SPREE TO CONSERVATION TIGER POISED FOR ITS GOLDEN JUBILEE

By Harsh Vardhan

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This Goddess rides Tiger in Indian pantheon, courtesy Mehrangarh Fort Museum, Jodhpur

Harsh is a citizen advocate for wildlife conservation and is based in India. -- Editors

All through history, for wild species, it had been shoot, enjoy, and let the loss be recovered on its own. The sixties of previous century marked a precarious crisis -- recovery rate plummeted as hunting of Tigers became rampant all over India. Signing onto the Stockholm Declaration (1972) appeared a pointer only.

The IUCN (International Union for Conservation of Nature and Natural Resources) convention in 1969 in New Delhi raised a curtain over new possibilities to be tapped. India realized the grim complexities and imposed a total ban on hunting of Tigers in 1970. It marked a turning point. On one hand a Gallup census was conducted to assess Tiger number. On the other, Government of India enacted the Wildlife Protection Act in 1972, which came out as the first comprehensive legislation on wildlife in the country.

Launch of Project: Formal launch of Project Tiger was made in 1973 at nine especially designated forests in India. The objective was to practice conservation at the ecosystem based approach: free the habitat from anthropogenic pressure, maintain water sources, develop grassland to

enable prey base multiply so the predator would sustain better in the same realm. It happened to be the most challenging task for the Government, nay forest officials.

It has been a long road. It has often marred by severe criticism of forest officials' working as poaching continued. Demand for tiger products continued to be rife. Strategies were revised. Science finally given its due weightage to manage tiger and its related aspects which so far were being left to age old beliefs. India attained a new high in international space, having conserved the Tiger. The number of its Project Reserves increased from 9 in 1973 to 53 in 2022.

The year 2023 marks completion of fifty years of Project Tiger. Hence an opportunity to review past working and consider what next for Tigers in India and other Tiger Range countries. The opportunity is a coveted honour for the NTCA (National Tiger Conservation Authority) to assume leadership.

Charismatic: Tiger is a charismatic predator! Those who have observed it in the wild may agree to this statement. Asia's cultural traditions are replete with citations of this beautiful animal. Yet Tiger's population is confined to a few pockets of their historical range. Wild tigers are found in only ten countries. Their historical range has shrunk by over 95%.

We need to emphasize that tiger conservation should not be treated as source of tourism only. It generates incalculable benefits to society at large, especially to stake holders living around tiger reserves. This predator helps safeguard a range of critically important habitats and ecosystems. Let us summarize benefits.

Multitude of wildlife: Being the top predator, it helps check the population of herbivores while maintaining the health of a forest or grassland that they call home. By protecting their kingdoms, we are securing the future for other wildlife.

Pacifies climate change: Tiger landscapes store more carbon than any other forest in any region. Asia is an example which has the most effective carbon stores in the entire world.

Economic advantages: Tiger reserves support human life by protecting fish nurseries and agricultural lands, providing clean drinking, and irrigation water. The people living around tiger reserves are direct beneficiaries.

Cultural icon: For centuries, tigers are symbolically embedded in Asia's culture. From ancient folklore, children's books to scriptures, this feline has been largely depicted and narrated since time immemorial.

Ecosystem umbrella: As the apex predator, tigers shape the ecosystems which they dominate.

So they prevent over-grazing by limiting herbivore numbers and maintain ecological integrity.

Tigers are solitary and have large home ranges making them excellent 'umbrella' species providing space for a variety of other species to flourish.

Analysis, carried out by an Indo-Australian team of scientists entitled 'Making the hidden visible: Economic valuation of tiger reserves in India' was published in the journal Ecosystem Services. The scientists estimated that conserving each wild tiger had a flow value of USD 2.19 million a year.

Each dollar counts: According to a World Wildlife Fund (WWF) report, “Beyond the Stripes: Save tigers, save so much more, “tigers’ biodiversity-rich areas harbor a wealth of critically important goods and services that millions of people rely on, from mitigating climate change and safeguarding freshwater to reducing the impact of disasters and improving the health of local people.

The report highlights that securing tiger landscapes could help protect at least nine major watersheds which regulate and provide freshwater for up to 830 million people in Asia, including in urban areas across India, Malaysia, and Thailand. Similarly, safeguarding tiger landscapes could, in turn, protect the last remaining forests critical for carbon sequestration, helping to mitigate climate change.

“Every dollar invested in saving the wild tiger also helps save many threatened species, and ecosystem services that are critical to millions of people,” said Michael Baltzer, Leader of WWF Tigers Alive.

What future: Yet, wild tigers are endangered, and their habitats are threatened. As much as 95 percent of their global range is lost. The cats are now confined to fragmented populations in Asia’s surviving forest habitats. Even in the remaining range where tigers roam, close to half (43 percent) of the present suitable tiger habitat could soon be lost to unsustainable agriculture expansion and urbanization, the report warns.

Forest loss continues at an alarming rate in tiger range states. Malaysia and Indonesia are among the world’s leading producers of carbon emissions linked to forest degradation. If such trends persist, more key tiger



landscapes could switch from absorbing carbon to becoming net carbon emitters. In Sumatra alone, the only place in the world where tigers, orangutans and rhinos are found in the same habitat, deforestation has reduced natural forest cover by more than 50 percent in the past three decades.

“The success of protecting wild tigers is a perfect indicator for Asia’s sustainable development. With Asia’s rapid economic expansion, prioritizing tiger conservation will significantly aid in securing natural capital that is necessary to meet the region’s sustainable development goals,” said Baltzer.

Win-win: “Protecting tiger landscapes achieves a win-win for tigers and for our future generations. But if we fail to save wild tigers, we may fail to save much more”, the report stated. Tigers share their home with many other endangered species, such as the Asian elephant, leopard, and orangutan. Protecting the tiger’s habitat thus helps to protect other threatened wildlife, including endangered but lesser known species that would otherwise receive little attention. India’s Western Ghats is an example where tigers have helped to spearhead the protection of natural sites.

THE LAST CAMBODIAN TIGER WAS CAMERA TRAPPED IN 2007

Cambodia’s dry forests were once renowned for its pristine forests and magnificent wildlife - and was even known as the Serengeti of Asia. But because of intensive poaching, tigers and their prey have slowly disappeared, leaving behind a silent landscape.

The camera trap image of the last tiger of Cambodia was an iconic one, used by WWF to highlight the urgent need of restoring the landscape. In late September 2017, the Prime Minister of Cambodia announced that tigers will be reintroduced to the country with the help of WWF.

This reintroduction plan can be a success but will not be the only solution. Has it happened? No! Wild tigers, globally, are still at risk and face dangers from habitat destruction due to a demand for timber, energy and tiger products.

TIGER FACTS

SCIENTIFIC NAME

Tiger: *Panthera tigris*

Subspecies: *P. t. altaica* - Amur tiger (a.k.a. Siberian tiger)

Subspecies: *P. t. amoyensis* - South China tiger (possibly extinct in wild)

Subspecies: *P. t. balica* - Bali tiger (**extinct**)

Subspecies: *P. t. corbetti* - Indochinese tiger

Subspecies: *P. t. jacksoni* - Malayan tiger

Subspecies: *P. t. sondaica* - Javan tiger (**extinct**)

Subspecies: *P. t. sumatrae* - Sumatran tiger

Subspecies: *P. t. tigris* - Bengal tiger

Subspecies: *P. t. virgata* - Caspian tiger (**extinct**)

PHYSICAL CHARACTERISTICS

Body Weight: Males: 100-261 kg (200-575 lb); up to 325 kg (716 lb) in zoos. Females: 75-177 kg (170-390 lb).

Head-Body Length: Males: 189-300 cm (6.20-10 ft). Females: 146-177 cm (4.79-5.81 ft)

Shoulder Height: 80-100 cm (3 ft).

Tail Length: 72-109 cm (2.4-3.58 ft).

Pelage: Black or brown stripes on a red-orange to golden yellow background.

EARLY HISTORY OF TIGERS IN MANAGED CARE

About 300 BC - tiger presented by King Seleucus of Syria to people of Athens (Thapar 2004). Long history of tigers kept in palaces of rulers and displayed in traveling animal shows (Müller 2001).

In 1677 - tigers displayed at Leipzig Fair, Germany (Müller 2001).

20th century records: Early 1900s - first open enclosure for large cats at Tierpark Carl Hagenbeck in Hamburg, Germany (Müller 2001).

Late 1900s - a few zoos began to display males with females, and females with cubs.

THE COMPLICATED STORY OF THE WHITE TIGER

By Riley Davis



Mohini with her cub named as Kesari

The white tiger is a popular animal in the U.S. Its bright coat and striking blue eyes paint a stark contrast against its orange brethren, and the rare specimen has historically drawn huge crowds to zoos and exotic animal performances. But many say the white tiger's existence is unethical. And its future is murky.

Currently, it is estimated that there are about 200 white tigers left in the world. And that number is dwindling, due to the complicated reality of white tiger genetics.

A Genetic Variant: White tigers are not a separate species or subspecies of tiger. A recessive gene causes their unique coloring that triggers leucism, or reduced pigment. A 2013 paper published in the *Journal of Current Biology* identified the gene as SLC45A2, a genetic variant known to also cause lightened pigmentation in horses, fish, and chickens.

In the wild, this genetic anomaly is rare for tigers, with an estimated one in 10,000 births. It's also considered a genetic detriment. It impedes a tiger's ability to blend in seamlessly with its surroundings to hunt effectively. And in captivity, robust inbreeding carried on the many white tiger lineages, rather than natural occurrences of SLC45A2.

In fact, every white tiger in the U.S. is

descended from just one tiger, named Mohan. In 1931, people gifted Mohan to a maharajah in India, and in 1958, they bred him to one of his daughters and created the first litter of white tigers born in captivity. They transported one of those cubs, Mohini, to the U.S. and gave her to the National Zoo in Washington, D.C. The zoo later bred her to one of her offspring, continuing the inbred line.

Magicians: After Mohini's rise to fame at the National Zoo, the white tiger breeding craze took off. Two of the most prolific rare-colored cat breeders were magicians Siegfried & Roy, whose use of white tigers, lions and other exotic animals proved one of their most lucrative career decisions. Over half a century, the pair reportedly performed 30,000 shows for 50 million people, and generated over \$1 billion in ticket sales.

As demand for the rare cats soared, healthy genetic supply simply could not keep up and inbreeding practices expanded. And today, almost every living white tiger possesses some genetic abnormality associated with inbreeding - including poor eyesight, heart trouble, malformed paws, facial abnormalities, spinal deformities, or immune system issues, says Tim Harrison, director of Outreach for Animals.

"Inbreeding is what caused what we have now, which is basically a mess," says Harrison. "It's not fair for these animals to be used like this, and for people to just use them and dispose of them."

Backyard Cats: Within the last decade, accredited zoos and rescues have stopped deliberately breeding for white tigers. In 2011, the Association of Zoos and Aquariums banned the practice of intentional inbreeding for the expression of rare recessive alleles. But no such regulations exist in the U.S. for privately owned big cats or unlicensed facilities. Although the House passed the Big Cat Safety Act in 2020, which would make private ownership illegal and bar public contact with the animals, the bill has yet to pass in the Senate.

Therefore, most of the white tigers that Harrison and other accredited rescues rehome are backyard cats, which private citizens own and who can no longer control them. Or, they find facilities that use the animals for dangerous pay-to-play business models, like allowing visitors to pose for pictures with the cats.

When Harrison and his team get a call about a white tiger, or any big cat that needs rehoming, they work with rescues who are a part of the Big Cat Sanctuary Alliance to find a safe place for the animals to go. These places follow strict no breeding and no interaction policies, for both animal and human safety.

Over-breeding: These restrictions mean there may be few white tigers left in the world. Big cat advocates like Harrison agree that at this point, this is a good thing.

"If you looked for the recessive genes and you did it scientifically, with good clean biology, you would end up having a pure white tiger that didn't have all the abnormalities," Harrison says. "But nobody wanted to take the time to do that - they just over-bred them, strictly for money."

From *Discover Magazine*:
<https://www.discovermagazine.com/placet-earth/the-ethical-problems-with-breeding-the-white-tiger>

ENGAGING LOCAL COMMUNITIES TO BIRD CONSERVATION

By Preston Mutinda

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Preston Mutinda success story

Preston is the Director of the Preston Mutinda Wildlife Foundation

In the semi-arid and hilly terrain which borders the capital city of Nairobi, Kenya, the Mutinda Wildlife Foundation works to help save the last remaining wildlife in East Africa. In one program, center staff work closely with local schools and communities to conserve birds.

Background: To feed or not to feed wild birds affected by severe drought in Kenya was a big concern in the area around the Mutinda Wildlife Center. In response to this problem, the Preston Mutinda Wildlife Foundation bird club undertook a project from May 2022. The project is led by Preston Mutinda who is a long-time ornithologist in East Africa. He worked with club members and local communities to help save birds that are not finding food. Here is Preston's story.

Bird feeders: We designed 300 bird feeders which were made using felled for road construction eucalyptus wood. Eucalyptus is not native to our area. Our club members including the community were taken through a 5-day exercise to induce them into feeder sight monitoring activities which were

organized by the center. During that period, members visited community homes and local schools to engage them in the project. The foundation was pleased to see the community's willingness to maintain, identify, monitor, and protect the feeders.

Feeder Location: It is important to educate the team and community about the risks involved when feeding the birds. I took time to mention the negative issues mostly the bird flu. I decided the feeder cleaning should be done by the Foundation's bird club members who are better placed to relay firsthand information about the process. The foundation also engaged communities to place the feeders around their homes where there are no pets like cats. Many of the feeders are in our Foundation's grounds.

Preston Mutinda Wildlife Foundation continues working in collaboration with local schools to conduct monitoring activities daily to ascertain feeder use and the biodiversity status around their schools' area.

Food: Farming is the source of livelihood for many communities in Kenya and food for most tribes. For several years continuously, tribes in

Kenya have witnessed climate change effects such as reduced or unpredictable rainfall and prolonged drought spells. The drought has prevented crop production and limited vegetation for grazing animals. At the moment, the tribes bear the brunt of these negative impacts with families having no food including their domestic animals and of course wildlife. The foundation continues to donate food to the less fortunate schools to aid in their meal plans.

We started feeding seed eater bird species with rice and corn. For fruit eaters' species, we are giving them papaya and watermelon.

Findings so far: Some of the *seed eater species* recorded on the feeders are; black headed weaver, speke's weaver, baglafaecht weaver, lesser masked weaver, vitelline masked weaver, chestnut weaver, Holub's golden weaver, grey-capped social weaver, white-browed sparrow weaver, chestnut sparrow, grey-headed sparrow, speckled-fronted weaver, red-billed quelea, common bulbul, red-eyed dove, speckled pigeon, laughing dove, northern pied babbler, village indigo, red-checked cordon bleu, red-



A tea session at Preston Mutinda Foundation



Conservation lessons through a computer.

billed firefinch, pin-tailed whydah etc. So far speckled mouse bird is the only species showing on the fruit feeder.

Why are birds disappearing in Kangundo? When I was young and walking to school, there were trees all around- along the roads, on the hills and as far as the eye can see. Most of these trees were native to our area. When exotic trees were introduced and human population started to increase, we started losing huge numbers of these native trees felled for roads, housing, farming and to meet the demand for domestic energy in Country. The native trees provided food and shelter for birds and other wildlife. Birds started

avoiding the introduced exotic trees. Mostly blue gum, grevillea Robusta, jacaranda, pine and many more. Forest loss and degradation has caused major threats to our birds' survival. In Kenya the 43 tribes in rural households use firewood and charcoal as the main sources of cooking energy.

Bird habitats are under threat here in Kangundo, seasonal wetlands which host birds are crowded with people, cattle, goats, donkeys, sheep & others. We know the wetlands provide essential ecosystem services and support to many livelihoods. These domestic animals are everywhere in the hills, grasslands, woodlands, bush and

in rock-pools. We are no longer watching weavers making nests on their acacia habitats cleared for urbanization growth. We are also not witnessing birds exhibiting extraordinary behaviors like brood parasitism and honey guides indication of finding wild bee nests for honey. There are less and less bird melodious songs, bird numbers are diminishing.

Bird Protection: the European bee-eaters have arrived in our area. This is a sign of arrival of the short – rainy season according to Kamba tribe traditional beliefs. Mumbua a student from a local school does not believe the migrant birds can fly all the way from Europe to Africa. She wonders how the birds could make it if the smaller planes from Nairobi cannot make the trip. This and many other questions from students help our Foundation reach many schools for bird conservation. Bird migration has long amazed the local people with great distances flights.

Our Foundation has been working closely with many local schools and communities in areas of Kenya in implementing projects such as the bird feeding program that seek to conserve, protect, and expand existing bird areas. Slingshot by young boys in killing birds has dramatically decreased and bird hunting by adults has reduced. The formation of bird clubs in our area has greatly helped spread public awareness engagement, identification, monitoring and maintaining the integrity of this area. I conclude with another question from a student; *What would happen if they were no birds in our area?*



REFLECTION ON RELEVANCE OF NATURE INTO INDIAN PHILOSOPHICAL THOUGHT

By Manoj Sharma

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A miniature painting depicting Tiger hunting during princely era, wikipedia

Manoj Sharma worked for the Indian Statistical Service for 10 years and then immigrated to the USA to pursue graduate studies in statistics. Currently he is the Director of Biostatistics at Grail Inc., supporting the company vision of “Detect cancer early, when it can be cured”.

As we approach to celebrate the 50th anniversary of Project Tiger in India, I recollect my first trekking experience to Odi Ramsagar hunting lounge at the outskirts of Jaipur.

This experience coincides with the year 1973, when the Government of India initiated the Project Tiger. Our school field trip to this place was on foot with our teacher, who took this initiative to introduce the nearby forest to us. This trekking experience defines how the seed for my love for nature was planted.

The Order: Indian philosophical thought as propounded in the Upanishads dates back around or before the sixth century BC with the earliest being Brihadaranyaka (Great Forest) by Sage Yajnavalkya. These Upanishads are symbolic and discover hidden connections between things based upon

the observation and reflection by Sages in the reserved forests (sanctuaries).

Sage Yajnavalkya mentioned to Maitreyi, his wife about leaving the house and going to dwell in the forest as Sanyasin and reference of King Janaka indicate the connection between the sages and kings. This philosophical thought has contributed to the governance model for number of centuries; where the King provided protected sanctuaries, where sages could observe and reflect upon the nature and in return provide advise to the King on life matters.

Being trained in mathematics and in abstract thinking, I have often contemplated the above scenario into my thoughts while walking into the woods. I notice the similarity between trees and sages (they are there to observe and provide).

Even sages through their austere practices demonstrate their intent as if they want to turn into trees.

Tadasana is a yoga asana to resemble the tree pose. Trees last long and may provide for multiple generations of living life into the forests. The

President tree, also known as Warren Harding is the oldest living tree at over 3,300 years. The tree stands tall at almost 250 feet in the Sequoia National Park. The Great Banyan Tree is over 250 years old and covers about 14,500 square meters of land near Kolkata.

Pride: The musk deer stotting in search of musk smell outside, while the musk is within and how this consumption of energy for illusion takes his life when he is within the predator's reach. His stotting also demonstrates his pride for its gait.

Man and woman of the world almost run around to chase what is within until they are aware. In their chase, they also adopt innovative ways for acquisition and pride.

Tiger on the other hand is pretty lazy most of the times except when he is on hunt. As the largest male tiger could be as long as 12 ft and weigh as much as 675 lbs, they need to conserve energy for the hunt.

Their hunts not always end in success with hunting success rate being only 10-20%. Being big, they often need hours to recover their strength before a new hunt.

Pursuing unattainable targets carries the risk of starvation. Their creativity lies in conservation of energy and making full effort at right target. They also live on fresh hunt while they may leave some portion as feast for other creatures. Tiger in Indian mythology as a vehicle for Durga (the Shakti or Warrior) symbolizes that power must be used with caution only to reduce the societal harm and/or for self-protection and should follow the model of Tiger. As the Project Tiger is completing its 50th year anniversary and India has now 53 specially designated Project Tiger reserves or sanctuaries.

Tourism and visit to these sanctuaries provide lot of economic uplift to adjoining areas. Could we include a necessary element for the visitors to contribute to observation and reflection upon their visit to these sanctuaries?

CELEBRATING PEACOCK: POACHERS EYE IT

By Dr.Sonika Kushwaha

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Students in a Peacock formation, Sonika

Sonika Kushwaha is President of Indian Biodiversity Conservation Society. She is a zoologist and operates from Jhansi. She has been working for conservation of endangered species, mainly the Gyps Vultures. She coined Peacock Day on 15 November 2022 and canvassed for conservation of the national Bird of India.

The Indian Biodiversity Conservation Society (IBCS) from Jhansi, Uttar Pradesh, India took the initiative to organize First World Peacock Day on 15th November 2022. I had thought of it some years ago after we wrote a piece on Indian Peafowl. Dr. Akhilesh Kumar, Secretary, IBCS, and Aman Singh, Core Committee member, IBCS, were pillars of this unique initiative.

Our objective received instantaneous support from Tourism & Wildlife Society of India. Others who helped this cause included IRE-Jungle-Narsingharh (Madhya Pradesh), Manav Organization (Lalitpur-Uttar Pradesh), Wild-CER (Nagpur-

Maharashtra) and World Pheasant Association, United Kingdom. A number of other organizations and educational institutions encouraged this initiative so it could take place.

Beauty-appeal: The theme for first World Peacock Day was “Let the beauty Survive”. To commemorate this historic day, various events like Nukkad Natak (street plays), rangoli (painting the floor), mehendi (pasting henna over pal), poster making, quiz, peacock survey, awareness through lectures, power point presentations, documentary “Sarang” on Indian peacocks were organized at different places in India. A pledge on peacock was also prepared which was taken by students from different educational institutes.

To create awareness for wider audience, Sarang-The Peacock, a documentary on Peacocks, was made available in English, Marathi and Hindi languages by its producer-director, Susan Sharma from IndianwildlifeClub.com, an online club for nature lovers. The message

was taken to wider audience by the popular blog, Mongabay-Hindi through a detailed pictorial feature on the present status and plight of peacocks.

The preparations started a fortnight ago. We shared an amazing fact about Peafowl each day through various social platforms to create awareness amongst the public. An online registration form was shared so that maximum number of interested people could join the celebrations. The response was immense. Prior to start of the main event, more than 60 nature lovers from various NGOs, Schools, Colleges, Universities, Forest Departments, and individuals signed with the Indian Biodiversity Conservation Society. They represented 14 States of India.

Awareness material was prepared both in Hindi and English. It included posters on World Peacock Day, flyers about World Peacock Day, Importance of Peacocks in Culture, Religion, History and Ecosystem, Threats to this bird species, How to conserve Peafowl,



Pledge to protect the India's National bird, survey sheets for public and data sheets for Forest Department, etc. The material was shared with all the organizers.

Danger signal: All participating organizations celebrated the event on 15 November in different parts of India. So, it became a historic event solely dedicated to Indian Peacock that was declared National Bird of India in 1963. It, however, faced difficult time for 59 years facing lack of seriousness for its appropriate conservation and protection. The celebration conveyed

the message-- it is time to care for India's National Bird.

We compiled almost all news items published in the Indian dailies and magazines about Peacock's mortality and tried to reason the causes. Not much data was available with forest authorities. Summary: poached 279+; poisoned deliberately 241; pesticide consumption 107; total 627+ peacock mortalities across India within past year. The survey revealed that tonnes of Peacock feathers were collected after being poached and were traded, some stock going abroad.

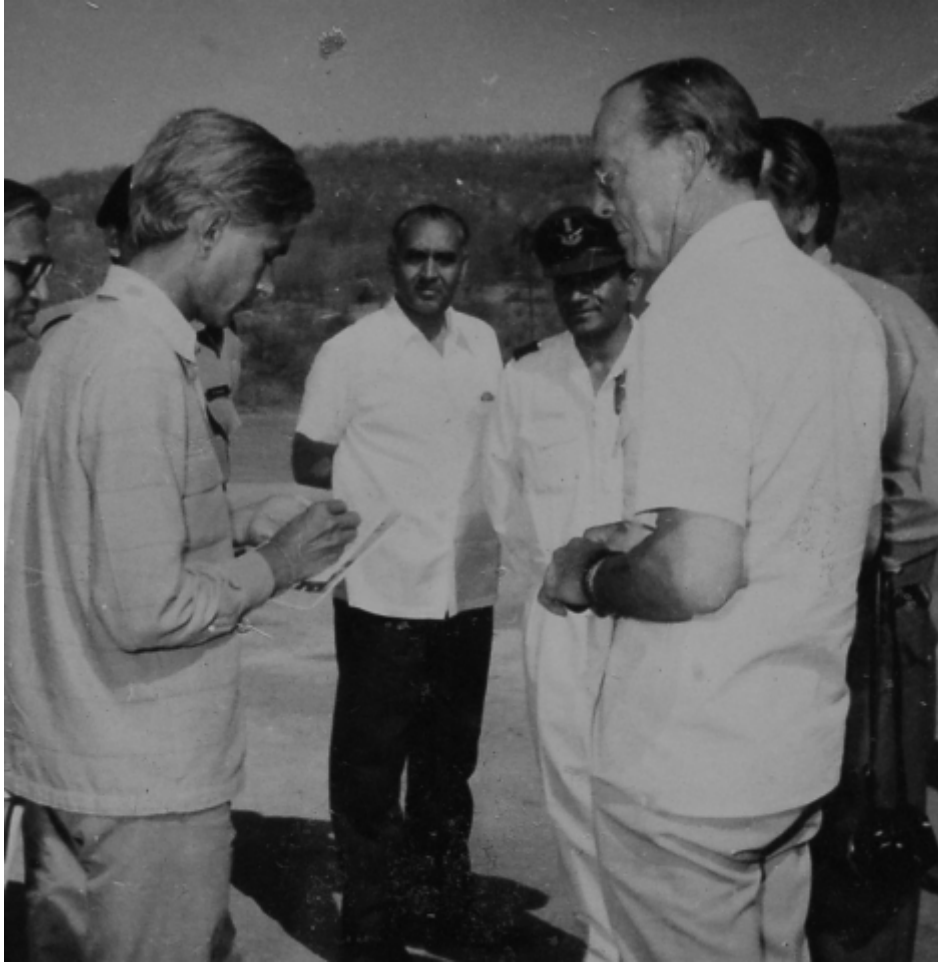
There are 3 species of peafowl in the world:

1. Congo peafowl is listed as Vulnerable on the IUCN Red List.
2. Burmese peafowl has been listed as endangered on the IUCN Red List since 2009. It is the national bird of Myanmar.
3. Indian peafowl is presently listed as a species of least concern on the IUCN Red List, but is not the status of the other two species a warning for the Indian peafowl?

A CHAMPION FOR WILDLIFE

By Martin Goodman

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Harsh Vardhan (left) having a word with Prince Bernhard at a specially created helipad near Jhakra in Ranthambhore during 1973 winter. Behind the prince is Dr. Kailash Sankhala (right), then Director, Project Tiger



Kailash Sankhala was famed to drive VIPs, here he (left) is serving Prince Bernhard in Ranthambhore's Kachida habitat, HV's records.

The writer is a novelist and ardent wildlife supporter known for his ecological advocacy. He is based in Britain. – Editors

I first came to know Harsh Vardhan as the founder of the Indian Birding Fair, which introduces children to the thrills of birdwatching, and then in my researches found him again and again at the centre of Indian conservation movements. In his late seventies, lean and alert, his skin a burnished gold, he watches with full attention.

Pride: The wall inside the entrance of Harsh's Jaipur home displays a run of framed black and white photos from the late 1920s. One shows Harsh's father in Malta, his jacket pinched closed over his narrow chest, a trilby shadowing his face. He was working as a private secretary to the Maharajah Jai Singh of Alwar and was returning with him to India from a trip to England. Back in Rajasthan Harsh's father joined in royal hunting parties.

One of the wall's photos is a group portrait of forty-two people arranged along a hillside. Front and centre stands the Maharajah who holds the only shotgun, the hunting party's seven women standing to his left and right. In front and laid on their sides, their eyes still open as though in sleep, are three antlered deer. The other group photo, a smaller hunting party shorn of all but one woman, was taken out on a plain. Its trophy dead animal is a Bengal Tiger.

The wall also holds a certificate from the US Department of the Interior's Fish and Wildlife Service, commending Harsh for his work on conserving natural resources.

Culling: 'No one's ever asked me about this wall before,' Harsh says. It surely is incongruous, this wildlife champion with memorabilia of classic hunts in his entrance hall. 'It's a homage to my father, who gave me and my brother this house, and to the wildlife stories that kindled my love of nature.' The Maharajah's hunting was culling, Harsh explains, and there were game rules. No female animal was to be shot. Males were selected by the Maharajah and his hunting master.

Spurred by the Wildlife Protection Act of 1972, Harsh spotted a niche. 'Nobody else was writing about it,' he recalls, and so he became a wildlife reporter. For the Times of India and the



When a four-seater helicopter of Indian Air Force landed at Ranthambhore's Jhalra habitat to facilitate Prince Bernhard of The Netherlands (1973 winter), HV's records.

Hindustan Times he covered the 1973 set-up of Project Tiger, a government initiative to preserve enough tiger habitat to secure a viable breeding population. When Prince Bernhard of the Netherlands, a founder of the World Wildlife Fund, came on visits to the tiger parks, Harsh went with him.

Protest, the answer: Winter 1979, and an Arab prince and his retinue crossed from Pakistan to camp in the Thar Desert outside Jaisalmer. They were there to shoot Great Indian Bustards. A group of Bishnoi villagers marched in protest through the streets of Jaisalmer.

Alerted to the situation, Harsh marched too. 'When there's a breach of the wildlife act, and the government is not doing anything, we have to stand in opposition,' he says. 'It fell on our shoulders. You write a letter, the government does nothing. The only thing you can do is protest in the street.'

His march was in Jaipur, where he supplied a group of forty people with banners painted with slogans and led them to the home of the Governor. The Governor's mansion served as a scenic backdrop for a photo opportunity. Journalists had received Harsh's press release. 'The press is a messenger,' Harsh explains. 'A bridge between society and the rest of the world. The worth of the media was known to me.'

The Jaipur protest against the royal hunting party became the front-page story in the following morning's edition of the newspaper Patrika. Harsh Vardhan modelled another



Prince Bernhard (left) and Kailash Sankhala at Ranthambhore Tiger Reserve's Jogi Mahal, HV's records

conservation tool: use of the courts to protect wildlife. With a friend in Jodhpur he petitioned the Rajasthan High Court to stop the Arab hunting party. On January 1st 1979 the court took mere minutes to deliver its decision; they imposed an immediate fourteen day ban on killing bustards in the Thar desert. The Arab hunting party withdrew.

Isn't it expensive, I ask Harsh, taking your wildlife cases to court?

Abiding faith: 'I've given petitions to court four times, and never used a lawyer,' he says. 'In any case, I couldn't afford one. I have faith.'

When the Bishnoi caught the Bollywood superstar Salman Khan for killing blackbuck, Harsh took their case to Doordarshan TV. At the time, he had a high-power management job at a

major company that relied on its government contracts. 'I bitterly criticized the Chief Minister's Office—they were doing nothing and just sitting on this poaching case. My action was picked up as evidence against me. I was a threat to the government.' His activism cost Harsh his job. Since then he's got by on his passion for wildlife.

Money: Money, for Harsh, is a free-flowing stream; you don't build a dam and collect it but direct it to whatever needs watering. He has a simple policy as regards finances. 'We should save as much as we can and put all that into conservation.'

'Be truthful to yourself and to society. We're becoming hypocrites. Money is making us a different person. The root cause is money. I need it, but can prove I am doing it without it.'

RECALLING TIGER SAVIOUS



India's Prime Minister, Indira Gandhi caressing a Tiger cub presented to her by Kailash Sankhala during late 60s in New Delhi, HV's records

It is long since India's Prime Minister, Indira Gandhi addressed the 1969 IUCN General assembly Meeting in New Delhi. She had soft heart for nature conservation and always pleaded for just balance between development and ecology.

India declared ban on Tiger hunting in 1970.

The Wildlife Protection Act was introduced in India in 1972. It was scripted by Dr. Ranjitsinh Wankaner, then Director Wildlife for the country.

Dr. Singh was member secretary of the committee that declared Project Tiger. It was formally launched in April 1973 at Corbett Reserve.

Nine Tiger Reserves were included then. Their number in 2023 reached to 53.

There was time when Tigers were counted through pug-mark technique claimed to have been introduced by S.R. Chaudhary, a forest officer from Orissa. He had maintained a Tigress at home and called it as Khairi. The technique was to be found full of errors but was in vogue to fudge numbers all over India as it earned good marks to forest officials.

Then came photograph-identification which was felt as rather cumbersome.

Finally the camera-trap technique provided some concrete proofs of how many Tigers remained in a forest.



Dr. Ranjitsinh ji



S.R. Chaudhary, a forest officer, with a wild Tigress he called Khairi, Orissa's source



Kailash Sankhala, a forest officer, became first Director of Project Tiger in 1973, HV's records.

TIGER BUTTER

By Diane Glancy

Is it only when you're little you know tigers live in your closet—

one with your shoes on his two ears,
another with your umbrella tied to his tail;
the rest wearing your red coat and blue trousers with the red buttons?

Is it only when you're little the dustballs have mountainous shadows in the crack of light under the door?

Or is it also NOW you fear that tigers will eat you—
when you wake in the middle of the night and don't know where you are, nor remember how far you've come.

Your nose hurts like a plowed field, your fingers stiff—
Then somehow, you remember what you've accomplished.

The sewing is finished—

The red buttons threaded to the blue pants and the little coat with its sleeves.

And you know you have given them to the tigers
(so they won't eat you).

But they chased themselves around a tree and melted into butter.

NOW you can pick up your coat and trousers, your shoes and umbrella. Soon, even, you can start your car and go—
The promise of dawn already on the face of the clock-radio. Source: info@poetryfoundation.org

PREDATOR/PREY GAME

Game is adopted from Environment for the Americas educational materials.

During this game, participants play a tag game to learn about predator and prey relationships.

To make the game more realistic for your location, change some of the predators and prey in the game to animals that can be found where you are.

For instance, change one of the predators to a tiger and one of the prey to a chital if you are in India.

To find the logistics and procedures to play the game, go to <http://www.birdday.org/2014materials/PredatorPrey.pdf>.

You might have some of the older students make the changes so the game fits your local area.

Recommended Ages—Families or lower grade school children.

Objectives

1. Identify and find prey.
2. Describe the role of camouflage for predator and prey.
3. Discuss the role of predator-prey relationships (optional).
4. Discuss the value of data collection (optional).

TIGERS OF THE WORLD



SOUTH CHINA TIGER
Panthera tigris amoyensis



MALAYAN TIGER
Panthera tigris jacksoni



SUMATRAN TIGER
Panthera tigris sumatrae



SIBERIAN TIGER
Panthera tigris altaica



BENGAL TIGER
Panthera tigris tigris

INDOCHINESE TIGER
Panthera tigris corbetti



BUILDING AN ENVIRONMENT FRIENDLY WORLD

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EDITORS FOR CONSERVATION TIMES



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Hartley Anderson is a Sydney, Australia resident who, after more than fifty years in sales and marketing roles, has decided it was time to pursue leisure activities. His recent and new activity which is relevant to conservation is beekeeping. He has a strong interest in India.



Bhatnagar, Nandita

Nandita Bhatnagar is a Clinical Biochemist with a passion for writing. Her articles have been published in local newspapers in the Bay Area. She also authors and narrates her stories for a monthly audio magazine "Suhava" published through Rotary Club of Maharashtra for blind school children.



Bhuvana Ramalingam

Bhuvana Ramalingam is a nature lover, travel enthusiast, long term meditator, and an Ayurveda wellness consultant living in Houston, Texas. She is the founding Director of Befriend Life Foundation, a non-profit based in Bangalore engaged in providing eco-friendly solutions.



Goodman, Martin

Martin Goodman is an award-winning writer and publisher based in the UK. His book *Client Earth* told the tale of eco-lawyers on their global battle to save the planet from environmental collapse. He is Emeritus Professor of Creative Writing at the University of Hull.



McCrea, Edward
Chairman of Editorial Board

Ed McCrea is President of Environmental Education and Conservation Global, a US nonprofit conservation organization. Over the last fifty 50 years, he has worked in environmental education and biodiversity conservation at the local, state, national, and international levels.



Pandey, Binita

Binita Pandey is a researcher in entomology with a keen interest in insect taxonomy, behavior, conservation, and plant preference of pests. She has conducted a Bumblebee research project in Nepal. She is the founder and manager of the Nepal Pollinator Network.



Patil, Amit

Amit is an eco-lover based in Dallas, Texas. Believing that a traveler always starts out in his backyard, Amit traveled extensively across India. He kept his passion for nature alive after moving to North America and has traveled extensively around the continent.



Sharma, Manoj

Manoj Sharma worked for the Indian Statistical Service for 10 years and then immigrated to the USA to pursue graduate studies in statistics. Currently he is the Director of Biostatistics at Grail Inc., supporting the company vision of "Detect cancer early, when it can be cured".



Sharma, Satish

Authored 11 books on forest, wildlife management and biodiversity, specialized in ethnobotany and ethnozoology, did PhDs on Plant life of Weaver Birds (1991) and Study of Biodiversity and Ethnobiology of Phulwari WL Sanctuary (2007), former Forest Officer, based at Udaipur.



Sharma, Seema

Seema Sharma is an independent journalist based in Chandigarh. She was formerly with the Tribune and the Times of India. She writes on wildlife conservation and environment and is a fellow of CMS-IHCAP fellowship on impact of climate change in Trans Himalayas.



Thomas, Rosamma

Rosamma Thomas is a freelance journalist based in Maharashtra, India. She has worked in radio and print journalism. She has only ever lived in cities, despite being a wild creature at heart. She has supported by writing on a unique cause like House Sparrow ex situ breeding initiatives.



Vardhan, Mamta
Co-ordinating Editor

Mamta holds a PhD in Environmental Science and Policy. She has several years of experience working with rural communities in India and East Africa on issues that lie on the intersection of rural livelihoods and natural resources management. Mamta is currently based in Edmonton, Canada where she works as a Research Officer with the provincial Government.

Published for Tourism & Wildlife Society of India (TWSI, email: birdfair1@hotmail.com), C 158-A, Dayanand Marg, Tilak Nagar, Jaipur 302 004, India, www.birdfair.org. Design and lay out by Manish Sharma at It's A Design Studio, Adarsh Nagar, Jaipur, email: itsadesignstudio@gmail.com.

Managing Editor: Harsh Vardhan

Note: This is the 12th edition, an e-newsletter for free circulation aiming at education and awareness on environmental conservation.

Conservation Times is on worldwide web, like to click: www.econservationtimes.com