

# VANA PREMI



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**Special Issue  
on Wildlife**



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- ❖ TSFDC has introduced new commercial species with in the RRR region viz., Seethaphal, Sandal wood, Red sandal, Rose wood, Teak, Casuarina jhunjiniana etc.,

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**Editorial:****Stop Wildlife Crime; It's Dead Serious!**

“Crime Prevention comprises strategies and measures that seek to reduce the risk of crimes occurring, and their potentially harmful effects on individuals and society, including fear of crime, by intervening to influence their multiple causes.»

**- the Prevention of Crime ECOSOC Resolution  
2002/13, Annex**

‘Wildlife Crime’, CITES refers to this word for taking, trading (supplying, selling or trafficking), importing, exporting, processing, possessing, obtaining and consuming wild fauna and flora, including timber and other forest products, in contravention of national or international law. Wildlife crime is a significant threat to conservation, animal welfare and the environment. However, most wildlife crimes worldwide are not properly traced, reported, or recorded, and all the culprits are not punished. Collectively all the enforcement agencies and many Non-Governmental Organizations are working hard to tackle this area of crime. The last 50 years of Wildlife Protection and Conservation Laws across the world have helped to slow the decline of species and habitats, but the decline has continued, nevertheless.

Taking animals out of their natural habitat raises many major concerns. First, it's an activity that rewards criminal organizations while exploiting poor people from vulnerable communities, who collect the animals for traffickers. Wild animals are captured through violent methods and are transported in inhumane conditions—leading to broken beaks, feathers, or legs. And every wild animal is a potential source of diseases like rabies and tuberculosis that can infect humans.

‘Operation Thunder, an annual global crackdown supported by Interpol to tackle wildlife and forestry crime, has resulted in more than seven thousand seizures of protected species and arrests of more than 3500 offenders. Operation Thunder in 2021 apprehended 300 offenders and seized 73,320 kg of timber, 478 kg of Ivory pieces 1.4 million plants, and

4,843 kg of marine products. Yes, this may be the tip of the Wildlife crime iceberg!

Every year during July and August, several hundred pilot whales and a sizable number of dolphins are massacred in the name of tradition by the inhabitants of the Faroe Islands (Denmark) for their meat and blubber. It is a classic example of crime against nature. Any action involving the mass murder of wild animals is genocide, a crime against species. This sickening crime can neither be ignored nor tolerated by modern society, which demands the people of Faroe to call for an end to this awful practice for the sake of humanity.

In our country, the WCCB unearths WL crimes regularly. On the night of the 6<sup>th</sup> and 7<sup>th</sup> of August 2022, a joint team of WCCB and STF, UP in Banthra on Lucknow-Kanpur Road seized 295 live Indian Tent Turtles carried in gunny bags in a bus. On 18<sup>th</sup> and 19 August 2022, in a significant case, a joint team of WCCB, STF, Uttarakhand Police & SOG, Uttarakhand Forest Department seized 12.5 kgs of Pangolin scales. It arrested five accused at Kashipur, Uttarakhand. A Joint team of WCCB, STF and Lucknow Forest Department seized 4 kg Ambergris (a waxy substance that originates as a secretion in the intestines of the sperm whale, found floating in tropical seas and used in perfume manufacture) from Lucknow and arrested four persons on 5<sup>th</sup> September. In a significant seizure, 146 pieces of dried monitor lizard genitals were seized, and two persons were arrested by a joint team of WCCB and NSTR at Srisailam on 3<sup>rd</sup> September.

It's a fact that wildlife populations are often pushed out of their natural habitats and into more contact with people, especially in dire situations caused by the climate crisis. Both groups are forced to fight for resources, which often leads to attacks on people from animals or people attacking the animal populations in hopes of protecting their homes, livestock, and crops.

Endangered and critically endangered animals are sold to private zoos, exotic pet collectors, headshots, and circuses for a very high price. The world's most endangered tortoise, the golden-domed ploughshare tortoise, is sold for about a hundred thousand dollars as a pet. Orangutans are slaughtered so that their babies can be captured and sold as pets for about twenty thousand dollars. Endangered and critically endangered animal parts such as fur, feather, and skin are used to make clothing, wall hangings, carpets, and furniture or decorations. Jewellery made of elephant ivory, sea horses, corals, and starfish has increased demand worldwide. Endangered and critically endangered animals are also eaten into extinction as delicacies in many countries.

Human race can't detach itself from nature as it is a part of it. Nature has given us genuinely and liberally, yet we don't appear to be fulfilled, and presently we take more than we ought to. Annually, we clear a large number of trees worth somewhere in the range of 50 - 150 billion US dollars. We make 20 billion dollars in unlawful benefits by killing and exchanging wild animals and plants, and we illegally eliminate 16-36 billion dollars worth of fish from our seas. Consistently our worldwide seas shed around 100,000 pounds of fish to illegal fishing. If we go on like this, by 2050, 90% of the industrially feasible fish will be cleared out. Our activities have serious outcomes on the regular habitat and the creatures. With each plant and creature vanishing, we will not have the ecosystem services such as carbon storage, water filtration, and retention of floods that wild animals and plants provide us. With every disbalance we create through our actions, we will inch closer to the earth becoming inhospitable and eventually inhabitable for our species. This is certainly not the future we have imagined for our children.

With all the technology now available, it is disappointing that we cannot say precisely how much wildlife crime takes place around the world with any good authority. Added to this, we faced a very different world following the global spread of COVID-19. Whatever the origins of the virus, the pandemic has put the interdependence of

society, economy, and environment into sharp focus. Perhaps it takes the exposure of our vulnerability for us to realize just how precious our wildlife is and to reveal how we may lose some species for good if we fail to act against those who commit crimes against them.

Wildlife crime illegally exploits the world's animals and plants violating national and international laws. Wildlife crime is serious. It has devastating consequences for people, the planet and prosperity. Wildlife crime exploits resources, undermine conservation efforts, threatens the rule of law, weakens communities, and destabilizes countries. Wildlife crimes often span many national borders. Hence an international approach is needed. Interpol's environmental security program works with member countries to prevent, detect, and disrupt wildlife crime and to dismantle the organized criminal groups behind it. Interpol provides investigation support, assisting countries with the forensic tools and techniques they need to help solve a crime. When suspects' names are run through its databases, it often finds the same names linked to other serious economic crimes such as forged documents, tax evasion, fraud, and money laundering. Wildlife trafficking networks across land, sea and air are used to smuggle drugs and weapons. It's pushing many species to the brink of extinction while threatening human health. Environmental crime is a crime that impacts on all of us. That's why Interpol is so invested in fighting it.

Sadly, wildlife populations are declining across the nations as they face several threats, including climate change, loss of habitat, human-wildlife conflict, and poaching. In the case of big game, 'Trophy Hunting' of lions continues to this day in Africa, with dozens killed yearly by hunters, mainly from the USA and Europe. During this year also, some British individuals continue to travel the world killing these species, not for self-defence or their own subsistence, but purely for fun, returning home with animals' body parts to brag to their friends. It is really disheartening to note that by allowing trophy hunters to import their trophies back into the UK, the government is helping to facilitate this harmful and unethical international industry. It is nothing but putting

money into the hands of criminals and fueling corruption resulting in the death of over one lakh African elephants for their ivory in just three years. It's time to act.

Organized crime is driving deadly trafficking in wildlife, pushing species to the brink of extinction. Wildlife crimes generally never occur in isolation and are carried out alongside other grave crimes and sometimes by very dangerous criminals. Wildlife traffickers use intimidation, violence and sometimes deadly force to facilitate their activities. For example, the 'Janjaweed' militia groups in Sudan are known to be involved in the trafficking of ivory. The Japanese crime syndicate 'yakuza' is known to be involved in the trafficking of elephant ivory, rhino horns and shark fins. The respective government machinery should not empower them with their inaction. Wildlife crimes have serious human costs. In Africa alone, about 1000 park rangers have been killed in the line of duty in the past decade alone, and about 80 per cent of them have been killed by poachers and armed militia groups!

Deep sea wildlife crimes too have significant environmental impacts. Bottom trawling is one of the most destructive methods used to capture bottom dwelling commercial fish such as cod, whiting flounder, shrimp, and crabs; and this involves the use of wide nets with metal rollers attached to them that are dragged across the sea floor, killing everything along its way crushing corals and kelp forests!

Combating a crime of this magnitude cannot be done by a single country, organization, or sector. It requires a collective global approach. It requires concerted action on the front lines and along the entire criminal justice. Organizations in this sector should share knowledge, research, and good practices. Governments should provide training on the latest investigative techniques and cooperate across borders through their own intelligence wings. This action supports countries to assess and strengthen their criminal justice systems. More needs to be done, and we can do more if we work collectively towards a world free of wildlife crime.

UNODC (United Nations Office on Drugs and Crime) is

the crime prevention office of the United Nations, and India became the fourth South Asian country after Afghanistan, Pakistan, and Sri Lanka; drawing on the resources and experience of all member nations to be better equipped to tackle crime. One of the ways it does this is through its International Consortium on Combatting Wildlife Crime (ICWC). Suitable Analytic Toolkits were designed to help governments evaluate and improve their systems for combatting wildlife crime.

Other critical areas for attention include updating the legislation used to prosecute wildlife crime, granting permanent funding to the National Wildlife Crime Unit, and increasing the number of qualified police, forest and other personnel investigators undertaking wildlife crime investigations.

Over time, species have been added to the schedules for strict conservation of wildlife and protection reasons, which may not be recognized in their formal "red list" status. In particular, there is a risk that although species may not be currently endangered, they would be, if it were not for their protection under the existing Wildlife protection Acts across nations. The Wildlife Protection wing should have a clear power and duty to extend protection to any species on a precautionary basis if it faces a significant conservation risk.

Effective prevention requires law enforcement agencies and functionaries in the justice system to collaborate with those in other sectors to address the root causes of Wildlife crimes and avert conflict, violence, and cruelty towards animals. Needless to say, it is necessary to move from punitive measures to evidence-based prevention that reduces levels of violence against wild animals. It also means that sectors that interact with offenders and victims, such as social workers and prosecution authorities, should also be included in implementing prevention programmes.

A list of endangered and scheduled species found in a particular area shall be displayed with photographs and local nomenclature at all public places, viz., railway stations, bus stands, ports, and airports. Regular awareness and sensitization programmes shall be

conducted for all the functionaries in the society, including school children, politicians, transporters, law enforcement agencies, NGOs and the general public.

As far as our country is concerned, the Wildlife Crime Control Bureau evolved over the years from different forms and became fully operational in 2008. With its five regional offices at Delhi, Kolkata, Mumbai, Chennai, and Jabalpur, with three sub-regional offices at Amritsar, Guwahati, and Kochi and five border units under Bus and Exit Point Coordination at Ramanathapuram, Moreh, Nathula, Motihari and Gorakhpur, WCCB is doing a commendable job in all spheres. With different wings at HQ level -Training and Public Education, CITES, Intelligence & Analysis, Crime and Coordination, WL Crime Data Bank and Control Room & Special Operations Units and Cyber-Crime Units supported by one Law Branch, each with well qualified, experienced, competent, and talented personnel, it takes care of all aspects of prevention and control of WL crime. The government needs to provide them with necessary funds to take full advantage of the organization.

It is heartening to note that our Wildlife Crime Control Bureau now has enhanced online wildlife crime patrolling as traffickers have found new ways to connect with potential buyers — encrypted online or undetected transactions. Currently, WCCB is working with online portals and social media platforms to develop a consensus to tackle online illegal wildlife trade. As per consensus, WCCB shared a list of keywords and code words used for trading in wild species, articles and derivatives as detected at various trade portals and social media platforms. Simultaneously, an awareness campaign was run on their web pages to sensitize online users concerning the illegal wildlife trade. According to a study, most of the accused in online wildlife crime in India were first-time offenders, influenced mainly by videos about the illegal wildlife trade to make quick money on social media platforms. This year, around 50 cases of illegal online wildlife trade have been detected by WCCB, mostly trafficking elephant ivory, pangolin scales

and exotic pets. Further, 300 instances of the sale of sea cucumbers on online portals were detected by WCCB.

We know that exploiting even a single species can unbalance a whole ecosystem beyond its resilience limit, with severe consequences. Each living thing in the wild plays a specific role in the web of ecosystem interactions. When many animals are taken from nature regularly, they stop doing their jobs, whether they are predators, prey, pollinators, seed dispersers or seed predators. If too many of a single bird species are removed from a particular location, for example, local insect populations could explode, possibly even becoming human pests. And it's not just animals that are affected: if a tree species depends on this bird to disperse its seeds, it will have reduced dispersal capacity. Therefore, all the species in the area that rely on this tree will end up suffering. In extreme cases, fewer trees and reduced ecosystem regeneration could even mean the region might experience soil erosion. The effects can be very far-reaching.

When wild animals break the law of the land by taking the life of a human being accidentally, or fatalities result from wildlife-related causes, a death sentence .. to be hunted down without a trial is unjustified. Though most of us, including politicians, legislators, lawmakers and enforcing agencies, live in blissful ignorance, we have just to give them the share of their own space – **wild**.

The preservation of wildlife is crucial for maintaining ecological balance. Hunting wild animals is a welfare and conservation disaster, leading to declines in their populations, genetic erosion in populations, which can reduce resiliency and adaptability, breakdowns in social structure and increases in infanticide. We should pledge to do all we can, to prevent crime against wild animals, especially poaching and secure their habitat against encroachment. We all rely on wildlife for our well-being, economies, and identities. We all have a role to play in preventing wildlife crime – lest ..

..the inevitable.....animals gone, trees gone, humans gone!!

**-Mohd. Thayyab**

## LETTERS TO THE EDITOR

### Why IFS belongs to Indian Forest Service?

**- Hemanth Kumar, IFS**

*Dy. Director General Forests (Central), Chennai*

*Dear Sir,*

Until the middle of the 19<sup>th</sup> Century, Indian Forests were subjected to a “Fierce onslaught” by Britishers for expanding their Colonial Rule around the world and in extending their supremacy all over India.

Indian teak, which turned out to be the most durable and most sought after for shipbuilding, was used extensively for the Royal Navy in the Anglo-French wars of the early nineteenth century, and by merchant ships in the later period of maritime expansion. The teak forests of the Western Ghats were devastated, as much of Western Europe had been deforested by the sixteenth century.

The introduction of Railways was a turning point in the history of Indian forestry when the railway network was introduced, in the last decades of the nineteenth century. This was in response to meeting the needs of colonial trade after the mutiny and enabling the export and import of primary commodities and finished goods. In the fifty years between 1860 and 1910, railway tracks increased from 1349 km to 51,658 km. The expansion of the railway network in India was a costly proposition as wooden sleepers had to be imported from Norway.

For managing the constant supply of timber to the Crown, the forests were manned by men drawn from the Civil Services and the Army. Col Watson was the first Conservator of Forests appointed in the year 1806 by the British, in Bombay, the post was subsequently abolished in 1826. The first regular conservator of forests was Leghorn, a medical officer, appointed in 1856 in the Madras Presidency,

There was wanton destruction of forests, especially during the early years of railway expansion and this led to an unprecedented assault on the more accessible forests just to meet the demands of railway sleepers. No provision was exercised over the felling operations and great chunks of forests were uselessly felled whose logs could not be utilized. The worst hit areas were the sub-Himalayan forests of Garhwal and Kumaon where thousands of trees were not spared even to desolation. It was in this situation, that the colonial authorities were finally awakened to the fact that India's forests were not inexhaustible.

Forest administration, which had so far suffered a “melancholy failure”, was now accorded a subject of administrative importance. So, a series of thinking went on for conserving the exhaustible resources. In this direction, a ‘Charter of Indian Forests’ was issued by Lord Dalhousie in 1855 outlining the objectives and principles of forest conservancy. It was based on the report of McLelland, then Superintendent of Forests, Burma.

The Governor General, Lord Dalhousie, while utilizing the early attempts at forest conservation in 1862, observed, “The subject of forest conservancy is an important administrative question” and The British decided to adopt the German model of scientific and systematized forestry. The ascendancy of German forest science was a consequence of the quantitative methods developed there to estimate growing stock and yield - from a simplistic area-based approach to a complex but more reliable yield-based system that assessed the volume and weight of trees of different ages, growth patterns, soil, and moisture conditions and provided fairly accurate yield tables. This thinking process led to the Creation of the Forest Department in 1864 the introduction of the Indian Forest Act, of 1865, and the First Forest Policy of 1894.

A German Botanist Dr Brandis was appointed as the first Inspector-General of Forests in 1864. Regarding

of selection of Forest officers, he opined that "Attention should particularly be paid to scientific requirements, Forest Survey and construct forest roads. Fundamental principles of forest management of other countries can be adopted to India, though the climate and vegetation are different". Dr Brandis issued instructions for the selection of probationers in 1866 and he proceeded to make arrangements with Monsieur Laydekar, Directeur-General des Forests in France, and Forest Director Burckhardt in Germany, for conducting the courses.

In 1867, five candidates including an Indian, Framjee Rustumiee Desai, son of a Bombay merchant, were selected to undergo the training in France. As it was considered necessary to train some officers in Germany also, two more candidates were sent to Hanover for training under Forest Director Burckhardt. The period of training suggested by Brandis was two-and-a-half years.

The outbreak of war between France and Prussia brought to an abrupt close the probationers' training in France, as the Nancy School was closed down the probationers were transferred to Scotland where then training was continued at the University of St Andrews under the supervision of Dr. Cleghorn. The six probationers who were selected for training in January 1871 were all sent to Germany. Training in Germany continued only up to 1875. For the next decade, probationers for the Indian Forest Service were trained at Nancy only. All 95 officers were trained between 1867 and 1886 and trained in the Continent of Europe.

For the period 1885 to 1905, Forest College at Coopers' Hill, London trained 173 probationers. After the closure of Forest College at Cooper's Hill, probationers were sent to the Universities at Oxford, Cambridge, or Edinburgh.

In 1911, the post of Director of Indian Forest Studies was created and A M Caccia was appointed to the post. His duties were to maintain general supervision over the studies of the probationers of the Indian Forest Service at the three Universities. "Aitchison Commission" headed by Sir Charles Umpherston Aitchison, came up with a scheme for fulfilling the claims of Indians to higher and more extensive employment in public service and recommended that- civil services must have a three-tier system-Imperial, provincial and subordinate civil services. Intake of Indians also must be increased.

Based on the recommendations of "The Aitchison Commission" (1913-14) and Lee Commission (1923-24) training for probationers of the Indian Forest Service was started at Dehradun from 1st November 1926 onwards. The commission recommended for selection of 25% of officers from Europe and 75% from India and as per its recommendations apart from Indian Forest Service, Provincial Forest Service, and Subordinate executive services came into existence.

Thus from 1867 to 1926 a total of 566 Indian Forest Service Probationers were trained outside India (25 Indian Forest Service Probationers were trained in Germany, 72 at Nancy, France, 173 at Coopers Hill (France), 203 at Oxford University, 55 at Cambridge University and 38 at Edinburgh University).

### **The motto of the Indian Forest Service:**

**"Mens Sana In Corpore Sano"** meaning Sound Mind in a Sound Body. The phrase came from Satire X of the Roman poet Juvenal, it is the first in a list of what is desirable in life. The translation of the poem reads like this:

"It is to be prayed that the mind is sound in a sound body.

Ask for a brave soul that lacks the fear of death,  
which places the length of life last among nature's blessings,  
which is able to bear whatever kind of sufferings,  
does not know anger, lusts for nothing and

believes the hardships and savage labors of Hercules better than the satisfactions, feasts, and feather bed of an Eastern King.

I will reveal what you are able to give yourself."

For certain, the one footpath of a tranquil life lies through virtue.

The glorious tradition of producing excellent IFS officers for manning the Indian Forests is still continuing.

### **Origin and evolution of Indian Foreign Service:**

If we look into the series of events that have shaped a department that was established with a name, Indian Foreign Department (IFD), and how it finally became the Indian Foreign Service (IFS) between 1783 to 1946.

It all started on September 13, 1783, when the East India Company's Board of Directors passed a resolution at Fort William, Calcutta to form a department to conduct "secret and political business". Warren Hastings was the Governor-General of India at that time. The department was named the Indian Foreign Department and it was engaged in the expansion of diplomatic representation to safeguard British interests.

Under Governor-General Ellenborough in 1843, administrative reforms were carried out in which the Government Secretariat was divided into four departments namely, Foreign, Home, Finance, and Military. The Foreign Department Secretary's job was to engage in "all correspondence belonging to the external and internal diplomatic relations of the government". It must be noted that there was a distinction maintained by the then government between 'foreign' and 'political' powers. Political referred to Asiatic powers including the princely states of India, and foreign referred to all European powers.

After the Government of India Act, 1935, a separate External Affairs Department was set up which was headed directly by the Governor-General. The idea of the establishment of a separate department exclusively for external affairs first finds mention in a note written by Lieutenant-General T J Hutton who was the Secretary of the Planning and Development Department\*. In response to this note, the then Foreign Secretary Sir Olaf Caroe drafted a note in which he wrote extensively on the scope, composition, and functions of the proposed service. Finally, in September 1946, the Government of India created the Indian Foreign Service for India's diplomatic, commercial, and consular representation overseas.

In 1947, in a free India, the new Ministry of External Affairs and Commonwealth Relations was set up. Recruitment to this service was through the UPSC exam and the first batch of officers was recruited in 1948.

This shows that Indian Forest Service is one of the oldest services in India and was started in the year 1864 after the creation of Indian Civil Service by Lord Cornwallis in 1772. Whereas the Indian Foreign Service is a relatively new service, and its officers mostly work outside India and can't claim to have abbreviations IFS, as these abbreviations were under use by the officers of the Indian Forest Service since 1861.

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### **On Vamapremi Digital Issue:**

**P. Visweswaraiah, Retd DFO, Tirupati.**

Dear Sir,

Sending Vanapremi as a digital copy may be economical. But we feel like reading a hard copy. Generally, we relish to read magazine article by article 3,4 times in a month, even during journeys. If it is a digital copy, it becomes one of those like YouTube, WhatsApp, Google etc. Vanapremi is one of several magazines published in the state/ country. The circulation being very limited, the system may be continued.

**All the best Thayyab ji.**

## Eco Sensitive Zones Around Protected Areas

**B.K. Singh, IFS (Retd.)**



The integrity of a Protected Area had remained compromised without favourable land use activities in areas beyond its periphery. In order to safeguard high biodiversity rich areas i.e. Wildlife Sanctuaries, National Parks and Tiger Reserves and strengthen the efforts of conservation, the activities in areas inside wide annular strip all round is needed to be regulated. I am giving the background how Eco Sensitive Zones have evolved for more than two decades now, and what actual changes it has brought in on the ground.

In 21<sup>st</sup> meeting of the Indian Board for Wildlife held on 21-01-2002 a "Wildlife Conservation Strategy 2002" was adopted, and it was resolved that lands falling within 10 Km of the boundaries of National Parks and Sanctuaries should be notified as eco fragile zones under section 3(V) of the Environment (Protection) Act 1986 and rule 5 sub rule (VIII) and (X) of Environment (Protection) rules. National Wildlife Action Plan 2002-2016 indicated that areas, outside protected area network, are often vital ecological corridor links and must be protected to prevent isolation of fragments of biodiversity, which is likely to be threatened in the long run. This decision of Indian Board for Wildlife for declaring areas up to 10 Kms from the boundaries of Sanctuaries and National Parks as eco fragile zone did not go well with the states, as many developmental works were adversely affected. National Board for Wildlife in its second meeting held on 17<sup>th</sup> March 2005 modified the earlier decision and directed that delineation of eco-sensitive zones would have to be site specific and would relate to regulation of specific activities rather than complete prohibition of certain activities.

Challenging this, public interest litigation was filed in the Honorable Supreme Court of India and on 4<sup>th</sup> December 2006, court directed Ministry of Environment

and Forest, Govt. of India, giving final opportunities to states / Union territories, to make proposals for eco-sensitive zone notifications around Protected Areas, within four weeks. In view of the 17<sup>th</sup> March 2005 decision of National Board for wildlife, Ministry of Environment and Forests, Govt. of India vide No 1-/2007 WI-1 dated: 9<sup>th</sup> December 2011 circulated a guidelines "GUIDELINES FOR DECLARING OF ECO-SENSITIVE ZONES AROUND NATIONAL PARKS AND WILDLIFE SANCTUARIES" identifying activities such as commercial mining, felling of trees, setting of sawmills, setting of industries causing pollution, establishing hotels and resorts, Commercial use of firewood, drastic change of agriculture systems, commercial use of natural water resources, including ground water harvesting, establishing major hydro electric projects, erection of electrical cables, ongoing agriculture and horticulture practices by local communities, rain water harvesting, fencing of premises like hotels, resorts etc. Organic farming, use of polythene bags by shopkeepers, use of renewable energy sources, widening of roads, movement of vehicular traffic in night, introduction of hazardous substances, tourism activities like overflying national parks/ Sanctuaries by aircraft and hot air balloons, protection of hill tops and riverbanks, discharge of natural water bodies or terrestrial areas, air and vehicular pollution, sign boards and hoardings and adaptation of green technologies.

The said guidelines suggested states to come up with protected area wise proposal, duly allowing some of the above-mentioned activities and regulating / prohibiting some others. Generic information to be incorporated in the proposals was also listed in Annexure – 2 of the guidelines. After these guidelines were received, Karnataka Forest Department held a public consultation and finalized the draft eco sensitive zone notification for Bandipur National Park. The said notification was sent

to Ministry of Environment and Forests, Govt. of India through State Govt. of Karnataka. Govt. of India issued the notifications inviting objections within specified time of one month. After settling the objections, the final notification has also been issued. Following this some more proposals in respect of Sanctuaries and National Parks were sent to Govt. of India, which remained pending for a long time quoting different reasons. This was for the first time ESZ was notified in Karnataka. I was Chief Wildlife of the state in that period, but the man who worked it out tirelessly was B J Hosmath, the then Field Director Bandipur Tiger Reserve.

Subsequent to this Government of Karnataka finalized several draft notifications of ESZ after public consultation and moved Government of India for Eco-sensitive Zone notifications of remaining protected areas. The proposals were tossed back and forth between Forest Department, State Government and Central Government. The politicians at every level started bargaining for the width of the annular strip around Protected Areas (PAs). Original move of maintaining 10 km strip has come down to as low as 0 to 1 km. Despite a clear message from Union Environment and Forest Ministry that until ESZ is notified around PAs, 10 km should continue to be deemed the strip for regulating activities, many proposals are still pending with either Central Government or State Government. In Karnataka ESZ so far has been notified in 25 PAs, out of a total of 35 in the state. And in all notified cases generally a width of 1 km is kept.

Important Tiger Reserves like Kali, Nagarhole and Bhadra are also so far excluded from having a legitimate ESZ, of course deemed ESZ of 10 km strip would apply in these cases and all other cases where notification is not final. Politicians in Uttara Kannada district earlier argued for zero width (strip), but when it was not accepted, they have started arguing for 100 meters. In other words, they do not want to regulate any activity beyond 100 meters from the boundary of the PA.

Karnataka Government has taken a decision to move proposal for 1 km strip ESZ in all PAs. Such decisions

are not based on scientific principles of requirement of the site for strengthening conservation of biodiversity. These are political decisions and have potential to expose wildlife and its habitat for plundering.

As many as six PAs namely Cauvery, Brahmgiri, Pushpgiri Talcauvery etc got ESZ notified when B J Hosmath was Chief Wildlife Warden Karnataka. One km strip is maintained in all these six cases. However, Hosmath could not succeed in many more cases, where political masters insisted for 0-to-100-meter strip width.

Approximately 400 sq km Saravathi WLS also got ESZ notified to a width of 1 km, when B J Hosmath was Chief Wildlife Warden of the state. The sanctuary has later been expanded to 950 Sq Km (approximately) and another ESZ notification became necessary. However, a 200 MW pumped storage hydroelectric project has been moved by the state in the Sanctuary. The project proposes to sacrifice nearly 200 ha wonderful evergreen forests. These are one of the best forests to provide ecological services and have highest carbon sequestration potential necessary to mitigate the adverse impact of climate change. As there are vested interest groups wanting to develop the project, the ESZ of expanded Saravathi sanctuary has been held up. Politicians should realize if 1 km wide ESZ is not notified, the deemed ESZ of 10 km would apply and development projects up to 10 km from the boundary of the PA would be needed to be regulated as per the directive of Supreme Court of India and guidelines issued by Ministry of Environment and Forests & Climate Change, Government of India.

Office Memorandum circulated by Ministry of Environment, Forests and Climate Change vide F.No 1-27/2014-WL dated 25<sup>th</sup> September 2014 should have been borne in mind and apart from activities to be regulated/ prohibited, the proposal should also contain the mechanism for enforcement of regulatory decisions. The proposal should also include executive powers, if any required to be conferred to Forest administration

for enforcement of regulations and for booking cases for violation of the provisions of notifications.

### **Environment Clearance of Projects:**

Eco Sensitive Zones around National Parks and Sanctuaries, Once delineated would determine whether a particular project can be permitted, regulated or prohibited. Project proponent / user agencies would need prior clearance from Standing Committee of the National Board for Wildlife before getting environment clearance for the project. Thus, if any project is proposed in eco-sensitive zone (ESZ) around National Parks and Sanctuaries, or within 10 km from the periphery of such National Parks and sanctuaries where ESZ is not notified, the case would be processed by Impact Assessment division of Ministry of Environment, Forests and Climate Change. Office Memorandum of the Ministry vide F.No. J-11013/41/2006-IA-II (I) (part) dated 20<sup>th</sup> August 2014 has introduced some changes in the procedure and provides a form in its Annexure to be mandatorily filled by Chief Wildlife Warden of the state. Thus, all authorities moving a project located in eco sensitive zone or within 10 km from the National Parks and Sanctuaries, where ESZ is not notified, would refer the file to Chief Wildlife Warden, who would conduct appropriate enquiry and send its recommendation to the ministry in the form available at the Annexure to the above-mentioned OM of the Ministry.

### **Impact of ESZ notification and shrinking Protected Areas:**

Although ESZ around several PAs have been notified across the country, but forest officers are not empowered to take appropriate actions to regulate the activities. Resorts on the fringes of the PAs have threatened the integrity of the corridors for the movement of wild animals like elephants and tigers. The conservation of threatened biodiversity is endangered. A number of resorts have come up in private areas that are part of ESZ/ deemed ESZ of Bandipur and Nagarhole National

Parks, and forest officers have remained as silent spectators. Even Deputy Commissioners have been moved to revoke the land use change, but it has not produced any tangible result.

Many PAs (WLS and NP) have been managed by skeleton staff for a period as long as two decades. In several cases the management was ineffective, and the wildlife and forests have been plundered. Nearly a year ago I had an occasion to visit Pakhal sanctuary of Telangana for management effectiveness evaluation on behalf of Wildlife Institute of India. It used to be approximately 800 sq km sanctuary and at present one third of it is under encroachment. I learnt that until Telangana reorganized its Forest Department, the Sanctuary was managed by DFO Wildlife located at Warangal. To protect the area, DFO WL Warangal had staff strength less than one dozen. After reorganization it is part of Mamdabad territorial division, and the present management has been putting efforts to remove encroachments. However, the management is successful only in bits and pieces. The implementation of Forest Rights Act, 2006 and political pressures in support of encroachers are the main obstructions for removal of encroachment.

ESZ notification in cases like Pakhal sanctuary would be futile exercise. When we cannot remove encroachments from the Sanctuary, how can we regulate activities beyond the boundary of the sanctuary? Forest Rights Act, 2006 is not only recognition of individual and community forest rights but it also casts duty on the members of the community to manage the area sustainably. Destroying the forest resources would lead to degradation and destruction of habitat as well as wild animals. The ecological services and carbon storage potential of the forests should be recognized, and State Forest Departments should strive for restoring the areas. Encroachments in Sanctuaries and National Parks must be evicted with iron hands.

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## **Effectiveness of Wildlife Laws in Forest Protection and Their Relevance in The Southern Dry Peninsular Region**

**Dipak Sarmah, IFS (Retd.)**

Trees and animals have been objects of reverence in India since ancient times. However, protection of forest and wildlife has been a challenging task, more so in the recent two hundred years. Codified laws for the protection of forest were formulated in the latter half of the nineteenth century, whereas the wildlife laws of a comprehensive nature were formulated in the latter part of the twentieth century, although a few wildlife or rather game laws had been framed earlier. The need for formulation of these laws arose primarily to protect forest and wildlife from exhaustion or extinction, as both these natural assets were under severe stress due to increasing human population. Shrinkage of forest due to increasing human population has been a universal phenomenon, but the impact is more pronounced in the Indian subcontinent where the rate of increase in population has been one of the highest, and for augmenting food production and for providing settlements, more forests have had to be sacrificed. Although the forest laws in India were framed about a hundred years earlier to the wildlife laws, the latter, i.e., the wildlife laws in particular have proved to be more effective in protecting the forests in addition to protecting the wildlife. There are a number of reasons for this:

The wildlife laws were formulated at a time when certain important wild animals such as the tiger were already in the verge of extinction. When the Wildlife (Protection) Act was enacted in 1972 and the enactment was soon followed by the launching of the flagship program, 'Project Tiger', in 1973, a very clear message was conveyed to the whole country about the importance and urgency of saving the Royal Bengal Tiger, one of our proudest possessions, for the posterity. Similar programs to protect other animals such as the rhinoceros, elephant, etc. have also caught

the imaginations of the general public. The importance given by the governments in earmarking certain forest areas exclusively for wildlife conservation has also made tremendous impact in protecting wildlife. The primacy given to wildlife conservation at the highest level in the country, best exemplified by the formation of the Indian Board of Wildlife (IBWL) / National Board of Wildlife (NBWL) under the direct oversight of the Prime Minister, was a very significant step that conveyed a very clear message to the entire bureaucracy as well as the general public. Voluntary organizations and media have also been highly spirited and visible in giving wider publicity to matters related to wildlife conservation.

As regards forest areas, they were notified as per the provisions of the Forest Acts such as the Indian Forest Act, 1865/1878/1927, the Madras Forest Act, 1882, the Mysore Forest Regulation, 1900, the Hyderabad Forest Act, 1899/1916/1945, etc. Reserving forest areas and protecting them through the various provisions of the Forest Acts were generally not welcome by the people who for ages had been enjoying almost unrestricted and virtually free benefits from these forests. Evidently, restrictions imposed on people from withdrawing whatever they pleased from the forests became unpopular. As we are all aware, the progress of human civilization from the nomadic phase to the phase of settled agriculture came about with the sacrifice of huge chunks of forest land. Since clearance of forest for agriculture or for settlement is an ancient practice, and as the Acts and Rules framed for protecting forest from various infringements came much later, there has always been a conflict between the rule of law and people's perception of forest-clearance for subsistence living, often perceived as a birth-right. In view of this inherent conflict, attempt to evict forest encroachment by the authority is stiffly resisted by the

encroachers who generally have the sympathy, support and backing from various sections of the society. The general perception is that encroachment of forest is done by the poorest of the poor out of dire necessity for cultivation to make a living or for the purpose of dwelling. In the past, people were encouraged to open up forest areas so that more and more land could be brought under the plough, as such an activity would not only increase food production but would also shore up revenue collection. The first forest policy of the country, formulated in 1894, had a definite objective of serving agricultural interests and provided for liberal diversion of forest land whenever it was required for agriculture. This policy subordinated forest conservation to the promotion of agriculture. Forests were thus assigned a role subservient to agriculture. In other words, the 1894 forest policy did not recognize that forest had intrinsic right to land.

Clearing forest for extending agriculture which was considered very normal in the earlier days became an illegal act after the imposition of the Forest Acts and Rules. However, for the reasons mentioned above, these remained soft for a very long time. Although forest encroachment is an offence in the eyes of law, it was not treated on par with other criminal offences such as theft or robbery. The governments were also quite liberal in regularizing forest encroachments and this had naturally encouraged and emboldened the people to encroach more forest lands with the fond hope that these too would be regularized sometime in the future. Besides, the practice of grant or release of forest land for agricultural purpose which was quite common and acceptable during the pre-colonial and the colonial eras was continued even after the Independence, and thousands of hectares of forest land were released under the 'Grow More Food' program. The practice of granting non-forest government land for cultivation is in vogue even today in most of the states. Encroachments done in such lands are also regularized liberally. The approach of the governments towards diversion of forest land for non-forest purposes was quite liberal in the past although the rate of diversion had slowed down considerably after the promulgation of the Forest

(Conservation) Act in 1980. (The rules for diversion of wildlife areas for non-forest purposes have been made comparatively very strict.) The Forest Rights Act of 2006 has also encouraged fragmentation and honeycombing of forest for non-forest activities, besides encouraging many forest encroachers (mostly belonging to the category of 'other forest dwellers') to stay put in the forest under the guise of traditional forest dwellers.

The undercurrent of passive support for forest encroachment is so strong that the forest laws, even after these were backed by the Forest (Conservation) Act of 1980 and the National Forest Policy of 1988, and despite judicial interventions from the highest courts, have not been effective in bringing all the illegal cases of encroachment to their logical end, and the forest departments across the country continue to grapple with thousands of such cases. The predicament of the forest departments is further compounded by the fact that many people, who as per the forest laws are confirmed as illegal occupants, have been in a roundabout manner able to claim legitimacy over the encroached forest lands under the provisions of the Forest Rights Act, 2006. And there is groundswell of support in the society in favor of such claims!

People's apathy in complying with forest laws, coupled with the administration's indifference in enforcing them, was not restricted to forest encroachment cases alone; it was manifest in other realms of forest management also. For example, many notified forests were so much overburdened with privileges and concessions that the forest laws meant for protecting them had virtually become redundant. Similarly, cattle trespass laws were given a miss after the Independence permitting free grazing in forest. This has led to large-scale degradation of our forests, especially in the vicinity of human habitations. During the colonial era, strict regulations were imposed restricting cattle entry into forest by charging high grazing fee. As a matter of fact, during that period, in certain forest areas revenue from grazing was higher than that from timber.

By and large, people's awareness and concern about wildlife protection have been much more visible and

palpable as compared to their awareness and concern about forest protection. They are fully aware that wild animals cannot survive even for a single day without forest. This has resulted in their being reasonably convinced and more agreeable to earmarking of certain forest areas for the survival and growth of the wild animals. They usually look upon the protected areas such as national parks and wildlife sanctuaries as more sacrosanct than normal forest areas. The realization that even human beings cannot survive for a long time without forest is yet to make an impression on the human mind. It is only in recent years that people have started appreciating forests' intangible environmental benefits, which are quite different from the material benefits that they have been drawing from the forests for ages. With the specter of climate-change-induced recurring droughts, severe shortage of drinking water, etc. looming large, the need for having adequate forest and tree cover on all available vacant lands has been attracting the attention of the people. People have been virtually pushed to the wall to realize the basic function of forest in climate amelioration as well as in regulating stream flow. This realization, though belated, augurs well for the future of mankind, as genuine concern for forest protection will emanate from such a realization.

In view of what has been narrated above, forest areas have been very vulnerable to human intervention as compared to the wildlife areas. As a matter of fact, in some of the states in the country, the best forests are now restricted only within the protected areas, the remaining forests having been degraded, fragmented, decimated, or reduced to a few isolated pockets, away from human habitations.

In the map of natural vegetation of India, the southern peninsular region appears more or less as an expansive, barren and dreary-looking patch dotted here and there with a few tiny green specks, and flanked on the west by a fairly broad, almost continuous and bold green strip, and on the east by a disjointed, somewhat patchy, light green strip. The green strips are the forested regions of the Western Ghats and the Eastern Ghats, respectively. However, the vast open

landscape lying in between the Ghats was not always bereft of tree growth as it is now. In the distant past, say about 500-600 years ago, this patch was almost entirely green, being covered with forests which formed a continuous swathe connecting the Ghat forests. Centuries of anthropogenic pressure, most notably due to expansion of agriculture and settlements, resulted in fragmentation and contraction of these forests which are now restricted in small, scattered pockets distributed sporadically over a vast region comprising the driest portions of the states of Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu, and Telangana. This arid region (southern dry peninsular region) being situated on the leeward side of both the Ghats is not well-favoured either by the south-west monsoon or by the north-east monsoon and, as a result, receives low to very low average annual rainfall in the range from 900 mm to 500 mm. The original climax vegetation occurring in this region comprised Southern Tropical Dry Deciduous forests belonging to the types of Southern dry mixed deciduous forest (5A/C3), Dry teak-bearing forest (5A/C1) and Dry red-sanders bearing forest (5A/C2), along with patches of Southern Tropical Thorn Forest (6A/C1) in the most refractory sites. However, due to large-scale decimation of the forests followed by centuries of use, overuse and abuse of the left-over forests, the present condition of the residual forests is pathetic to say the least: while there are a few pockets of pristine dry deciduous forest in relatively undisturbed locations, most of the existing forests are in various stages of degradation represented by the types such as dry deciduous scrub (5A/DS1), dry savanna (5A/DS2), thorn scrub (6A/DS1), euphorbia scrub (5A/DS3, 6A/DS3), and dry grassland (5A/DS4).

It may also be pointed out that, although the average recorded forest area (RFA) of the states of Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu and Telangana varies from 20 to 25 per cent of the geographical area (GA) of the respective state, the distribution of the forests within each state is highly skewed: while the relatively better forests occur in a few districts located in one or two favoured belts such as the coastal areas, river basins, and Ghat or hill areas

with the RFA constituting 40 to 50 per cent or even more of the GA, the districts located in the above-mentioned southern dry peninsular region harbors abysmally small extents of forest, the RFA in these districts being well below 10 per cent of the GA. Another peculiarity of the districts in the region is the presence of extensive open agricultural lands which constitute about 60-80 per cent of the GA, this percentage being as high as 90 in some districts.

The above figures clearly indicate that the areas earmarked for sustaining forest growth in the southern dry peninsular region are awfully inadequate. Going by the large-scale expansion of agriculture that has taken place, it is apparent that adequate importance was not given in the past for forest conservation in the region. Although the Forest Policy of 1952 had discarded the earlier held view that forest has no intrinsic right to land, the same view was continued even after 1952 and expansion of agriculture by any means was encouraged. Increase in food production was sought to be achieved more by expanding agricultural lands rather than by intensifying and improving agricultural operations. In a bid to expand agriculture, almost all lands were considered fit for cultivation and were brought under the plough. The pace of agricultural expansion was so intense that private lands harboring tree growth around cultivated lands meant for the benefit of agriculture were also cleared; this was followed by clearance of similar lands with the Government. As a result, the forests in the region receded to the most inhospitable tracts not considered fit for cultivation. Evidently, forest had to contend with the poorest of the available lands in adverse climatic conditions. On top of this, these left-over forests had to bear the brunt of excessive biotic interferences due to removal of fuel wood, small timber, NTFP, overgrazing, and recurring fires. Besides, there are cases of encroachment of forest land by land-hungry farmers.

Here, it may be mentioned that the marginal lands that were sacrificed for extension of agriculture had harbored naturally growing tree species appropriate to the terrain; such lands were generally not suitable for

food crop production. Wanton and arbitrary expansion of agriculture resulted in the formation of vast expanses of open crop lands without adequate forest or tree-clad areas in the vicinity. Such a situation does not augur well for the general health of the agricultural lands, especially in an arid region where rains are either deficient or erratic. Such agricultural lands are extremely vulnerable to desertification, the most significant factors leading to such a state of affairs being water erosion, wind erosion, and vegetation degradation. As a matter of fact, the specter of desertification is already apparent in parts of the southern dry peninsular region where recurring droughts are more common than exception. The available water capacity (AWC) of a substantial portion of the agricultural lands in the region is very low and such lands are incapable of sustaining long duration crops and are more ideal for woody perennials. As a matter of fact, dry-land horticulture and agroforestry are more relevant in the areas from where most of the natural vegetation that once existed in the periphery of the cultivated lands had been removed, thereby depriving the cultivated lands of the beneficial effects of trees that these lands were favoured with for ages in the past. By reintroducing and integrating trees into the agricultural system, agroforestry and dry-land horticulture will restore these benefits to the agricultural lands, besides adding the much-needed greenery to the agrarian landscape.

As regards the residual forests that are still in existence in the southern dry peninsular region, although now restricted in patches dispersed over an almost limitless landscape, these forests have tremendous impact on the surrounding environment in terms of biodiversity, soil and water conservation, climate moderation, medicinal properties, protection of agricultural lands, etc. More importantly, these are the last vestiges of natural vegetation in an expansive, open and parched region where the ominous signs of desertification are already perceptible. For the overall protection and amelioration of the surrounding environment of the region, conservation, and development of these forests, by any means and before it is too late, is of utmost

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## **Good Practices for Zoo Management- Experience in Nehru Zoological Park, Hyderabad**

**P. Mallikharjuna Rao, IFS, (Retd.)**

Zoo parks contribute to wildlife conservation by way of environment education, housing endangered animals, captive breeding, rescue of wild animals and animal research. I was associated in management of Zoos from 2010 to 2014 as Director of Zoological Parks and Member Secretary, Zoo Authority of Andhra Pradesh (ZAAP). I made a request for this posting as it provides opportunity to oversee the management of 3 important Zoological Parks of the state (Hyderabad, Tirupati and Vishakhapatnam) and to support rescue and rehabilitation of wild animals for the entire state. This assignment had a reasonable degree of functional independence and tremendous potential to do innovative and creative work. It was a memorable and satisfying experience to take up this job. The heads (Curators) of the three Zoos and their staff did remarkable work and showed excellent results in all facets of Zoo Management. Thanks to the Chairmen of ZAAP (Forest Ministers) and Chief Wildlife wardens of that time, who encouraged and supported in launching and execution of several new initiatives in the three zoos. Nehru Zoological Park (NZP) is the oldest and the most popular among them. This zoo (established in 1963) is one of the most naturalistic zoos in the country spreading in about 380 acres of land. With sincere and dedicated efforts of the past heads and their teams, the zoo became one of the best zoos in the country. This zoo had the distinction of starting the first safari park (1974), first nocturnal animal house (1982) and first open butterfly park (1998) in the country.

It was an exhilarating experience to see love and affection showered by every zoo functionary I came across during my recent trip to the Zoo on 11<sup>th</sup> September 2022, after participating in martyrs' day celebrations there. These functionaries are the real front line staff representing animal keeping, gardening, housekeeping, security, supporting services and

animal health care sections. They reminded me about important initiatives of that time. Together with this input, the information collected from zoo office revealed that, the period (2010-2014) witnessed significant transformation in various aspects - improvement in animal collection (addition of 38 new species), animal exchange with five foreign zoos, construction of 10 new enclosures, renovation and enrichment of animal enclosures, immersion land scape development, refurbishing of old structures, improvement of visitor amenities, expansion of conservation education programmes, strengthening of captive breeding programmes, full coverage of paved pathway, parking space creation, overall ambience improvement etc., which lead to creating a new image to the zoo. The upper ceiling of annual visitation for the previous 10 years, which was oscillating between 1.6 to 1.8 million, could be raised gradually each year with final mark of 3 million for 2013-14. The heads and curators of the zoo, their team members and the zoo functionaries are primarily responsible for such a good performance.

It would be useful to discuss how our team did in order to bring in the above change instead of elaborating about all the activities what we did. This article is therefore intended to share briefly about some practices and simple management strategies adopted during the period.

### **Participatory management and game changing initiatives:**

When their good work was recognised, suggestions were acted upon and genuine grievances were addressed, the zoo functionaries were proved to be a great asset and strength for management and development of zoo. During the first month of my joining, I noticed that there had been a big problem of traffic jam near main gate as more than 500 vehicles

(4 wheelers) used to be stranded on the main road in weekends. The parking space available at Zoo entrance could not accommodate more than 50 vehicles. During interaction, the Zoo staff gave an idea that the vacant space inside the zoo all along the front wall can accommodate about 1000 vehicles, if a wall is constructed parallel to it. We took this suggestion seriously and the curator acted promptly and got the work completed in record time of less than 2 months period. This not only solved the problem, but also developed an atmosphere of mutual trust and created a sense ownership that built high motivation levels among the staff.

Zoo could become clean and litter free by enlisting the active participation of housekeeping staff. By the time zoo gets opened in the morning, litter and garbage of the previous day used to be seen all over the premises. Housekeeping staff used to remove litter and clean the zoo simultaneously when the visitors were moving and adding fresh litter. Though the staff were working very hard, they could not cope up with the pace of littering by visitors and with the result, the zoo always used to look untidy. Consequent upon interactive sessions held with gardening and housekeeping functionaries, a plan was drawn to bring about a change. Immediately additional dust bins of about 500 numbers were installed. Action was taken that one third of staff on rotation basis would come one hour late to the duty and stay one hour extra in the evening to remove all the litter and do entire cleaning and sweeping of the Zoo after closing hours. This practice made a great difference and Zoo became almost litter free and clean within first 6 months period.

Interactive sessions with functionaries and team visits to each of the animal enclosures and other work spots helped to identify and assess the needs, gaps, deficiencies and facilitated to take up appropriate and timely interventions. Works pertaining to improvement of all the animal houses, enrichment of animal enclosures and improvement of visitor amenities and others were the result of this exercise. On the proposal of zoo maintenance staff (welders, carpenters, electrician, plumber), a workshop (work shed and

equipment) was built for them which made a huge difference in maintenance.

Hyderabad zoo had a plenty of water as it is situated adjoining Mir Alam tank with good potential to improve greenery in the zoo. The initiative of the curator and the team in collecting water to the unused swimming pool and distributing to the entire zoo through sprinklers to all the lawns and gardens of the zoo (within and outside the enclosures) resulted in tremendous improvement in the premises. All the enclosures became green. Lawns of the visitor areas were re-greened and new lawns added. The efforts to plant trees and bamboos adequately to camouflage the enclosures to restrict the viewing area to one-third the length of the enclosure, extensive planting in the visitors area and greening the enclosures to give appearance of natural habitat started providing immersion experience to visitors.

### **Strengthening collaborations with institutions, civil society and people:**

In the last week of December, 2010, Mr Raghuveer, IFS, the then Director, AP Forest Academy brought a few engineering students of Guru Nanak College to discuss on utilising the students for voluntary participation in zoo management. These college students and others were formed into Animal Rescue Protection Force (ARPF) under the stewardship of Mr Nihar and joined in the programme of Zoo corps/ volunteers launched on 26<sup>th</sup> January, 2011. The Zoo Corps played significant role in crowd management, conservation education, animal keeping, rescue operations and various other activities. Zoo friend's forum, an informal body formed with people from different backgrounds having interest in wildlife conservation, helped in successful conduct of activities on various environment related days. Their voluntary services added festivity during golden jubilee celebrations held in October, 2013. Old aquarium got renovated with their inputs in designing the display arrangement and in improving fish collection. A close coordination with various environmental agencies, such as WWF, CEE, BSAP, Friends of Snakes Society etc., many programmes of conservation education, captive breeding etc were strengthened along with other

activities in the zoo. Close coordination with LaCones aided for good progress in conservation breeding and animal research. An initiative of Networking of Sparrow Conservation Teams (NEST) launched on world sparrow day (20-03-2014) strengthened people participation for conservation of sparrows and other birds in a few identified urban localities near the zoo.

### **Responsive management and need based interventions:**

Taking care of the interests and needs of both visitors and employees, while keeping conservation and welfare of the animals as central theme, would have a positive effect on the overall Zoo management. The holistic approach of taking care of the interests and needs of Animals-Visitors- Employees (AVE) with focus on animal conservation, was therefore found to be an appropriate measure.

Based on the visitor's feedback, the zoo had been divided into different sectors and were given suitable names. They were Primate Park, Carnivore corner, Lion junction, Bears bay, Deer land, Reptile row, Turtle tunnel, Parrot world, Jurassic park and Elephant odyssey in order to facilitate easy orientation for the visitors. Foot paths were taken up in different phases covering the entire zoo facilitating comfortable movement of visitors even in rainy season. Safe drinking water supply (Reverse Osmosis) units (6 nos) in different phases was a much needed intervention. Old visitor shelters were renovated and new ones were added. Entrance plaza and cloak room were developed. A bioscope was developed to orient the visitors on entry about the map, animals, facilities, dos and don'ts through a film show. Development of new food court, opening a Zoo shop and introducing cycles were based on the suggestions of the visitors. Introduction of adequate number of battery operated vehicles (about 50 no) in different phases could facilitate imposing ban on vehicle entry into zoo with resultant drastic fall in pollution levels.

On the request of Animal keepers, a small animal keeper room at each of the enclosures/clusters to keep their equipment, uniforms, and other belongings were constructed. This simple facility had shown a

tremendous improvement in commitment, efficiency and quality of their work. Sensing good results, such rooms were constructed at different locations to other zoo functionaries. The existing 20 staff quarters were improved, children park was created and gardens improved in the colony and a new apartment complex (Cheetah block) with staff quarters was added in the premises of zoo. A clinic (Amritha) with required medical equipment, a visiting Doctor and full time nurse facility was provided to take care of primary health care needs of staff and visitors.

Construction of a cold storage room addressed the problems in delay of feed supplies, wastage and interruptions of feed supplies due to unforeseen reasons. Expansion of fodder plot and diversification of crops could enrich the herbivore's nutrition to a desired level. .

### **Importance to Conservation education:**

Talks/interactive sessions were introduced to cover all six working days a week for delivering information to visitors to know more about animals. These sessions were programmed as Tiger talk at Tiger enclosure (Tuesday), Elephant walk near zoo shop (Wednesday), Canine class at wolf enclosure (Thursday), Bird school at Zoo shop (Friday), Crocodile coaching at reptile row (Saturday) and Snakes Show (Sunday). A total makeover of signages and information boards facilitated to improve the information dissemination and environment education. The existing visitor shelters were renovated and new shelters were built to provide not only resting place to the visitors but also educating them on animals through display of information panels on thematic basis. All the national /international days pertaining to environment like Biodiversity, Earth day, Wetlands day, Sparrow day, Tiger day, Elephant etc., were organised with different programmes such as competitions, photo sessions, interactive sessions, cultural programmes. A nature school (prakruti badi) with amphitheatre facility was developed to conduct snake conservation shows and meetings on special days. An insectarium was developed to educate about insects and their role in environment. A bird

conservation park (pakshula parnasala) was developed by planting fruit trees, creating small pond and enriching with nesting facilities to show case the best practices to be adopted for conservation of birds in urban areas. Natural history museum was renovated and upgraded to effectively display information regarding the history and evolution of zoos, history of Hyderabad Zoo and some exhibits pertaining to animal conservation. Aquarium was improved and upgraded to educate about aquatic animals. The unused education van from FDPT, Srisailem was brought and renovated and fitted with necessary audio visual equipment and utilised for outreach education to cover schools and villages in neighbouring districts to create awareness on wildlife conservation.

### **Proactive and responsible governance:**

Full utilisation of the independence and responsibilities accorded/delegated to Member Secretary, ZAAP without shifting responsibility to higher authorities was the key to success. There was hardly any proposal sent to Head Quarters and got approval to take up various works relating to maintenance and improvement of the zoos. When curators were involved in day to management and progress of the zoos, the Director was engaged in providing an enabling environment besides coordinating with various agencies at state and centre level. Coordination with commissioner, GHMC, and Hyderabad was helpful in vacating and shifting of the parking space along the zoo frontage which was a long standing problem. Discussions held with MD, Hyderabad Metro works could solve some drainage issues besides settling some old dues of water charges. Meeting with Principal Finance Secretary to Government resulted in keeping the budget for Diet charges in green channel to facilitate timely releases. Constant follow up with Principal Commissioner, Income Tax resulted in securing the adoption scheme to cover under income tax exemption. About 80 species of animals could be procured for three zoos through animal exchange (including exchange with 5 foreign countries) by following the simplified procedure. Once the animal exchange proposal was agreed in principle by the Chief wildlife warden, further follow-up and

subsequent correspondence with central agencies (Ministry of Animal Husbandry, DG, Foreign Trade, Ministry of Environment, CITIS authority, National Biodiversity Authority, CZA etc., and other zoos) was taken up without routing through Head Office. This had drastically cut down the red tape and gave successful results. But for the support and encouragement to this mode of functioning by the seniors, these initiatives would not have been possible.

### **Contributions - Acknowledgement:**

The support and guidance of the three Chief wild life wardens namely Mr Hitesh Malhotra (Exchange of animals including international exchanges), Sri SV Kumar (arranging sanction of funds from Government and providing guidance to take up zoo improvement works before CoP11) and Sri AV Joseph (Golden Jubilee celebrations) played significant role in zoo improvement. This period saw three curators namely Mr Waheed, Mr Sankaran and Mr Murty under whose supervision all the above mentioned developments took place. Other team members namely Asst Conservator of Forests - Mr Sekhar Reddy, Sri Vasant Mohan and Mr Samuel, Assistant Curators - Mr Ramesh, Mr Krishna Prasad, Mr Momin Ali, Sri Krishna Prasad, Sri Lakshman and Smt Sridevi, their colleagues and entire zoo staff who form the team did excellent work.

The Clean and green initiatives (litter free Zoo, improved greening through introduction of sprinklers, creation of additional parking place and various other works) of Mr Waheed and team, the turnaround works ( new enclosures, 100 percent pavement, renovation of enclosures and structures, food court, bioscope, golden jubilee pylon) of Mr Shankaran and team, environment improvement works (Immersion landscaping, bird conservation park, vermicomposting unit, regulation on vehicles) of Mr Murty and team deserve worth mentioning. The Veterinary team lead by Dr Hakim especially Dr Srinivas's passionate work, support and guidance of veteran Vets namely Dr Naveen kumar, Dr Gaur Ali khan and Dr Dattatreya Rao contributed to good animal health care and successful animal rescue and rehabilitation activities. The emboldening

attitude of Sri Sekhar Reddy in securing a pair of Rhino from Patna Zoo, the proactive nature of Sri Ramesh in taking up challenges pertaining to animal keeping, responsive working of Sri Krishna Prasad in greening improvement, energetic working of Mr Momin Ali in maintaining tight security, enthusiastic functioning of Dr Srinivas Reddy in supporting to secure animals from foreign countries, the untiring work of Sri Nagender & Sri Ravi kumar in assisting animal keeping section,

the cool tempered nature of Mr Hanief in coordinating media and assisting in various education programmes are part of my fond memories' list. There were several sincere, hardworking, enthusiastic and passionate zoo functionaries of animal keeping, gardening, protection/ security, supporting services sections, biologists and zoo office staff behind this transformation process and they deserve a big salute.

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*Every education system in the world is being reformed at the moment, and it's not enough. Reform is no use anymore, because that's simply improving a broken model. What we need... is not evolution, but a revolution in education. This has to be transformed into something else*

**– Sir Ken Robinson.**

Continuation from page No.17

importance. We have seen that the existing forest Acts and Rules have by and large not been effective in protecting these forests which are now in various stages of degradation. Given that the wildlife laws have proved to be more effective in forest protection, one way of restoring and rejuvenating these natural forests will be to include them in the protected area (PA) network to the maximum possible extent. The objective is primarily to protect the remaining biodiversity of flora and fauna existing in these forests. This will automatically help in conservation and development of the natural forests within the protected areas.

Although the principal objective of protecting the remaining dry deciduous, thorn and scrub forests of the southern dry peninsular region is to consolidate and stabilize these forests to prevent their further

degradation or decimation and to facilitate their restoration and rejuvenation, these operations yield multifarious benefits. They provide a sanctuary to the entire plant community comprising trees, shrubs, herbs, climbers, lianas, palms, ferns, orchids, grasses, mosses, etc. inhabiting these forests. The ones in the verge of extinction get an opportunity to bounce back. All the major, minor and minute constituents of a forest ecosystem have definite ecological roles to play, and all of them collectively help the forest ecosystem function effectively and efficiently. These forests also serve as in situ conservation reserves of genetic resources of several plant species, including varieties of medicinal plants, for present and future use by humankind. In short, these forests serve not only as sanctuary for the flora and fauna to thrive and propagate but also as the sanctuary of hope and future.

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## Remembering Dudhwa Beyond the Shadow of Tiger

Mohammad Ahsan, IFS (Retd.)



Dudhwa ( National Park ) is the home of many rare and endangered animals and birds like tiger, swamp deer, Bengal florican, hispid hare etc. etc., but, since the very beginning, even when the area was not declared as national park, it got more firmly tagged with tigers than any other bird or beast. It is true the area, since ages, has been known for tigers and shikar stories woven around it. Declaration of the area as national park in 1977 and later as Tiger Reserve in mid 1980s only stamped and reaffirmed National Park's association with tigers. This association created a strange kind of psyche among visitors, both official and non-official, giving rise to such expectations as visiting Dudhwa meant sighting a tiger within no time.

But here is a catch. Dudhwa is not Ranthambor or Bandhavgarh, the small dry habitats of tiger where you, with some professional efforts from a guide, have better possibilities of 'seeing' a tiger. Dudhwa is a core terai area, of dense sal forests which is never dry or drought- hit, never short of water. Besides, there are vast grasslands with tall grasses, and at certain places good cane brakes where tigers love to hide themselves. And there is plenty of prey too in the shape of five deer species and wild boars that have made Dudhwa their home. Speaking in brief, habitat of a tiger in Dudhwa is much more natural than many other Tiger Reserves of the country; and tigers here with plenty of food, water, and cover, remain 'elusive', enjoying a much more natural life. But the whole thing culminates into disappointment and frustration among the lot of few thousand visitors that visit Dudhwa every year.

Association of Dudhwa with tigers is so strong that most visitors visit Dudhwa with the express desire of 'seeing' a tiger, but majority of visitors remain unhappy over 'not having seen a tiger in two days' stay', and that the staff could 'show' them only a few pugmarks of tigers, even

their being 'really the pugmarks of tiger is doubtful'. Visitors with the aid of staff and guides keep desperately chasing an 'elusive' tiger for most of the time. The frustration of a visitor is understandable. Forget the tiger. Forget the leopard. Even those legendary large herds of swamp deer for which Dudhwa is academically known are also not 'seen'; have, over the years, almost disappeared from the scene, the reasons of which can be discussed in a separate article. However, the visitor is simply disillusioned.

But interestingly no one - the tourism department or even the forest department- ever earnestly tried to dispel a tourist's expectation of 'seeing' a tiger during his short stay of a day or two in Dudhwa. No one ever tries to tell a visitor that in Dudhwa, coming across a tiger is only a matter of chance which does not happen very frequently. Result is, a visitor's precious time is wasted away in this 'tiger chase', a precious time which he, otherwise, would have utilized in confronting a vast theatre of nature that Dudhwa offers to a visitor. Dudhwa is a vast canvas over which nature has painted a colossal collage for everyone to watch and enjoy. Just that you have to stay and stare. This collage is really vast, and one can concentrate on any of its pieces where he has a leaning.

Somehow UP forest depart too could not project Dudhwa as a huge repository of nature's marvels which can be enjoyed endlessly with an open mind and eyes – in other words Dudhwa as a place that is beautiful and serene even beyond the shadow of tigers. And, that there is so much to do in Dudhwa for an ordinary visitor other than chasing an elusive tiger which is more often is not spotted.

At least I was the one who never chased tigers in Dudhwa during my visits, both official and personal, as

I think I had too many other things – and better in many ways - to do in my rendezvous with nature in Dudhwa. You can also do what I did.

Watch Dudhwa round the year, through all the seasons and sub seasons. What you see! Myriad colors, hues, shades, tones, and tinges through all the seasons. Appreciate them all.

Except probably in few months of rains there is always leaf fall in one tree or the other. There is a smaller autumn, as we know it, in October – November. Thereafter lots of trees shed their leaves in the severe cold months of December and January. Then there is a period of yearly regular leaf fall for many trees like semal, sal, garjan etc, from about mid-February to mid-April. In this period of regular leaf fall watching leaves falling from a cluster of trees when a cool breeze blows might be real lifetime experience. Sometimes all those leaves fall so palpably you can't really miss them even if you are not very caring of such 'trivialities'.

When in the first and second week of April all those pale leaves from the tall trees of Sal and garjan fall together in unison in Dudhwa campus, making their way to ground – in slow motion, spinning, dancing on the drumming of light wind, cutting over the slanting sunbeams – the whole thing gives a semblance of falling stars in cluster. Look at this happening in morning time in a leisurely attitude, calmly sitting over a chair. These are magical moments. Sometimes you feel, instead of these leaves, some soft melodious poetry is falling down from heaven. You wish to capture every moment of it through the camera of your soul.

Come the monsoon months. Look at those dark grey clouds hanging over the tree line of Dudhwa's jungle. You don't know wherefrom they have come. And then it starts dripping, in the beginning slowly, softly, then mercilessly as with vengeance. Look and imbibe these incessant spells of rain lashing all those tall trees of the forests that are rocking on the sailing of wind. Sometimes you are so enamored with it you feel the rain must never stop. And listen to that sound of spattering on the glass panes of your windows when

the wind and rain together hark at your lodging place.

Travel on roads of Dudhwa in an early cold morning and look how the sunbeams are sifting through the filigree of tree foliage. The aerospace among the trees is a sorcerer's stage, full of radiance and splendor, where millions of minute dust particles are dancing to the tune of sun and air.

Listen to the music that a train passing through jungle in midnight hours is creating on the iron rail.

Look at the mist rising on the grasslands, the chandars and phantas, in the morning and evening hours of winters. It gives a mystique effect. Look how the landscape appears and disappears with it like a magician makes the things appear and disappear with his stick and hat.

Look at those thickly coiled climbers strangulating the stems and branches of some trees or look at those giant termite mounds – some might be 15-20 feet tall. If you stay and stare you can wonder at them for hours.

Listen to the music of insects which they make in jungle once the night has fallen. Or just listen the silence of night with a clear night sky over where countless stars have woven a translucent sheet, chaadar, to wrap around your living universe with.

And look at that woodpecker who is so doggedly trying to break through the hard shell of a tree; just listen to the sound it is making; or those giant red ants with their nest hanging from some low branch of a tree, a round hollow ball made by folding and sewing a few tree leaves together. The hordes of those red ants look frightening, but they are as innocuous as any other creature, and would not harm you unless you tamper with them.

And sometimes a stray monitor lizard at some bend, crossing over the road, or a wild hare in total confusion forerunning your automobile for many minutes and finally to disappear in some sideways bushes may be a small happening, apparently, but might get pasted on the slate of your mind forever.

Or look at that giant spider web spread over a few bushes, or an army of insects crawling under a dead bark of a fallen tree. Sometimes in the centre of the web is sitting that red eyed giant, the spinner of the web, whom majority of men and women have a tendency to loath. Frankly that 'loathsome' creature is really an interesting fellow, although cruel with your bizarre standards of civilization. That way tiger or any carnivore must be the loathsome creatures.

Ever try to sit over the terrace of some rest house or a guard's chowki under the soft refulgence of a full moon falling over a vast phanta, the grassland. Landscape of savanna grassland with all those scattered leafless trees in a full moon night is charismatic and surreal like a dream. Or walk on some forest road in a night when the moonlight is dripping like a thick heavy wine from the heaven. This moonlight, the chandni, is real intoxicating.

If you ever have leisure, leave behind your automobile, take a slow train that passes through the forest, watch the panorama on both sides, and listen to the clatter on wheel. This clattering is musical. And look at the magic where woodland meets the agriculture fields.

Look at those larks and reedbirds that rise vertically to the sky, or a kite hovering endlessly in the sky over the dry savanna, or a mugger stealthily basking over the sand under the morning sun, and then making an awkward movement towards water after getting disturbed by unwanted presence of human beings; or watch those sunbirds or white eyes or flower peckers flitting from one flower to another in quest of nectar. But the real lifetime experience might come in spotting some crested serpent eagle making to skies with a serpent in its talons, or a fishing eagle with a fish. And you simply sigh out – that is the theatre of the nature. Watch a pied kingfisher hanging in midair, making an accurate careful aim at its prey in the stream below, and then making a smart swift vertical dive to catch it. Every creature in the jungle has a role to play in the scheme of things nature has laid down.

Look at all those leafless semal trees flowering gregariously with all those loud red colored flowers as if a fire has broken out on the horizon. And look at that large kusum tree in the month of February which has taken new soft maroon foliage. The entire tree looks like a mega giant flower.

Look at those leafless trees in the basin of small rivers like Suheli that have gone dry due to yearly floods. Marvel at their shape. This dense stand of dry trees, if you have a keen eye and peculiar aesthetic sense, might be an artist's dream of conceptualization. And every tree looks like a giant driftwood piece.

You might not have been an ornithologist of repute, or not even an average bird watcher. Never mind. Just listen the chirping or tweeting of the birds that are aplenty around you. If you are an early riser in the morning listen to all that 'raucous' noises birds have made for you – a mix of babbling, tweeting, chirping, singing, warbling, shrieking, twitting, trilling, cawing, crackling. It is a beautiful orchestra. Jungle has awakened for you. Birds are simply on their best in morning hours.

And look at the birds in a water body. It might be an experience to watch a big flock of water birds taking a flight in unison, turning, and twisting in the air, and resettling on the water; or a coot or a moorhen taking an awkward stroll on the surface of water.

Look at the silent and serene flow of water in some small rivulet, and a small shoal of white backed tiny fish under the surface, or a horde of water insects marching over the surface of the water.

Or look at that tharu youth (*Tharu are an ethnic group of people indigenous to the Terai -Editor*), oblivious with what is going on in this crafty world, engrossed in his fishing equipage, bent over the water of that small pond on the edge of forest. He is an innocent guy who for ages has been living on the edges of livelihoods.

Marvel at the large protrusions or the buttresses on the lower part of the stems of certain trees. Marvel how they have formed.

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## **A Tale of Trap and Release of Panthers in The Pilgrim Town of Tirupati**

**Paresh Kumar sharma, IFS.,(Retd.)**

I had been reading and hearing about the Man-Animal conflict since my IFC days. But I had the first-hand experience of dealing with it after I joined the Tirupati Wildlife Management Circle in July 1999. After handling few such cases and in-depth study, I am of the opinion that it's misnomer to call such incidents Man-Animal conflict. It's not because of the animals but because of the human beings, the conflict arises. The poor wild animals, be these Elephants, Tigers, Panthers, Blackbucks, Monkeys; to name a few, in most cases have been forced to come out of their habitat only because of the undue interference of the mankind. Human beings have not only snatched their food & water but also their homes.

Tirupati-Tirumala Devasthanam is one of the biggest temples in the world, both in terms of number of footfalls as well as Hundi collections (income). While Tirupati town is located at the foothills, Tirumala is the abode of Bhagwan Venkateshwara on the top of the hills. It is surrounded by seven sacred hills, hence nick name as the God of Seven Hills (Saptagiri in Sanskrit/ Hindi & Edukondalu in Telugu). All these hills are covered with lush green forests. These form the part of Sri Venkateshwara Wildlife Sanctuary (SVWLS) and Sri Venkateshwara National Park (SVNP). It's also a home to the famed Red Sanders trees, which are found on the higher reaches.

The SVWLS & NP are rich in biodiversity. It is home to some rare and endangered flora and fauna Cycas beddomei, Shorea toliara, Golden Gecko & Slender Lorris. Once upon a time it was home to Cheetah, Tigers and Elephants. Last of the Cheetah was spotted in Mamandur area in 1936. Subsequently it was declared as extinct. Elephants had reappeared in the area in the last decade of 20<sup>th</sup> century. However, Tiger was reported to have been seen by few villagers. One

of the plaster -cast of a pug mark was confirmed to be that of a Tiger in 2002; but the animal could not be sighted. This leaves only the Panther to be the big cat available in the SVWLS & NP.

After I had joined the WLM Circle, a functional Circle. It meant the CF & DFOs were not the appointing as well as disciplinary authority. It had its own disadvantages. Well, this is not the matter of this article now. Lots of reports of movement as well as sighting of Panthers came to my notice. Panthers were sighted frequently on the two Ghat Roads from Alipiri to Tirumala by the pilgrims. However, no harm was caused to any of the pilgrim. It is reported that the wild animals normally do not attack human beings as these are equally afraid of them. They attack human beings only when they are provoked, in defense. The Wildlife Forest Complex, known as Van Ganga Complex, consisting of CF's Office, a Rest House & Kitchen, CF's & DFO's Residence, had no compound wall. It was delineated with only a barbed wire fence all around. I had seen a Panther very close to CF's residence. The Night Watchman & my son had sighted a Panther licking water from a tap close to the CF's Office. My son was damn scared. The entire complex was on the periphery of the forests, at the foothills. Hence sighting of the Panther was quite common and a regular feature. However never in the past any incident of attack on human beings was reported.

One day in the midnight I got a call from a Professor of the SV Agriculture College stating that he had sighted a Panther in the Campus from the terrace of his house. I asked him if he was safe; to which he replied in the affirmative. Then I told him in a lighter vein, to watch the animal as long as it was seen for free, otherwise many a people don't sight a Panther in the wild even after spending thousands of rupees.

In the meantime, on the instructions of the then Chief Minister Sri N. Chandra Babu Naidu, I had prepared a programme of greening the seven sacred hills around the abode of Venkateshwara Swamy at a cost of Rs. 25 Crores for a period of 5 years. At the instance of the CM the EO, TTD Sri APVN Sarma had in principle agreed to finance the same. However, this was curtailed to Rs. 15 Crores for a period of 3 years only. The Project was very thoughtfully named as "Haritha Project", Hari denoting Lord Vishnu as well as Greenery.

The Project consisted of a. Assisting the natural regeneration, specially of the Red Sanders, b. Afforestation of the degraded forests and c. Soil & moisture conservation on Watershed basis. As part the 3<sup>rd</sup> component a 2 M wide & 2 M deep trench was dug all around the boundary of the forests/ WLS beginning from Kapil Teertham to Karkambadi. Besides staggered trenches at regular interval and percolation tanks were dug up. There were a good number of habitations and villages along the boundary line of the Forests, which was quite porous, despite digging of a deep and wide cattle proof trench all along, due to a number of streams. People still could go into the forest for sundry purposes including for defecation.

On the morning of 29<sup>th</sup> July 2000, a disturbing news of fatal attack by a Panther on a woman came. An old woman, very old & short in height with frail body, Smt. Peddamma of SV Puram colony of Mangalam Village of Tirupati Rural Mandal, had gone early in the morning for attending to the nature's call in a staggered trench inside the adjoining forest. The Panther had eaten away the intestinal parts of the body. After enquiries by the Forest and Police Officers it was concluded that probably the Panther had mistaken the old lady for a dog, as the deceased lady was in a ducking position. This was first such incident of a Panther attacking a human being. It was really a painful accident. All the formalities were completed, post-mortem was conducted and the late old woman was cremated. The CWLW Sri T. Ram Krishna also arrived for personally condoling the bereaved family and to grant the ex-gratia amount. The family had also treated it as an accident &

were satisfied with the action of the Forest Department.

But there was demand for trapping the "man-eater" Panther. The local leaders had staged a sit in (Dharna) & blockade ("Rasta Roko"). We had already decided to do so; but the local leaders had to show & prove their sympathies and strength to the local populace. The task was assigned to the DFO WLM Tirupati Sri C. Sudhakar Rao, Curator of the SV Zoo Dr. E. Narsimhulu and the FROs & Foresters of the WLM & territorial Forest Divisions. CWLW guided and supervised the entire operation. We had a very competent Asst. Curator Sri A. Parthasarathi and the Sargent Sri Selva Kumar, in the SV Zoo for handling this task. Strategy for capturing the Panther was chalked out. A team was assigned the task of monitoring the movement of the panther. The available cages in the Zoo were got repaired and placed at places expected to be visited by the Panther, along with live bait as dogs. The cages were shifted every day, based on the feedback from the monitoring team. After 4 days & nights of close monitoring of the movement of the Panther, finally the "Killer Panther" was trapped on 2<sup>nd</sup> of August 2000 near village Mangalam. It was confirmed by matching the pug marks of the Panther obtained near the corpse and those of the trapped Panther. It was a moment of great relief for the Forest Department. The news led to celebratory mood in the people of Tirupati & adjacent villages. The Press was full of praise for this successful operation. On being trapped this Panther did not attack or cause any harm to the Dog kept in the cage as live bait. The local Press named this Dog as "Mrutyunjeevi" (One who had conquered the Death). All the members involved in this operation, including an SI of Police, were awarded with Certificates of Merit at the hands of the District Collector, Chittoor on 15<sup>th</sup> of August 2000.

The same day PCCF Sri S.D. Mukherji had also arrived in the Tirupati. He met the family members of the late woman's family & consoled them. He witnessed the transport of the trapped Panther from Mangalam village to the SV Zoo. The Panther was confined to a cage in the Zoo, separate from the other Panthers. We mulled the idea of releasing this Panther into the wild; but dropped

it considering the label of "Man Killing Tiger" sticking to it. Our investigations & enquiries revealed that people residing on the border of forests were dumping food waste into the forest. This food waste, veg as well as non-veg was attracting dogs and dogs in turn were attracting the Panthers towards the habitations, due to depletion of their natural feed (herbivore prey base) due to anthropogenic factors. Hence, we launched a massive awareness programme in all such habitations by conducting meetings through Eco-Development Committees (EDC) as well as printing & distributing pamphlets in vernacular language, advising them not to throw food waste into the forest. We took the help of press and electronic media to this end. This programme was spearheaded very competently by DFO WLM Tirupati Sri C. Sudhakar Rao.

After this successful trap, the Officers and Staff were confident of handling any such eventuality. And the opportunity to do so was provided within the next fortnight of trapping the first Panther. There were panic calls from the public about sighting of another Panther in the forests adjoining Tirupati township. We also did not want to take any chance with this Panther; fresh from the memories of killer Panther in the month of July 2K, barely a fortnight ago. By now our rescue team had gained experience in terms of monitoring the movement of Panther but also in the knowhow of trapping the scary Panthers.

The Team was pressed into action. Cages with live bait, Dogs, were arranged and placed at vantage points looking at the pattern of the movement of Panther in question. Cages were shifted from one place to another keeping the above in view. At last, the team succeeded in trapping the Panther in the intervening night of 21<sup>st</sup> & 22<sup>nd</sup> Aug 2K. People of the town were once again very happy. The Panther was transported to the SV Zoo and confined to a Cell in the Panther enclosure. I was somehow not happy to retain the Panther confined to a cage in the Zoo. Afterall, it did not cause any harm to the human beings nor to any domestic animal. It was a free ranging animal and deserved life in its habitat as free animal. I discussed this issue with the CWLW, who concurred with me but advised to release the animal to

a far-off forest area from Tirupati. I discussed the matter with my DFOs WLM- Tirupati, Sullurpet & Cuddappah (now spelt as Kadapa) and Curator SV Zoo.

After detailed deliberations, we decided to release the trapped Panther in Sri Lanka Malleswara WLS (SLMWLS) in Cuddappah District, to the North of Chittoor District. The date and approximate locality, where the Panther was to be released, were finalized. All the preparations were made. The Panther was again driven into the Trap Cage, this time to be freed in the natural Habitat, in the early morning of 30<sup>th</sup> August 2K. The Cage was skillfully loaded into a Van with adequate quantity of feed and water for the Panther. Staff accompanied the Panther in the van. I and the DFOs were in the entourage; after all this was going to be the first of its kind experience for all of us. We all were excited as well as happy for the Panther and praying that no untoward incident takes place en-route till the final release of the Panther into the wild. We reached a locality known as Reddy Bavi inside the SLM WLS, about 10.5 Km away from a village called Rani Bavi, around 12 Noon. (Bavi means a Well in Telugu). The Trap Cage was unloaded carefully from the Van. The DFO WLM Cuddappah had also arranged local drum beaters for scaring the Panther so that it does not turn back and attack the officers and staff. To ensure this, on either side of the cage, at a distance fire was lit. All the Officers and staff and the drum beaters remained on the back & sides of the cage. All this was to ensure that the Panther sees only the forests in front of it once the door of the trap cage was opened.

At the decided time, 1.30 p.m., with the beating of drums and shouting by the officers, staff and labour, the door of the Cage was opened and lo, the Panthers straight away shot into the forest ahead without looking back. We kept watching the Panther running away as long as we could see till it disappeared into the forests, within minutes. We had the same feeling as if we had launched PSLV into its orbit from Sri Hari Kota Range! We danced with joy and congratulated each other. It must have been a moment of joy for the Panther as well.

Contd.. on page No.33

## We produce black - But our views are Green



Cultivation near Reclaimed Dump



Settling pond / Summer storage tank



Eco-Friendly Park



Award in recognition of eco-friendly measures

- Pollution control and Soil Conservation Measures.
- About 5.50 crore saplings were planted in Singareni spread over area.
- Artificial forest covers to OC Dumps.
- Avenue plantation in colonies and roads.
- Eco-friendly parks developed in colonies.
- Sand manufactured from OB.
- STP/ ETP at all Colonies / Establishments.
- Efforts of Singareni were rewarded by State and National level awards.



Colonies surrounded by greenery



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## FOREST MARTYR'S DAY (11<sup>TH</sup> SEPTEMBER, 2022.) Nehru Zoological Park, Hyderabad.



Sri Allola Indrakaran Reddy, Hon'ble Minister for Endowments, Law and Forest, Environment, Science and Technology, Telangana State receiving the guard of honour.



The Hon'ble minister laying a floral wreath at the Martyr's Memorial and paying homage to the forest personnel who sacrificed their lives for the protection of forest wealth.



**Sri R.M. Dobriyal, IFS, PCCF & HoFF, addressing the gathering.** Present on the dais ( From L to R ):  
Smt Sunitha Bhagawath, IFS, Sri Vinay Kumar, IFS, Sri R.M. Dobriyal, IFS, Sri V. Prathap Reddy, Chairman, TSFDC,  
Sri A. Indrakaran Reddy, Hon'ble Forest Minister, Smt Shanthi Kumari, IAS, Spl CS, Forests,  
Smt R. Sobha, IFS (R), Adviser to Govt ( Forest Affairs ) , Sri Lokesh Jaiswal, IFS.

**General Body Meeting of the Association of Retired Forest Officers of  
Telangana and Andhra Pradesh  
Felicitations during 96<sup>th</sup> General Body Meet dated 18. 09. 2022.**



**Sri D.V. Rao, IFS (Retd.)**



**Sri C. Ramakrishna Reddy**



**Sri A.H. Quraishi, IFS (Retd.)**



**Sri P. Upender Reddy**



**Sri Md. Rahmatullah**



**Sri M.K. Prasad, IFS (Retd.)**



**Sri A. Appayya,  
FDO, Kothagudem**

← Presentation on "Retrieving encroached forest land and raising successful plantations in retrieved lands"

→ A Certificate of Appreciation from Sri P.K.Jha, IFS, (R) President and Smt R. Sobha, IFS (R) Adviser, Govt of Telangana



**Dr Abbas Ali, MBBS, MS.,  
DNB.,**

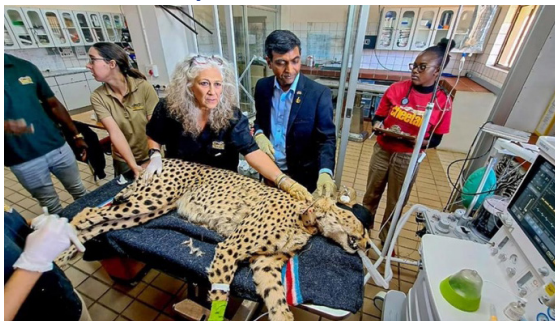
← Guest lecture on "Issues related to bones and joints for elderly persons -Precautions and Remedies"

→ A Certificate of Appreciation from Sri P.K.Jha, IFS, (R) President



## PROJECT CHEETAH

Release by the Hon'ble Prime minister in KUNO NP on 17<sup>th</sup> Sept 2022 -  
The world's first inter-continental large wild carnivore translocation project.  
(under Revitalise and diversify India's wildlife and its habitat)



### GOVERNMENT OF ANDHRA PRADESH ANDHRA PRADESH STATE BIODIVERSITY BOARD GUNTUR



Andhra Pradesh State Biodiversity Board have been playing a key role in Conservation of Biodiversity in Andhra Pradesh since its inception in 2006.

The mandate of the Board is to advise the Governments at various levels on matters related to Biodiversity Conservation. The three main functions of the A.P. State Biodiversity Board are -

1. Conservation of Biological Diversity
2. Sustainable utilization of the Biological resources
3. Fair and equitable sharing of biological resources among all stakeholders.

- APSBB have recently constituted 14,157 BMCs (Biodiversity Management Committees) at all level bodies of the state (13 @ Zilla Parishad Level, 661 @ Mandal level, 120 @ Municipality or Municipal Corporation level and 13,363 @ Grama Panchayat level) and prepared PBRs in electronic method for the first time in India.
- Massive awareness & publicity activities have been taken up in the last 2 years to promote Biodiversity in the state of A.P. through short-films, publications, workshops & seminars online & offline.
- APSBB initiated Core Activities Action Plan (CAPPs) for Operationalization of 10,000 BMCs through a special software platform developed.
- 661 NGOs appointed as Mandal Biodiversity Coordinators for supporting APSBB/BMCs in implementation of CAPPs.
- Rs 11.25 crores of ABS funds released directly to LBF (Local Biodiversity Fund) accounts of BMCs through online platform.



**Dr. B.M.K. Reddy, ARS (retd.)**  
Chairman,  
APSBB, Guntur

Come & Join Hands in  
Biodiversity Conservation

**Dr. D. Nalini Mohan, IFS,**  
PCCF & Member Secretary,  
APSBB, Guntur

Continuation from page No.28

For a period of about 3 months there was lull. There were no reports of any damage or scare by the Panthers around Tirupati town & nearby habitations. I wonder if the other Panthers came to know about the capture of their two brothers and hence avoided coming towards the surrounding forests of Tirupati? However, the silence was broken with a bang in the intervening night of 27<sup>th</sup> & 28<sup>th</sup> December 2K. A free ranging Panther had entered the Blackbuck enclosure in the SV Zoo. Due to fear and panicky the poor Black bucks started running helter-skelter within the limited space of the enclosure, trampling each other. It was a stampede of a sort. In the melee the Panther had killed a mother and her two cubs. In all 11 Black bucks had died. 2 more Black Bucks succumbed to the injuries by the morning of the next day, taking the toll to 13. This incident had come as a big shock to all the concerned in the department. The Panther had vanished back into the forests after this attack. Again, Trap cages were set at vantage points anticipating the return of the Panther. The team succeeded in the trapping the Panther. It was housed in the Zoo for quite some time. Zoo already had good number of Panthers. After observing the behaviour of this Panthers for about 8 months, we decided to set this Panther also free. This time we decided to release it into Chamala forests, a dense forest with plenty of prey base. Once again massive arrangements were made and on 21<sup>st</sup> of August 2001 this Panther was released in Chamala Forest.

In hindsight I consider that these Panthers had been trapped for no fault of theirs. They had strayed in search of food. If at all there is a fault, it lies with the human

beings as they have encroached upon their homes, which is shrinking day by day. Their food/feed is also depleted, natural grasslands have shrunk & the grass had been & is being grazed by the cattle herd. And same is the case with water. The human population has increased and increasing exponentially, but the land area is not, consequently there is immense pressure on all types of natural resources, not only from the human beings but also from cattle herd. This has resulted in the deforestation, degradation and fragmentation of the forests and the habitat of the wildlife. Under these circumstances if the wild animals come out of the forests or Protected Areas (unfortunately they cannot identify the artificial boundaries of the forests and PAs created by human beings!) in search of food/feed and water & as a result, sometimes accidentally cattle or human beings are killed; for this can they be blamed?

We the human beings, thought to be the most intelligent of all the life forms, can't allow these creations of the God to live in peace and harmony, un-disturbed in their habitat and not meddle with the scheme of the Almighty! Can we survive if all this wildlife disappears? Our survival depends upon their existence. Hence, let's not harm them and term these accidents as man-animal conflict; it's the result of the greed and selfishness of the human beings. We can come out with many a solution for taking care of the housing, food & water needs of the people and cattle without destroying the habitat. There is need to save the remaining natural forests and habitat of the wildlife. Do we care? Let's take collective action to do all what can be done, for which we are duty bound; so that there is no so-called MAN-ANIMAL CONFLICT!

*(Author is former PCCF & HoFE, Telangana & Chief-Consultant for Foundation Courses for AIS & CCS Officers at MCR HRDIT, Hyderabad. Can be contacted at +91 63000 30519 and e-mail pareshvyas22@gmail.com)*

Continuation from page No.41

1990s and showed them to the CF-AS Sadashivaiah who was astonished to acknowledge my observation. Again I showed him when he was CCF-Western Ghats

Project the same type of congregation of gaurs herds in foreshore area drive of the Begur RF in the summer of 1996 April after dusk.

*(The Author is a Retd Deputy Director, Project Tiger, Bandipur TR; and is an Author and a freelance Writer on Wildlife; Bengaluru. Mobile: 96327 81811)*



## Green Quiz - October 2022

**Quiz Master:**  
**Dr K. Tirupataiah, IFS (Retd.)**

1. One of the upcoming ports in a South Indian state is likely to pose threat to Olive Ridley breeding and also to the only Marine protected area (Mugali MPA) in that state. Which state?
2. In an innovative approach, farmers of Sibsagar in Assam are able to avoid man-elephant conflict by planting a horticulture crop along the boundaries that thwarts elephants with their thorns and smell of fruits which repel Elephants. Which crop?
3. Biodiversity is one of the planetary boundaries that help regulate planet's operating system. How many such planetary boundaries are identified?
4. In a unique scenario, a University itself is established within a Bird sanctuary in UP. Name the Bird sanctuary carrying the name of a great freedom fighter.
5. Power lines carry power but are also becoming death traps for flying birds. Which Indian state records the largest number of bird deaths due to power lines?
6. Which Indian Landscape is home to the largest number (11 ) of Tiger Reserves?
7. By what popular name are the Whitley Awards known?
8. Which phrase relating to Elephants in the Wildlife Protection (Amendment) Bill 2022 made the wildlife activists enraged?
9. Forest soil, home to billions of micro-organisms appeared in fossil records millions of years ago. During which geological period was forest soil recorded?
10. Micro-organisms are so small that they cannot be photographed in a normal way. While light helps in normal photography, what helps in photographing the micro-organisms?
11. Lignin is a complex compound that helps form woody cell walls in plants. This is digested and put on road to decomposition by which organism?
12. Which Birds, once threatened, are now considered to thrive better in Urban environs than in countryside?
13. A stretch of about four mile of a river flowing through Amazon rainforest is called Boiling River since its water is at 200-degree F. In which South American country is this located?
14. Main food of this category of fish is Birds. They come to River/Sea banks and hunt birds there. Name the category of Fish.
15. Which animal does not drink water, not even once, during its life?

**(Answers on page:48)**

***(Quiz Master is the Quiz Champion of All-India Forest Spots Meet 2019, Raipur. Retired as PCCF, he now works part-time as Chief Consultant (Trg.) at Dr. MCR HRD Institute of Telangana)***

**Note:** Contributions are invited from member/readers. Select questions (with answers) would be published in this quiz along with those from Quiz Master. Questions with answers may be mailed to: kota\_86@rediffmail.com.

## The Risk That Got Rewarded

**K. Praveen Rao, IFS (Retd.)**

Ex Director Kanpur Zoo



In those days I was posted as Director Kanpur Zoo in the year 2008. Kanpur Zoo was one of the large zoological parks of Uttar Pradesh and was spread in an area of about 70 Ha. At that time, we had around 1200 zoo inmates. In general, all the Zoo Directors strive to improve the animal diversity of the zoo by exchanging the animals. Even the visitors were always inquisitive about the new animals arriving in to the Zoo. The period in which a new animal joins the zoo, the zoo is rewarded with more revenues and the local media will have more positive stories about the zoo. But to our dismay, we had hardly any bigger animal fit enough to exchange. Lions stopped breeding due to old age and ill health. The white tiger, died of cancer and the one male tiger left was 'Guddu', which was eccentric and killed the females with which ever, it mated. Hence was living in 'Brahmacharya'. Blackbucks and Spotted Deer were plenty in numbers as they are prolific breeders. But same use to be the situation in all other zoos. They too had Blackbucks and Spotted Deer, plenty in numbers hence were least interested in their acquiring. The only big animal which was successfully breeding and had the potential of bargain for exchanging was Hippopotamus. Because of successful breeding the Hippo ponds were with full strength. By exchanging a pair of Hippos we could get a pair of tigers 'Abhay' male and 'Trisha' female from Junagarh Zoo. That was one major exchange during my first two years in the zoo.

Another potential animal which is sought after for exchange of animals was Rhino. Kanpur zoo was a participating zoo for rhino breeding. We had four Rhinos in four cubicles. 'Rohit' male, 'Manu' female, 'Mangal' male and 'Nakul' male. Nakul was a wild male which escaped from Dudhwa tiger reserve and was moving towards Rampur, where it was captured and brought to Kanpur Zoo for further treatment and upkeep. Rohit, Manu and Mangal were zoo born.

During my predecessor's period once Rohit male and Chutki female were allowed to mate. The mating ritual in Rhinos is most violent act. The male drives the female and chases it and the female keeps running in front. If one looks at the act for the first time, it appears as if both are fighting. Once they get exhausted the mating starts by mounting of male on the female. Earlier Rohit and Chutki mated successfully and gave birth to Manu and Mangal. In 2008 March when Chutki was in heat (The state of female's readiness for mating), Rohit and Chutki were allowed to mate. But that became the last day for Chutki and the mating ritual was fatal and the female succumbed to the injuries.

Whenever there was an incident in zoological parks, so many enquiries were ordered and the Director stands Infront of each committee like an offender answering all possible cross examination. This is one phase the Directors felt disheartened. I joined the zoo after this incident happened and all the zoo keepers have written off Rohit for any future mating.

Manu the female which was born in 2002 has become mature and was fit for mating and potential to produce future generations. One day Manu was in heat. My self and the Veterinarians Dr UC Srivastav and Dr.RK Singh decided it to mate Manu with Nakul, the wild born Rhino. We were of the intention that zoo born male and wild male will make a good pair and the off springs have good mixing of blood. Manu was taken in to a large enclosure, from its cubicle. The rhino enclosures are open type of moated enclosures (moat is a trench dug on the visitor's side, so that the animal cannot cross over to the other side). In a moated enclosure the animals are visible to visitors without any hindrance and cannot cross and vice versa. Because already an incident occurred during my predecessor's period, we all were vigilant to check and abort any such violent

incident. Many zoo keepers were placed on all the sides with some pebbles, so that they can be hurled at the male to deviate it. Now Nakul was allowed in to the enclosure. The moment it was allowed in to the enclosure, the male came running and pushed Manu the female with its horn in to the moat. It almost kicked it like a football. My heart took a pause. Nakul was still fuming and trying to enter the moat. Immediately alerted all the staff, they started shouting from all sides and started pelting pebble on Nakul to break its fury and the wild movement. Later Nakul was forced to move in to the cubicle and bolted it from other side. Manu was brought back in to the enclosure and given the feed and water so that it becomes normal. All this has to be done by oral cautions only, no zoo keeper can come in

contact with the animal. After some days tried another attempt with the same pair and this time too it resulted in a similar incident.

Now we were in a fix. Rohit the potential male and with whom Manu and Mangal were born is being regarded as killer male and Nakul's behavior was eccentric while mating. But keeping the old history of Rohit, I proposed mating of Rohit and Manu. The keeper Mr. Ramesh was hesitant. He had his reasons; one was obvious that it killed its mate. Second strong sentimental reason was, they both are father and daughter. He was thinking on the lines of human relations and whenever I proposed he was bit reluctant to carry out my idea.



**Rohit and Manu exchanging love signals**



**Mounting**



**Exchanging the greetings**



**Mounting in the water pond**

One day Mr. RS Bhadauria Retd PCCF, Uttar Pradesh, who was also the founder Director of Kanpur Zoo had come to Kanpur Zoological Park. We were taking rounds in the zoo. Infront of Rhino enclosure he enquired about the Rhino breeding progress. I told him the entire episode and also told him about the apprehensions of the keeper regarding the blood relations of potential pair. He snubbed us on it and said in the wild it is a common phenomenon that the first-generation male mates with second generation female and asked me not to attach human sentiments to wild animals, but better mate them to keep the generation progressing. This answered my first question of blood line. But the second question was still remaining that, if it acts violently then what. Because I already mentioned in this paper earlier that if one incident happens, you may have to face number of enquiries. Which was always disheartening and at the same time the media portrays the zoo as a villain.

During our period of dilemma, Mr. BS Bonal, Member Secretary, Central Zoo Authority, New Delhi came on an inspection of Kanpur Zoo. Mr. Bonal worked as Director Kaziranga, assam, Director, Delhi Zoo, Assam Zoo etc. While moving around the zoo, I requested him to guide me as what should I do for mating of Rohit and Manu, explaining what has happened earlier. After hearing to the entire episode, he said, even the animals rethink, what mistake they committed. Rohit missed mating for long for the mistake he committed. Hence, if it is given an opportunity it will behave in a responsible manner and the mating of the rhinos will be smooth this time. He also said that he had some such experiences as Zoo Director.

This gave me confidence, though if something happens, I will always be held responsible. But I had to take a decision whether to keep myself safe and not allowing them to mate or take a risk to mate the potential pair and see that the rhino population grows in the zoo and we will have a trump card with us to bargain for exchanging of more animals to improve the diversity of the zoo. Finally, after discussing with both the zoo veterinarians decided to go ahead with mating of Rohit and Manu.

Manu was in heat, after observing it for a day and two and decided on third day, that it is the right time for mating. on 9<sup>th</sup> Feb, 2012, In the morning gave both Rohit and Manu their regular feed and took Manu in to the open enclosure in the early hours. Because, at that time the visitor numbers are limited and less disturbance from the moving crowds. Decided to mate them in the same enclosure in which Nakul and Manu mated. This enclosure was in the corner and had road on both the sides, the third side there is a big enclosure in which Rohit was living and on the fourth side there are entry gates for the cubicles. Alerted all the staff. Kept them more vigilant. All of them were briefed several times, what they were expected to do in the event of any untoward eventuality. Though they were doing similar duty for many years but, I thought a word from the mouth of Director will have more weight. I myself and both the veterinarians took the command.

Now the bride is to be brought in, prayed almighty to give me strength and wish me all the best for the day. Gave green signal to the keeper. He opened the gate to give entry to Rohit. Our adrenaline flow was rising. The huge male came walking slowly in to the enclosure. The female was standing near the water pond in the enclosure. Both of them came face to face. Exchanged greetings. Each started smelling the other. Both slowly moved in the enclosure. Male was following the female and the love was in the air. The female stopped on the other side of the water pond. Male came behind and mounted on it from behind. It was a smooth act. We all took a sigh of relief. Male unmounted after the act. They gradually moved towards the slope in the pond. The female entered the pond. They both mated once again inside the pond. This time too it was not violent any more. We were feeling so happy that the things are moving in right direction. Manu remained in the water pond; Rohit came out. Rohit was standing on the banks of the pond and Manu came to the edge. Once again, they exchanged their experience of the day smelling each other. It was a great and triumphant feeling for the entire team. We all exchanged greetings. Manu gave birth to a male rhino calf, Pawan on 30<sup>th</sup> May, 2013.

Contd.. on page No.46



## Thrills of Sighting Animals in Wilderness

**B M T Rajeev, IFS (Retd)**

The Foresters in wildlife service have umpteen number of opportunities to see, observe and enjoy the sightings of wild animals in wilderness-natural surroundings is an unsatiable **Thrill**... further to observe their food earning habits, social behaviours, mating, nursing young ones, migration to mitigate food, water deficiencies and their beauties etc., during rounds on duty are gifts of the service. I have documented whatever that I have observed in service in my book "*Handbook of Indian Wild Animals*" published in Kannada under appropriate animals' descriptions. But I wish to quote some of my interesting experiences to inspire the readers of this magazine about tigers, elephants and gaurs since the wildlife sighting is a matter of chance and luck which depends on the density of the wild animals in their Den.

**1. Tiger (*Panthera tigris tigris*):** Tiger is a national animal of India for conservation of it a project "Project Tiger" was launched in the year 1973. The population of tigers in Bandipur Tiger Reserve (BTR) was just 11 when it was launched in 1973. The thrill of sighting a tiger in the 1970s in BTR was only a matter of individual Foresters' or visitors' luck and it was not on show as it is since the 2000s.

**In the 1970s..** I entered to serve in BTR in 1978 at the level of Range. I was very keen to see the elusive tiger.. We were going to Himadavad Gopalaswamy hills FRH in June, 1978 during a night in a jeep, the driver stopped the jeep by shouting tiger, tiger..... to his left in the forest...I could see only its tail..... *golden rod with black ribbons*.

We were on night patrolling against elephant poaching during **Ayudhapuja day, 1978** in Berambadi RF of BTR on the State Highway-Mysore-Calicut Road. There is a curve called Muthigethodu halla where a tiger was killed while crossing the road by a speedy travel bus on

Ayudha Pooja day in 1977 and case was on ..... I was with a colleague-A Chickabasavaiah in a pick-up van with one seat in the front with the driver. My relative nephew was in the front, and we too were officers in the back seats. The driver-Gurushanthappa shouted 'tiger, tiger..' and stopped the van with severing.....by the time we peeped out.... the tiger had disappeared. The driver said that he miraculously avoided the jeep from hitting the tiger in the curve as it was crossing the road in the same spot where the accident happened last year.....My relative was lucky to see the tiger in full bloom.*(This is a known route of wild animals crossing the Highway during day and night in BTR- for watering in the Nugu River- where a tragedy of hitting and run over on a herd of elephants crossing the road by a speedy loaded lorry took place during night and led for the ban of night traffic through the BTR from Sept, 1979.)*

Next-We were going on patrol to **Kalkere FRH from Moolehole in 1979-** ACF- S Shivalingaiah and me during night... We saw two bright eyes on the game road opposite to us...we guessed it was a tiger by the time we approached it.... disappeared. We stopped the jeep at the spot and could not see any.... we went ahead and returned to take a chance to .....and could see the tiger walking on the road from the back. We approached the spot for which it slipped into tall grass growth and was moving. We could see and follow it for a distance and returned then to FRH with satisfaction of seeing a tiger after a year and half service in the BTR in AM Gudi RF at Natarajan Kolachi.

**Next in 1993** as ACF, I was moving with CWLW-MK Appayya to Kalkere FRH, we came across a tiger-male, well grown, sitting on the road at a curve close to the FRH in the afternoon. We stopped and observed till it got up and slipped into the forest, was looking at us

by turning its head back when we passed on...it was said to be a residential tiger generally seen by staff stationed at Kalkere. The CWLW said that he was able to see a tiger in the wild very close to it for the first time.



- Pic. By SG Neginal

**In May, 1995** the BTR received early rains, the forests were aromatic breeze with sprouting of new foliage and blooming of many floral species from trees to ground flora. The animals' sightings were high in the tourism zone of the BTR for attraction of the summer holiday crowd and the mid-way break tourists of the Mysore-Ooty summer. A couple of tigers in the heat were noticed by a tourist party at the Huli katte (Tiger Pond) and it was a hot news for the visitors to rush in for the vista. In the mean time the ADGP-Forest Cell-Chickkerur too had come and camped in our facilities. I got the news about it and rushed there in the evening and saw the tigers in an infatuation mood of mating. *Huli katte is in the middle of the tourism zone with water and open forest around it for animals to take cover with a route road for tourism and a salt lick for herbivores. An ideal site for the tigers to mate, rest, water when thirst and think of a meal when hungry by preying on herbivores comes for watering or salt lick. I observed the tigers mating as per their habit...(mating for a minute...rest...then repeat....rest..for 2-3 weeks...till the tigress in heat is impregnated with orgasm; if not the tiger which has exhausted will give way for the tigress to invite the prospecting tiger to continue the process) and it will continue for days. Again, we saw*

them in the morning in love making. It became a special attraction for the tourists to gather from Mudumalai too. The over enthusiastic wildlife lover ADGP commented that tigers should not become showpieces like this and loose their sanctity...but it is their habit in the place of their safe home. I saw this type of mating of tigers in 2001 at Bannerghatta zoo and again in August, 2014 in BTR tourism zone...where tourists were over crowded to witness the show.

**On January 25, 1996**, I as DCF, was moving to Gundlupet after a camp in Kalkere in the dusk- 5.30 PM a very clear day with Sun setting beyond the Kalkere Hills with forests full of growth in the west and the twilight was bright. I was moving in the straight road from Kalkere-Natarajan Kolachi-Waranchi Road eastward. The road was very clear with the background of defoliating deciduous forests with grey grass going dry for summer. I was in a Maruti Gypsy-green with driver-Joseph. We spotted a tiger walking straight on the road opposite to us. We stopped the jeep and sat silently in the jeep. *It was approaching us- the vista of it was like white tiger from the front with radiating upward black stripes with golden cover with black stripes on its back..... it walked majestically on the road track, reached us, took to its right to the side drain of the road and to the left side of me at arms distance ..... and overtook our jeep and came back on the road and walked like a King-male tiger...so close for the silence of it's PA's master sitting by closing the window screen of his jeep with awesome fear, respect for its gaiety & vista.*

Then we started to move to Hqs for the R.day celebration the next day with a curse for not taking my Nikon-5 D camera to frame it...but if the camera was with me...it would have not walked so close to me due to clicking sound of the camera. What happened was for the good of all. As per our analysis it was the same tiger which we had seen in the 1993 with the CWLW near Kalkere as the male tigers move over larger areas overlapping the home ranges of a few tigresses. The tigers have been sighted many times later.

The population of tigers in BTR went on increasing from 11 in 1978 to 175 in 2020..... the success in sighting of tigers by the foresters/visitors in the BTR went on proportionally high with the time.

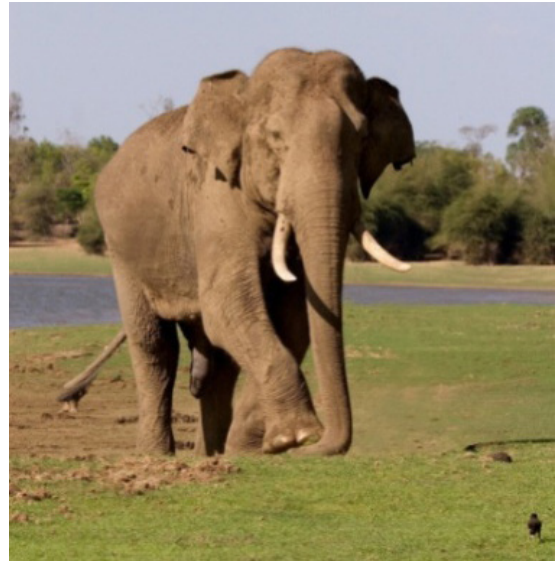
## 2. Interesting animals to sight in wild are elephants:

**Elephant (*Elephas maximus indicus*):** The population of elephants has been good since a long time in the Bandipur TR right from the conservation of wildlife started from 1931 in Bandipur. Earlier it was one of the good habitats of elephants in India. The elephant population was subjected to dwindling due to merciless killing of elephants in the guise of crop protection during British rule and for trade of ivory in the international market before Independence/enactment of the WLPA, 1972. Since then, it is a scheduled animal, and it was protected along with tiger and other spp. It has had special protection measures since 1993 under "Project Elephant". It is a national heritage animal and the State animal of Karnataka/Kerala & Jharkhad. It is one of the attractive animals for sighting/tourism in the wilderness. The safari trips in BTR are not complete without sighting elephants-the speciality of this animal in BTR. But they have seasonal migration to safer places for food, water, and shelter. It is difficult to see elephants during winter in the tourism zone since elephants migrate to fringe & open forests in the northern border of the BTR to raid crop fields during nights and in peak summer to Kabini backwater and some to the foothills of Nilgiri in search of more water. The Elephant sighting is more during monsoon from June to October every year in herds and in the half season residential families can be seen. If some tracking is done for some purpose-they disappear with suspicion of danger.

E.g. Inspite of our best efforts to show elephants to the then President of India Sri N Sanjeeva Reddy during his halt and visit in 1980....only one elephant-tusker could be sighted-for which the Prez jokingly commented that the wildlife is only the field that the Supreme Commander of India has no command.

The elephants are social animals that live in herds. Herds are headed by a big bull or by the matriarch and

the rest of the members follow the leader. Their sighting in open meadows or in water holes or in the salt licks is facinting. They move with foraging and avoid the same spot as they dislike their own soiled place by defecation and urination for weeks.



*Pic: By MN Jayakumar*

In the open meadows, if an intruder or a vehicle goes near the herd of elephants..... will get alerted by smell or by observation.... the leader or an elder will try to mock charge and drive away the intruder with the fear of safety to young ones. The grown up sub-adult males are thrown out of herds by the leader when they start sexually misbehaving. Such bulls are dangerous to approach.

Eg: 1) In June 1978, the then governor of Karnataka Sri Govind Narain paid a visit to halt at Bandipur. The safari area of BTR has number of water holes named after the animals like Ane katte- elephant water hole where elephants sighting is almost sure in the evening as it is in between 3 water holes in a flat area covered by chain of safari route roads from Huli katte/Kirubna katte etc ... the governor was scheduled to arrive by 5.00 PM for the safari trip but he came at 6.00 pm...one of strict field Director-DK Deshmukh who was waiting for him....was upset with his late arrival with fear of wild

animals' disappearance in the dark-charged him why are you late...wild animals will not wait for VVIPs to move in their routine route & time?.... Governor was mum..... and we took him on safari-for his luck-a big herd of elephants with all age groups from calf to big bull and mummies were in the water hole-Anekatte and were enjoying the swim without caring for the arrival of the safari troop. The governor and his entourage felt happy with the sighting...when elephants moved out of water, we moved on ...and our trip route and the elephant's movement was so planned from the days of Maharaja's time-laid out in 1940s.... that the VVIPs could see the elephants foraging and moving criss-crossing our safari route till 7 pm...the sighting of gaurs, sambars, chitals, wild boars and langurs were all complimentary for the thrills of the Governor.

2) In May 1994, the Vice President of India, Sri KR Narayan paid a visit to BTR, the area had received early showers and it was drizzling at the time of his safari visit- his entourage was full of officers from Karnataka. We took him in a safari minibus. Sir & Madam took a two-seater in the front...we stopped to see a wild young elephant bull which straight away charged the bus. Madam was scared of it and sought for a gun man—then, Sir pacified the madam with a smile as...mock charge...they could see all the herbivores in herds except big cats.

3) In June 1994-the Governor of Karnataka Sri Kurshid Alam Khan paid a visit to the BTR with family and grandchildren. It was drizzling and his 2 trips during evening and next morning were a failure as we could not come across any herds of elephants or bison. In the evening 3<sup>rd</sup> trip-we could not come across any thrill...The Governor was upset and ordered to return to the camp....while returning I pleaded him to permit me to take in a loop road close to the Bandipur campus around the Bandipur tank-an extra 3 km. Got his permission and entered the loop road in dusk..we came across a herd of elephants, next bison and herds of sambars, chitals and wild boars all facing & foraging towards the campus... the Governor family and his grand children were thrilled and felt happy ....on reaching the camp

the Governor declared that their camp is over and will return in the morning against their 4 days program-I named that loop road as Governor's Road.

I had seen the elephants herd in big water holes in summers once in Shanbukatte near to Beladakuppe in 1986 and once in Alegowdanakatte in 1993.... *The scene of elephants play in shallow waters is like "Krishna's Rashaleela". First the leader will enter the water hole followed by all by looking into the safety.... After drinking water to their full satisfaction...they start flashing water for cooling the body...., swimming and wallowing in water...the young ones dip and rise for patting of the mother & relatives.....sub-adults form peer groups and play water games by flashing water on one other, dipping and rising, wrestling and enjoying.... when the Sun is hot, they play for hours in the afternoon till Sun become cool and then the leader makes a move to be followed by all.....which give a look of most satisfied animals on the earth.*

### 3. The Indian Gaur or Indian Bison (*Bos gaurus*):

The gaurs are attractive animals to look at in wilderness and enjoy their gait. The gaurs have white legs up to the knee like socks. The females are dark brown, calves-grey brown and bulls are pitched dark in colour with horns. They are social, sensitive, and very shy animals and will disappear with a small suspicion of danger. Gaur is an indicator spp of animal of the Bandipur TR. They suffered severely in the Rinderpest disease outbreak in 1968 in terms of population and their population required with the launch of the Project Tiger. They have a habit of seasonal migration during summer towards cooler areas in the Nilgiris and towards Kabini, the rest of the time they are found in the BTR. *But their congregation during autumn Sept-November is phenomenal in the tourism zone of the BTR when the Gaurs congregate around the Bandipur campus during the night- gaurs start moving from the interior of the BTR before Sun set in herds from all the direction towards campus...not to the campus and then move out before dawn..... I had seen them in herds of hundreds, hundreds during my stay in the*

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## Tranquilization- A Management Tool

Hemanth Kumar, IFS.,

The use of chemicals (poison an arrowhead or in food) for capturing wild animals for food is well known from antedated historical records. However, methods were developed for the safe immobilization of animals by using chemicals, about four decades ago that presumably correspond to the discovery of inhalation anesthetics (ether & chloroform) for veterinary and human medicines.

The first drug used through projectile and syringe to immobilize wild animals was a paralyzing succinyl choline drug. However certain disadvantages like an abrupt recovery from muscle paralysis and a low safety margin of the drug coupled with a lack of a suitable antidote precluded the drug for subsequent uses. However, with the advent of new and safe drugs, chemical restraint is becoming a good management tool for wildlife managers.

Chemical restraint includes any method that primarily uses a chemical agent or drug for restricting animal freedom i.e., walking running and aggressiveness. The state of resistance can vary from immobilization (arresting movement), and tranquilization (calming) to anaesthetization (complete loss of consciousness).

For immobilizing the targeted animal, the handler (a trained and professional person, preferably a qualified Vet) uses different equipment like drug delivery systems (pistols/rifles that use charge/ gas for propelling the darts) blow pipes/ pole syringes, etc), darts and drugs.

The good equipment must have the following qualities:

- They must be Safe to operate, easy to clean, service & repair.
- Fast to use and not affected by temperature, humidity, and altitude.
- Trouble-free reliable performance in all seasons.
- Consistent dart accuracy at the desired distance.

- Minimal Impact trauma, tissue damage to the animal.

### Drug delivery systems:

A variety of equipment is available for the delivery of drugs to wildlife. Some of them are:

- Hand-held Syringe,
- Pole Syringe,
- Blowpipe,
- Pistol or Rifle etc

The basic principle for choosing the equipment is the distance from the animal and the effectiveness of the drug to be injected.

The pole syringes/ blow pipes are used for a tranquilizing wild animal that is in a cage/ in a trap/ passing through a narrow passage etc.

Pistols/ rifles are the power projection systems. In these, the dart propulsion is done through powder charge or carbon dioxide or compressed air. Dart velocity can be regulated by the position of the dart in the gun.

Distance between the animal and doctor is the deciding factor in choosing of a pistol/ rifle and the propulsion mechanism. Rifles are operated for distances up to 100 yards and pistols up to 30 yards. Cartridge power sources are used in rifles that take darts up to a distance of 100 yards and in pistols darts go up to a distance of 30 yards. Co2 power source takes darts by using rifles up to a distance of 5-40 yards; in the case of pistols, the darts go up to 3-30 yards. Air pump charge in rifles takes darts up to 5-40 yards, and the same takes darts up to 2-15 yards when pistols are used.

### Darts:

These are used for Drug delivery. There are three kinds of Darts: - viz Darts with explosive mechanism,

darts with air activated mechanism, and darts with spring activated discharge mechanism. A brief on these is given below:-

**(a) Darts with explosive discharge mechanism:**

These have a small explosive cap is placed between the plunger and cap. These may cause tissue damage

**(b) Darts with air-activated mechanism:**

In these darts air is introduced through a one-way wall in the tailpiece and compressed against the plunger- at impact silicone seal is displaced in the side of the needle- plunger is pushed forward

**(c) Darts with spring-activated discharge mechanism:**

These darts contain a spring coil behind the plunger, after the drug is loaded a rubber seal is placed over the needle tip. The tailpiece with the coil spring is screwed behind the plunger. On impact, the needle penetrates the rubber seal

**Drugs used for immobilization:**

There are several chemical agents or Drugs available for restraint of animals, each drug works differently and is more suited to some species in purpose and response than the others. The time required for a drug to have an effect depends upon the factors such as the injection site, route of administration, absorption rate, Physiological state of the animal, and concentration of the drug. However, several other variables can in pair the drug effect due to variation in species of animals, age, sex, temperature regimes in seasons and time of the day animal temperament and emotional state, and its physical & physiological conditions. Response of the drug to these different variables may often make chemical immobilization unpredictable

**Route of administration:**

Drugs can be administered to animals in a variety of ways. The routes of administration have a great effect on the effectiveness of the drug. The 3 most common routes of injection in wildlife are subcutaneous, intramuscular, or intravenous. Intravenous administration will result in the fastest drug absorption and the shortest effect of

the drug. Most drugs given to wildlife are administered by the intramuscular route

**Different animals and the Darting areas:**

For effective capture of animals, different darting areas are prescribed, they are as follows:

1. **Elephant:** Shoulder or the hind quarter below the level of the root of the tail
2. **Rhinoceros:** Neck, the upper portion of the shoulder, and the side of the slopping rump
3. **Wild buffalo and gaur:** Shoulder and rump
4. **Sambhar, Barasingha, and Nilgai:** Rump, shoulder, and neck region
5. **Chital, Blackbuck, hog deer, barking deer, and Chowsingha:** Neck, Shoulder, and Rump
6. **Tiger, Lion, and leopard:** Shoulder and Rump

**Commonly used Drugs for chemical restraint of wild animals:**

The drugs can be categorized into mainly two groups they are:

- Paralyzing drugs
- Centrally acting compounds

Paralyzing drugs: These are mainly competitive neuromuscular blockers acting either at the neuromuscular junction or at motor end plates causing depolarization. Some drugs stimulate autonomic ganglia causing paralysis. Some of these drugs are

- d-tubocurarine chloride
- gallamine triethiodide
- Succinylcholine chloride
- nicotine salicylate
- other nicotine alkaloids

**Centrally acting compounds**

- (a) Opioids are the most important drugs that affect the central nervous system and these are used for the immobilization of a variety of animal species including ungulates, elephants, and rhinoceroses. These drugs are good analgesia but have poor muscle relaxant properties.

Side effects of these Opioids include excitation, regurgitation, bradycardia/ tachycardia, muscular tremors, hyper/hypotension, etc. These are extremely toxic to human beings; hence care should be taken to avoid accidental exposure. Some of the commercial names of these drugs are:

- Etorphine HCl (M99)
- Fentanyl citrate
- Carfentanyl citrate
- Cyclohexamines

For these drugs, suitable antagonists are available like diprenorphine, naloxone, or nalorphine.

- (b) Another group of compounds that affect the central nervous system is rapid-acting dissociative anesthetics. These are particularly effective in carnivores, bears, primates, reptiles, and birds and have a wide margin of safety, and quick recovery. These drugs induce a state of cataleptic-dissociative anesthesia-pharyngeal and laryngeal reflexes are retained but unresponsive to stimulation.

Side effects include muscle rigidity, excessive salivation, hyper/hypotension, and vocalization. Some of the drugs in this category are

- Ketamine
- Tiletamine
- Central Alpha-2 adrenergic agonists

- (c) The third category of drugs that depress the Central Nervous System with sedative, muscle relaxant, and analgesic properties are xylazine and medetomidine. These drugs may be used alone or with opioids and cyclohexamines. Their effect varies from mild sedation to immobilization depending upon the dose used. Specific antagonists are available for these drugs. In excited animals, these drugs do not produce a satisfactory level of immobilization.

High doses of these drugs cause depression in the respiratory and circulatory functions of

the individuals and at times depression in the thermoregulatory mechanism can also be seen.

Recovery from high doses is prolonged and difficult

Doses of xylazine (mg/kg) used in important species are as follows:

- Bovinae: Domestic cattle 0.1 – 0.3, Fighting bulls 2 – 5, Domestic buffalo 0.25
- Antilopinae: Nilgai 1 – 1.5
- Ursidae: Bears 8 – 10, Polar bear 5
- Hyanidae: Striped hyaena 7 - 8
- Canidae: Dog 3, Wolf 7 - 8
- Felidae: Cat 3, Wild cat 8, Lion 8, Tiger 8

- (d) Centrally acting compounds: These are mainly Neuroleptics and are short-acting sedatives or tranquilizers with little or no analgesia

These drugs are generally included with other drugs to potentiate their effects and mitigate side effects and reduce the dose, especially with opioids and cyclohexamines. Some of the drugs that belong to this category are:

- phenothiazine
- butyrophenones
- benzodiazepines
- perphenazine enanthate
- fluphanazinedecanoate

### Drug combinations:

It is always wise and safe to use a combination of compatible and complementary drugs. Generally, common mixtures include a primary drug, which is either opioid or cyclohexamine, and a neuroleptic (tranquilizer) or alpha-2 agonist (sedative)

Popular drug combinations in wild animals are:

- Bear- xylazine 2-2.5 mg/kg + ketamine 5-9 mg/kg
- Black buck- carfentanil 1.2-1.5 mg/kg; etorphine 2-3mg + acepromazine 5mg

- Dear samber- do-; ketamine 9mg/kg +xylazine 0.7 mg/kg
- Elephant- carfentanil 2.1 mg/kg; Etorphine 0.0022 mg/kg
- Hippopotamus- Etorphine 3-5 mg;
- Hyena-ketamine 10mg/kg +xylazine 1mg/kg
- Jackal-ketamine 20 mg/kg + promazine 1mg/kg
- Lion- ketamine 7.6mg/kg +xylazine 3.6mg/kg
- Nilgai- carfentanil 3-3.9 mg; etorphine 4-6mg
- Rhinoceros Indian- etorphine 2-2.5mg
- Antelope- etorphine 2-4mg +xylazine 25-30mg
- Tiger- Telazol 4-5 mg/kg
- Wolf- ketamine 10 mg/kg + promazine 1mg/kg
- Zebra- etorphine 2-4mg +200mg azaperone

### Capture stress:

Capturing and restraining an injured or ill animal is extremely stressful, and the rehabilitator's primary goal is to reduce stress by minimizing pain and distress. Stress is the body's reaction to abnormal states (e.g. infection, extreme temperature, injury, fear) that disturb the normal physiological equilibrium. Fear, fright, or rage activates the hypothalamus, causing massive discharge of the sympathetic nervous system to prepare the body for vigorous muscle activity

Stress can result in capture myopathy, a disease complex associated with the capture or handling of any wild species. Capture myopathy occurs when an animal cannot cool itself; the key feature of capture myopathy is hyperthermia (an increase in body temperature)

### Factors involved in capture myopathy:

Drugs used for restraint (particularly xylazine) cause an increase in body temperature. For this reason, these drugs must be reversed after use

**Muscle Pump:** muscles exert a pumping action as an animal move and this aids blood flow. When normal movement is taking place 15% of the total blood volume

is in the muscles. In a drugged animal, 25% will pool in the muscles causing a drop in blood pressure. Lactic acid builds up and cooling is reduced

**Fear:** the single most important factor in capturing myopathy

### Capture myopathy:

There are four categories of capture myopathy: peracute, acute, subacute, and chronic.

**PERACUTE:** capture myopathy: death may occur in a matter of minutes due to low blood pH, potassium release from damaged muscles, and heart failure. There are few post-mortem signs

**ACUTE:** capture myopathy: the animal lingers before it dies. Muscle rupture may occur and the animal, if able to stand, Death occurs within 24 - 48 hrs

**SUBACUTE:** Onset is slower, the incidence is high but mortality is lower than in the per acute form: acidosis causes muscle and kidney damage. Urine may be a dark brown color. Recumbent animals often have their necks twisted back. Death follows within a few days.

**CHRONIC:** Developing slowly, duration is longer: animals may survive several days or months but will often die suddenly from a heart attack.

### Precautions to be taken after the animal is tranquilized:

The rate of respiration drops considerably with most CNS depressant drugs; however, depth and regularity of breathing are as important as frequency. Shallow, irregular breathing is a cause for concern. In the event of failing respiration or circulation, a small amount of antidote should be immediately given intravenously if the immobilizing drug has an antagonist.

0.880 Ammonia dabbed onto the back of the tongue may stimulate failing respiration. Alternatively, intravenous hydrochloride is a "very powerful stimulant.

If respiration stops totally, artificial respiration may be attempted in smaller ungulates but is not feasible in

larger animals. Put the animal on its side and expel air from the lungs by pressing downwards with both hands on the thorax sudden jerky manner. Release pressure quickly. Alternate this with blowing into the animal's nostrils, while the mouth is held closed by your hands, to fill the lungs with air. Continue until breathing is restored.

Shock or acute acidosis may cause cardiac arrest. Circulatory failure may be treated by intramuscular injection of cortisone preparation such as dexamethasone ("Dexafort"), which is long-acting - up to 8 days. Note this drug may cause abortion after

approximately 48 hours if administered to pregnant females.

#### **Dosages of Dexafort:**

- i. Ungulates: 1 - 3 ml (depending on size)
- ii. Rhino/elephant: 15 - 20 ml (depending on size)
- iii. Cats: 1 - 4 ml (depending on size)

**NOTE:** The information given above is for imparting knowledge about various aspects of chemical restraint only, but not for an untrained individual practicing in the field. It's always better - a well-trained qualified person handles the chemical capture operations.

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By that time, I was out from Kanpur Zoo. But the news reached me. It was a great feeling of getting a grandson in your family. Later the same pair gave birth to another

male which was named Krishna. Thus, the risk in my period was rewarded by progress in the generation of rhinos.

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Dudhwa is home of few hundred butterfly species. Watch the butterflies flitting from one flower to another, from one bush to another, marvel at the multiplicity of their colors, the pattern; marvel how they suck the nectar from flowers. And watch them in a bunch when they are mud- puddling on a lump of mud or animal dung. Watch at their size – some of them are really too tiny to be noticeable.

But never miss to look at those tall golden grasses. They are so dense and tall you might fail to see a pachyderm or a rhino into them. But these golden grass

fields are throbbing with life, particularly the avian life. But you have to stay and stare for a while.

Enjoy the very sight of dark and deep sal forest. Enjoy your very own presence amongst them. Have a feel of the jungle. Enjoy the wilderness of the place. Have a feel of open spaces. Feel the fragrance of the jungle, of its pure air. Have a feel of being away from the maddening crowd of men and their automobiles. Feel happy at miles and miles of green limitless horizon before you.

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A sketch to Commemorate Wildlife Week (2-8 October) & World Companion Day (28<sup>th</sup> November):

## An Ode (in prose) to The Semi-wild 'Goldie', our 'Persian' 4-legged Bundle of Fur

Dr B Raghotham Rao Desai, IFS (R)



*"Why pen is akin to the wing of a bird, telling those thoughts normally 'not thought' of, and the dreams 'seldom dreamt'?"*

### Preamble:

'Love' is a four-letter-word----and love can be a four-legged bundle of fur with a beautiful erect bushy tail too, wildly resembling a wild tiger's cub in appearance, which had entered our lives as (about) four-month-old, to act as a companion to the grandchildren of the family, weeks after the demise of the lady-of-the-house in 2009 and changed the hearts of the inmates of 'Bharani' forever into a heaven of warm feelings! Yes, 'Goldie' with his soft, pudgy, baby-paws, quietly entered our home from the nearby tree-grove and instantly became the cynosure of every one's eyes, giving us so much love and joy we can perhaps never be able to repay in the same coin----life had not been the same after he came and life can never be imagined to be the same without him around, as he had become a part of our household for nine years running!

For the first couple of hours (after the two grandchildren of the house brought him from the mini forest at the backyard of premises behind), he never mewed: exhibiting mysterious & intriguing nature for which cats are known to, and suddenly thereafter we heard a 'small yelp coming out of his soft throat' & continuous 'purr' from his 'soft belly' (as we held him in our arms) like a sequel, and his bright eyes shone (at his own voice). We never ever mistook his tiny bites for aggression and always loved him rubbing (himself) against our legs as an expression of his affection. After that, there was no stopping----every floor of our three-story house reverberated with his excited mewing and romping & frolicking: he perhaps knew 'he was in a territory that he

owned'----no one to stop him from his mischief, no one to train him to 'behave'!

### What happened next:

Then, he grew up 'a bit too fast'(perhaps since he was no more in the wild, and as he was getting proper care), but that much was needed to ensure him not to 'leave our company'----his eyes following wherever the children-of-the-house went, and their eyes following every move of his----what vets call as 'separation anxiety', which is actually a state of deep love, a state of 'feeling helpless without the other': with his mewing & 'scratching (any available cardboard-surface to sharpen his claws) sounds' around, his footsteps rhythmic on the mosaic-floors, his eyes rolling & dancing with any & every gesture (of the two loving grandchildren and their parents, & all aunts and cousins) in particular. Who says a cat doesn't smile? ----we have seen the most photogenic-fellow smiling several times at one & all of us (particularly at the youngest, cute grandchild & sweet great-grand-child of the house), his face beaming!

'Goldie' was not just a cat (from semi-wilderness background) ----he's the commander of cats who loved sneaking in the sun (by resting on parapet of neighbour's terrace, enjoying the hide-and-seek shade of overhead plants & the tree), mewing and fastidiously growling. Yes, he was pretty much different than any other feline, and deeply resentful of any new member of his ilk----hissing, clawing and spitting any-one venturing to enter his territory. Not particularly afraid of dogs, he was seen watching them from a safe height & distance, with an air of academic scrutiny, it being an age-old dichotomy between cats & dogs! I don't deny the fact that there are many a quirky & smart creature, but to us there's only

a prince among creatures (including humans), and that was 'Goldie'.

During the day-time he always preferred to settle down cozily on the cushiony-chairs on the ground floor, or on the bedroom-cot (wherever the lady-of-that-floor happened to 'work from home')---comfortably resting his entire body on her lap or on the laptop or her person, if she was relaxing, once in a while looking up as if 'questioning her if she was interested in petting him or not', demonstrating how felines are capable of distinguishing one item from the other. Then, she would play with him, teasing him by moving her fingers over his head/neck & back---avoiding however, his attractive tail, since he got annoyed whenever the palm traversed his back. That was when he would run around her gleefully---the dear 'Goldie-boy'!

### Epilogue:

Such being the bond between us and 'Goldie', imagine our sorrow when one day we found the four-legged creature lost. Our grandson Aprameya almost went berserk with grief and mourned for days on end. I recalled an incident which occurred about half century ago when his late grandmother and myself were staying in a designated residential quarters at a place called Yadgir (in Kalyana Karnataka Region of our state) where I was posted (and when his mother was still a kid). She nurtured a plant, a jasmine creeper of flowers and fragrance, that formed the doorway of our residence's backyard. She used to adore the flowers, inhaled their fragrance first thing in the morning and used to thank the creeper for being there for her--- it was the pride of her garden at the backyard of our

quarters and the solace of her heart. When creeper was accidentally uprooted by careless hands (as we were to leave the place on the transfer after six years' stay), her grief was complete---just like a heirloom (or a piece of memorabilia) lost happens to be the loss of preserved memories, and I had to console her, and quoted celebrated American writer Joan Didion (1934-2021) who said: "Grief turns out to be a place none of us know until we reach it---grief is different, it has no distance, it comes in waves, paroxysms, sudden apprehensions that weaken the knees & blind the eyes, obliterating the dailiness of life". And also quoted Tagore (1861-1941): 'The death is not extinguishing of a light, but the putting out of the lamp, because the dawn has come'.

### Conclusion:

And death does not always have a human face---grief being not necessarily over a human connection, which can be animate or even inanimate. While mourning the loss of connection, we also mourn ourselves as we were, end never will be again.

Say not in grief he's no more' but  
Live in thankfulness that 'he was'

--- Hebrew proverb (A Jonathan Auxier quote)

Grief never recedes completely, leaving us---on the other hand--- with a diminished sense of self & social isolation. What is grief if not love persevering? Grief is an experience so private and yet so universal---we borrow it in the hollow of our private losses and pass each other in the public square of human suffering. When the reconciliation does take place, we are left with the love we have lost---a lasting commitment.

(The author belongs to Karnataka Cadre, a prolific writer who happens to be the Chief Editor of 'Vana Vikas', a Quarterly)

*Disclaimer: The opinions expressed in VanaPremi are those of the authors. They do not purport to reflect the opinions or views of the Association of the Retired Forest Officers of Telangana and Andhra Pradesh or its members - Editor.*

**ANSWERS:** 1. Karnataka, 2. Lemon tree, 3. Nine, 4. Jaya Prakash Narayan Bird Sanctuary, 5. Gujarat's Kutch, 6. Central Indian Landscape, 7. Green Oscars, 8. Religious and other purposes, 9. Devonian (420-360 m.yrs), 10. Electrons, 11. Fungi, 12. Peregrine Falcons, 13. Peru, 14. Catfish, 15. Kangaroo Rat .

## Of Leopards and Hyenas:

# Wildlife in Ananthapur

Dr K.Tirupataiah, IFS ( Retd.)



Generally, Ananthapur is associated with drought, Groundnut, and factions, at least the northern part. The natural forest area is just about one per cent of the geographical area and it is known more for rich minerals than Wildlife. However, unknown and unseen to the public and officials at large, are quite a few species of wildlife. Leopards and Hyenas seemingly form the two extremes of the food chain.

### I. Leopards of Ananthapur

The office of the District Forest Officer Ananthapur has a full body skin Trophy of a Leopard displayed on the wall. It was quite intriguing how Leopards could be surviving in such harsh drought conditions. Doubt also crossed whether it was a trophy brought from somewhere. Very soon these doubts were dispelled.

### The (Royal) Rayadurg Leopards

Rayadurgam, a town abutting Karnataka on the North-West of Ananthapur was once the capital of the mighty Vijayanagara Empire. The fort is built on a hillock that has a large number of deep cave formations. Many times, one heard shepherds complaining that some of their sheep disappear all of a sudden. They felt that there might be some "Mekam" in the caves that took away their sheep.

The Wildlife census was on and as usual, Ananthapur was not a focus area. Up on requesting, the authority allowed us to do some fact-finding surveys. A couple of days of survey yielded evidence of not only adults but also the young ones. It was a very satisfying survey to get Ananthapur on to wildlife map of the then Andhra Pradesh.

### The Kalyandurg Leopard and the over-enthusiastic Police

One fine day a message was received that farmers near

a village in Kalyandurg found movement of a Leopard. They were threshing paddy and the ox tied about there was attacked by the Leopard. Message also reached local Police. By the time forest team could reach the spot, an over-enthusiastic police SI shot at the Leopard and killed it. Now the issue became murkier. Not only the compensation issue for the ox but a more serious issue of shooting a Leopard was to be addressed. The first part was easier of the two to be tackled. The second part took a long procedural route and required coordination between Forest and Police departments at the highest level.

Many more incidences of Leopards being spotted right in the Ananthapur town (in the Police Training center) were also recorded.

### II. The Hyenas of Ananthapur

At the other end of the food chain are the Hyenas and they led the scavenger party. It was a habit in rural villages to lay cots out in front of their houses and sleep out at night. All family members, including children slept outside. There were large number of complaints about attacks of Hyenas in and around villages of Kalyandurg on the Western side of the district which is drier compared to the Eastern part. Children were a special target for the Hyenas because of their low weight and ease of dragging away. Hyenas, though look timid were reported to be very ferocious when in sight of a possible prey. It required great courage and strength to thwart their attempts at stealing children.

### The Hyena (Protection)Plan:

There was a scheme to take measures to prevent Hyena attacks in villages. It included, among other things,

- Electrification of villages in a phased manner,

- Encouraging families to sleep inside by home electrification (so that fans could be put and make sleeping inside home easy),
- Forming night patrol parties among volunteers from villages,
- Setting campfires where providing electricity would take time,
- Removal of Prosopis bushes around habitation,
- Ensuring children are not made to sleep outside,
- Quick compensation in odd cases of attack.

It was a coordinated effort among forest, electricity, revenue, police, and other related departments. This campaign yielded good results. Number of attacks by

Hyenas and number of take aways drastically reduced.

Ananthapur is home to many large tanks that are spread over the whole district. These were beehives of activity for angulates. Among them most prominent were the Black buck and the Spotted Deer. Tank Foreshore plantations (which were done in almost all tanks) were a great place for their get-togethers. Particularly, on early evenings they put on great shows on a regular basis.

Experiences in Ananthapur opened up our minds about how wildlife (at both ends of food chain) are adapting to the ever-increasing drought conditions there and how it was important to take note of it and make efforts to protect them amidst increasing human-wildlife conflict.

*(The writer is retired PCCF, Telangana and currently working as Chief Consultant (Training) at Dr Marri Channa Reddy HRD Institute of Telangana, Hyderabad. Feedback-Mobile:8885532021 Email:kota\_86@rediffmail.com)*

## WELCOME TO WRITERS

**"If you would not be forgotten, as soon as you are dead or rotten,  
either write things worth reading or do something worth writing."**

**- Benjamin Franklin.**

*Please note that there are a lot of excellent, published authors in the world that did not start writing until they retired. But regardless of your age, you may have a great narrative. Some people write for the sheer joy of writing, and most just post the work online for the world to enjoy. You may be one among them; please check.*

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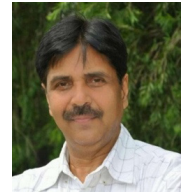
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**EDITOR, Vana Premi.**

*(Email: thayyab@gmail.com)*

## Kuno National Park Is Not Yet Ready For Cheetahs Introduction (Part -I)

Dr Uma Shanker Singh, IFS( R ), D.Sc.



### ABSTRACT:

Ecology is not fiction, and unlike the popular visual depiction of African cheetahs speeding across vast open grassland plains, in India, the Cheetah's habitat was diverse with scrubs, bushlands, arid and semi-arid open lands. As the cat was pushed back further, the last cheetahs found refuge in a niche habitat around the edges of Sal forests in east-central India until, one day, their tracks faded away forever from the country. The situation has worsened since then; let us admit it. Introducing cheetahs (*Acinonyx jubatus jubatus*) from Namibia is a decision taken in haste and political without considering its guild ecology. This action will not only distract our attention from the deteriorating forest ecosystem of the country but also from other pressing and critical conservation priorities. Five females and three males are boarding a chartered Boeing 747 cargo flight on 16<sup>th</sup> September 2022 from the Namibian capital of Windhoek and arriving at Jaipur airport the following day. This was decided earlier that Asiatic lions would be relocated to Kuno national park (KNP), but it was shelved, and the introduction of cheetahs was put on a fast wheel despite the Supreme Court's earlier decision against the introduction of Cheetah in KNP.

The 2013 SC order also states that "the decision taken by MoEF (Ministry of Environment and Forest) for the introduction of African cheetahs first to Kuno and then the Asiatic lion, is arbitrary, an illegal and clear violation of the statutory requirements provided under the Wildlife Protection Act. The order of MoEF to introduce African cheetahs into Kuno cannot stand in the eye of Law, and the same is quashed." Based on the field surveys, a report was published in 2010, which stated that cheetahs could potentially be introduced at Kuno-Palpur Wildlife Sanctuary in Madhya Pradesh, Shahgarh Landscape in Jaisalmer, and Nauradehi Wildlife Sanctuary in Madhya Pradesh. The Supreme

Court in January 2020 allowed the experimental introduction of cheetahs after further field research and under carefully controlled conditions. The government of India's stated objective of this project is "Establish viable cheetah meta-population in India that allows the cheetah to perform its functional role as a top predator and provides space for the expansion of the cheetah within its historical range, thereby contributing to its global conservation efforts." However, the stated goal will not be able to fulfil its desired goal on account of many ecological and social factors available in and around KNP and most likely may end up in cheetah safari like any other lion and tiger safari in the country. Another goal of this project is "to use the cheetah as a charismatic flagship and umbrella species to garner resources for restoring open forest and Savanna systems that will benefit biodiversity and ecosystem services from these ecosystems."

This goal is self-defeating in the sense that restoration of the open forest is extremely tough and cannot be done with a 0.67% average budgetary allocation in the forestry and wildlife sector for a very long. India has several charismatic and highly endangered species, for example, Caracal, Great Indian Bustard, Wolf, Lesser Florican and Blackbuck; denizens of open forest, Savanna and Grassland systems and the forest departments across the country have been failing badly in conserving these species and their habitats. The resources to be expended, estimated at Rs 40 crores for the first five years, for introducing African cheetahs could be better spent on our existing native species. Therefore, the initiative to get African cheetahs is neither science-based nor a national conservation priority. Unfortunately, this will significantly distract from higher priority conservation issues like the much-delayed lion translocation.

**KEYWORDS:** Kuno National Park, Asiatic Cheetah, forest compartments, Grassland, savannah, Woodland, Open forest, Southern tropical dry deciduous forest, Population viability analysis, Genetic variability.

### INTRODUCTION:

The word 'cheetah' is derived from the Sanskrit chitraka, which means 'spotted'. The earliest visual evidence of the Asiatic Cheetah, dating back to 2500 to 2300 BCE, is found in cave paintings in Kharvai and Khairabad, and in the upper Chambal valley, in Madhya Pradesh. In 1935, a supplement published by the Journal of Bombay Natural History Society indicated the Cheetah's erstwhile range: it roamed from Bengal to the United Provinces, Punjab and Rajputana, Central India to the Deccan. The Asiatic Cheetah is now only found in Iran and is an endangered species and is an endangered species. Cheetahs require a specific habitat that allows them to safely reproduce, hide, hunt, and seek shade to regulate body temperatures in hot climates and during warm seasons. Since cheetahs require a specific habitat to thrive in and cannot be as easily relocated as animals that can adjust to a variety of habitats, they often clash with humans and have become endangered in many areas.

The Kuno national park in Madhya Pradesh is not yet ready from the ecology point of view; therefore, without understanding the ecology of cheetah relocation, we are inviting a major catastrophe. The Cheetah was declared extinct in India in 1952. Since then, the grasslands of the country, of which the Cheetah was the keystone species, have also disappeared. The proponents of the project have stated that one of its aims is to revive the grassland ecosystem of India, but this may not be as simple as this has been stated. Kuno National Park has a very high density of leopards; some say 9 per 100 sq. km. In a fenced enclosure, the leopards may threaten the cheetahs and compete with them for prey, which seems very natural with the home advantages lying with the leopards. The fencing is 12 km long and 9ft high with eight compartments to house as many as 12 cheetahs in the first phase, and possibly this is done in order to stop leopards coming into the Cheetah's enclosures.

The leopards are to be collared to enable park authorities to monitor their movement and stop the inter-specific fight in the initial stages. Cheetahs are planned to be gender segregated in the first phase but will be kept in the adjoining compartments in order to develop a likeness for each other before setting them free in the open. The size of the compartment will range from 0.7 to 1.1 square km, and the entire area of 6 sq. km will be watched 24×7 through multiple high-resolution CCTV cameras.

### METHODOLOGY:

The methodology to assess the impact of ecology on the introduction of cheetahs in KNP was the perusal of scientific papers, reports on this animal and my own experience as Director Dudhwa National Park and as Director Lucknow zoo while translocating some wild animals.

### ECOLOGY OF THE KUNO NATIONAL PARK:

The Kuno national park is a hot place like any other place in northern India, and during April and May, the maximum summer temperature ranges between 38°C - 47.4°C and the minimum winter temperature from December to February ranges between 0.6°C - 12.4°C. The average annual rainfall is 760mm. According to the revised classification of forest types of India (Champion & Seth 1968), the main forest types found in this region are: Northern tropical dry deciduous forest, Southern tropical dry deciduous forest, *Anogeissus pendula* forest & scrub, *Boswellia* forest, *Butea* forest, Dry savannah forest & Grassland, Tropical riverine forest. The dominant tree species that occur in the division are *Acacia catechu* (Khair), *Anogeissus pendula* (Kardhai), *Boswellia serrata* (Salai), *Diospyros melanoxylon* (Tendu), *Butea monosperma* (Palash), *Anogeissus latifolia* (Dhok), *Acacia leucophlea* (Remja), *Zizyphus mauritiana* (Ber) and *Zizyphus xylopyrus* (Ghont). Prominent shrub species include *Grewia flavescens*, *Helicteres isora*, *Dodonaea viscosa*, *Vitex nigundo*. Some grass species found are *Heteropogon contortus*, *Apluda mutica*, *Aristida hystrix*, *Themeda quadrivalvis*, *Cenchrus ciliaris* and *Desmostachya bipinnata*. Commonly found weeds in this area include

*Cassia tora* and *Argemone mexicana*. The herbivores found in this area are *Axis axis* (Chital), *Rusa unicolor* (Sambar), *Boselaphus tragocamelus* (Nilgai), *Sus scrofa* (Wild pig), *Gazella bennettii* (Chinkara), *Tetracerus quadricornis* (Chousingha or Four-horned antelope), *Antelope cervicapra* (Blackbuck), *Semnopethicus dussumieri* (Southern plains gray langur), *Hystrix indica* (Indian crested porcupine) and *Lepus nigricollis* (Indian hare). Carnivores include the *Panthera pardus* (Leopard), *Ursus melursinus* (Sloth bear), *Hyaena hyaena* (Striped hyaena), *Canis lupus* (Gray wolf), *Canis aureus* (Golden jackal), *Vulpes bengalensis* (Indian fox) and *Mellivora capensis* (Ratel). Sometimes some tigers have been seen to be migrated from Ranthambhore Tiger Reserve. Based on a prey base survey by the WWI and WWF in Kuno wildlife sanctuary in 2013, chital is the most abundant prey with a density estimate of  $69.36 / \text{km}^2 \pm 10.51$ . The density estimates of sambar, nilgai, wild pig and chinkara are  $4.85 / \text{km}^2 \pm 1.19$ ,  $3.92 / \text{km}^2 \pm 0.97$ ,  $3.05 / \text{km}^2 \pm 0.78$  and  $0.86 / \text{km}^2 \pm 0.28$ , respectively. In yet another study by NTC, chital is the most abundant wild prey in KNP with a population density of 38.48 individuals per  $\text{km}^2$  and 51.58 animals per  $\text{km}^2$  for all potential cheetah prey species (Action Plan for Introduction of Cheetah in India, 2021)

### WHY THIS PROJECT IS LIKELY TO FAIL:

The Cheetah should not be brought to India if specific issues are not addressed on a scientific footing. The question of habitat is important as this has been seen with a historical skew toward protecting lush green forests in India. The Cheetah is a creature of drier, more neglected spaces, grasslands and thorn forests. Not looking mainly green nor with dense canopy cover, grasslands and thorn forests have been burnt, cleared, converted into industrial zones or decreed as wasted areas. Bringing the Cheetah to India should have a minimum requirement of setting up a grassland policy which has not been in place for long. Besides, many issues need careful study before launching the 'rewilding policy' in India. The status of forests in India is deplorable, the degradation of forest land is unstoppable, and despite massive plantation drives in

our country, the wasteland has been increasing at a rate of 0.57%; therefore, some of the issues have been flagged, which are not yet conducive for rewilding KNP with cheetahs.

### POPULATION VIABILITY ANALYSIS

A population viability analysis (PVA) is an extremely important computer simulation and simple mathematical model that tells us the interactions between different known factors in an ecosystem to assess the likelihood of a population becoming extinct in a specified time frame under a particular situation. The model input is stated to be given in annexure 4 of the action plan, but a perusal may indicate that genetic diversity has not been considered while finalising the PVA. Many unknown ecological factors become more important than the known factors during the extinction process of a species that is not endogenous but brought from a place with a different set of ecological conditions not yet known to us till today. The action plan document, 2021, says that the individual cheetah population with a carrying capacity of over 25 individuals has a higher chance of persistence over the long term with appropriate augmentation and management. This further reveals that managing different site populations as a meta-population enhanced their chances for long-term survival and maintaining genetic diversity. There are many studies which reveal that cheetahs are genetically weak stock. In a study on the Genomic legacy of the African Cheetah, *Acinonyx jubatus* this has been found that as a species, this animal shows a dramatic reduction in overall genetic variation revealed by multiple genomic markers, including an ability to accept reciprocal skin grafts from unrelated cheetahs. Their genetic depletion correlates with elevated juvenile mortality, extreme abnormalities in sperm development, difficulties until recently in achieving sustainable captive breeding, and increased vulnerability to infectious disease outbreaks etc. (P. Dobrynin et al. 2015). The project area of 748  $\text{km}^2$  within the NP is stated to be almost free of human settlements, and twenty-four villages which were within the national park were relocated outside the boundaries of the Protected Area in 1998 (Kabra 2009) therefore, man-animal conflict is

bound to take place if not today then in time to come. The action plan also states that the national park has an approximate population of 500 feral cattle, which the villagers leave behind during their course of relocation to outside the boundaries of the National Park, and this further reveals that the population of 500 feral cattle may form a prey base for the Cheetah without understanding that they may act as multiple foci for various forms of infections as is happening in Gir national park leading to deaths in lions. Therefore, all the predictions may fail once a condition of an unknown nature sets in the cheetah population and wipes out the entire population in no time.

The Action plan does not seem to be actionable in the true sense because this states that the cheetah population is expected to reach the “carrying capacity level in about 15 years” in Kuno and that it would take further 30-40 years, depending on the survival of the Cheetah, recruitment and supplementation to reach the landscape-level carrying capacity of 36. The action plan is sceptical in itself and based on many presumptions. Any wild lifer will agree that even if every restorative measure works fine in the long term and regular imports continue from Africa, Kuno's cheetah population will still be far from viable on its own even after four decades. The other option may be interconnecting a smaller population of cheetahs, but that also requires physical connectivity that allows individual cheetahs to reach a neighbouring population. Still, the Action Plan does not consider such dispersal safe even around Kuno. The action plan clearly states that during the initial years of cheetah introduction (5–6 years) or population below 18-20 adult cheetahs, it may be prudent not to allow cheetahs to disperse into sink habitats of the landscape. Cheetah (s) would be captured and brought back to Kuno NP or translocated to other release sites if there are such instances. This would be proper to add that the cheetahs, which are to be brought in from Namibia, have a very narrow band of gene variability, and persistent inbreeding may further weaken it as it happened in the case of Rhinos in Dudhwa. A study was carried out in 1985 on the genetic variability of the African Cheetah, and this demonstrated that exposure

and spread of the coronavirus, which has very low morbidity in domestic cats (approximately 1%), has decimated a heretofore productive and healthy captive population of Cheetah (S. J. O'Brien et al. 1985). The introduction plan of Cheetah has been the brainchild of a former bureaucrat turned forester who has been advising Supreme Court without formal training in forestry and wildlife.

### **STUDY SHOWS CHEETAH GENETICALLY WEAK AMONGST CAT FAMILY:**

A study was carried out on the conservation Genetics of the Cheetah, and it has been observed that captive breeding of cheetahs has not been very successful. When the breeding was attempted between 1950 and 1980, it was found that they bred very poorly - rarely exceeding more than a 15% success rate. Cheetah males displayed a 10-fold reduction in sperm count plus an elevated incidence of malformed spermatozoa (~70–75% of sperm in any males had super large heads, tiny heads, coiled or bent tails, indicators of sterility in other Felidae species). Part of the reproductive impairments was likely the relative lack of overall genome variability in cheetahs sampled from zoos and wild populations from southern and eastern Africa. Cheetahs displayed 90–99% less overall diversity than other cats and most other mammals based on early surveys of nuclear allozymes, 2DE skin fibroblast proteins, and RFLP diversity in the major histocompatibility complex (MHC) (O'Brien et al. 2017). Let us understand the behavioural aspects of cheetahs. Female cheetahs live solitarily with their cubs; male cubs form lifelong coalitions. In low densities, cheetahs' home ranges cover over 1500 km<sup>2</sup>, requiring large landscapes with prey. Although cheetahs lack genetic diversity from a historic population bottleneck, their most significant conservation problems are humans. Habitat loss and declining prey base lead to conflict with livestock farmers. Additionally, illegal wildlife trafficking of cubs is affecting small populations in the Horn of Africa. Solving the cheetah conservation crisis is critical and involves addressing a complex web of social, environmental and economic issues, and depends on a holistic approach balancing the needs of humans and cheetahs sharing

the land. Research into conserving and restoring habitat for cheetahs includes training, using Livestock Guarding Dogs and other conflict mitigation strategies, addressing habitat loss, dismantling the illegal pet trade, encouraging coexistence, etc.

### **KUNO NATIONAL PARK IS NOT READY FOR CHEETAH ECOLOGICALLY:**

The project in question can never be called a re-introduction of the cheetah, as the action plan states, but this is an introduction project since it involves an alien species, namely the African cheetah. A study on the mitochondrial DNA of Indian cheetahs and African cheetahs has been quite conclusive. A study of 139 base pairs (bp) of mitochondrial DNA (mt DNA) has led us to believe that the Indian cheetah was part of the Asiatic subspecies (*Acinonyx jubatus venaticus*). The Indian and Southeast African (*Acinonyx jubatus jubatus*) cheetah mt DNA diverged approximately 72 kya. The ecosystem of Kuno National Park (KNP) is quite different to that of the African grassland where cheetahs are found abundantly. The KNP does not have a suitable habitat nor the right kind of prey for cheetahs to survive on; therefore, it is not possible to see long-term viability. Even when forcefully introduced, they (introduced cheetahs) need management intervention in every single step for survival, which is impossible. If we examine the habitat and ecosystem of Koriya in present-day Chhattisgarh, where India's last cheetah was killed in 1952, it had a very specific habitat type. It mainly was grassland and scrub forests, with enough prey base. This was the typical habitat for the cheetah. African cheetahs, on the other hand, live in shrublands and savannahs. The last surviving Asiatic cheetahs in the world are restricted to the deserts of eastern Iran. The introduction of the cheetah is a misplaced priority today; on the contrary, we should focus on restoring the ecosystem and stopping the fragmentation of tiger habitats so that the forest capital is intact. When cheetahs are unlikely to achieve a self-sustaining population, how will they help save other species and habitats? All the ecological functions claimed as

benefits from introducing cheetahs from Africa could be met by translocating lions from Gujarat. Unfortunately, this could not be possible on account of politics. This would be pertinent to know that the plan to secure the Asiatic lion as a backup population in Kuno has been hanging fire since 1993. In April 2013, the Supreme Court shot down the cheetah project and set a six-month deadline for shifting a few lions from the isolated population in Gujarat's Gir national park. As Gujarat held on to its lions, the Centre revived the cheetah plan in 2017. Finally, in 2020, the Supreme Court gave the green signal for the move, but only "on an experimental basis". Kuno was never seen as a prospective home for cheetahs. It was being managed to receive Asiatic lions.

There is a difference between the habitat required by cheetahs and Asiatic lions, and today this will be much safer to conclude that KNP is not ready ecologically at the moment to accept the cheetah. Most grasslands, especially in central India, are 'cultural', which has been done with heavy inputs. Still, in KNP, the farmlands included in this were never looked at as the prospective grasslands. Over a period of time, these farmlands were covered with woodland species such as *Ziziphus nummularia* or Jhar Beri, *Acacia leucophloea* or Reonj and *Dichrostachys sinerea* or Birbira. These farms are now woodlands. These plants are not palatable.

Similarly, grass species such as *Desmostachya bipinnate* or Kusha grass, which are not palatable, have also taken over the *Dichanthium annulatum*, a palatable grass species. This is not yet examined at all as to what may happen with the translocation of the cheetahs in terms of disease spread in local animals because several zoonotic infections have been reported to have originated in Africa and reportedly spread to other parts of the world. The carriers were mostly mammals such as bats and primates. It is too early to say what will come this time. But it is proper to have enough research database before cheetahs are brought in.

**(To be continued)**

*(The writer is a former PCCF, UP and a prolific writer. He is currently guiding many PhD students from Ranchi university. Feedback: mobile:9450877777 and email: umashankar.87@gmail.com)*



## Story of a Tiger Skin

**M. Ram Mohan**

A tiger skin was seized in Bejjur Range of Kaghaznagar Division in 2016. The seizure was done after a long period of surveillance, pursuance, and meticulous planning. The ill-fated tiger was poisoned to death in neighbouring Maharashtra, investigation revealed. After producing the accused along with the Tiger skin, the skin was kept with the Forest Section Officer, who was the custodian of the seizures made in the case. He kept it in a room under lock and key in a residential quarters in Forest complex which is just a furlong distance from the Range Office in Bejjur. A few months later, a Forest Beat Officer of the Range shifted into the that quarters along with his family. Later, after a brief period, the quarters were kept vacant for some time, as the Beat Officer's family left Bejjur, since he was placed under suspension.

One fine morning, the FSO came to Office and said that he visited the quarters and inspected the room where he kept the skin and further speaking nervously with trembling voice said that he found the skin missing which made me perturbed for a while. It was like a bolt from blue. On hearing the news, I rushed to the spot and inspected the room. The latch of the door was damaged which showed that the skin was stolen. All the house and its surroundings were searched but in vain. Immediately, I asked the Section Officer to summon the Forest Beat Officer who occupied the quarters earlier.

The staff went to the native place of the Beat Officer. His wife and parents were inquired about the missing skin who pleaded innocence. The suspended Beat Officer and all the family members were summoned to the Range Office and subsequently to the Division Office and were asked and even offered immunity, reward to provide information regarding the tiger skin, in case they were aware any details. Wife of the Beat Officer, who was placed under suspension, was asked

to tell the truth, if she were aware of whereabouts of the missing skin and was offered reinstatement of her husband into the job in addition to dropping of further action for the criminal act, if any. All the staff including watchers, even the transferred staff members, were also summoned and inquired about the missing skin. All the quarters were searched intensively without yielding any results.

The issue of missing of skin became a mystery. Reputation of everyone involved in seizure of skin and knowing about it was suspected. History of old misdeeds of the staff and other suspects was being dug in the backdrop of missing skin. Integrity of even the honest people was under scanner. The news of missing Tiger skin became a sensation. Media, barring a national newspaper and a news channel, made a series of stories of varied nature in different perspectives, of course proved unfounded later, on the incident. The officers concerned were issued memos and the officer in whose custody the skin was given was suspended. It was a field day for rumour mongers. Vivid stories of rumours were afloat, including that of most disgusting, humiliating, ridiculous in nature.

After exhausting all the ways and means, a complaint was lodged with the police. A few weeks of time lapsed. The case was pursued with Police constantly. On one evening, received a phone call from the sub-inspector saying that the tiger skin was recovered by the police. It was a very big news and greatest relief for many indeed. The next day, I visited the police station and found the skin in the custody of police and compared it with the old pictures and measurements and found that the skin matched with the old one. The limbs' part of the skin was chopped, and a few nails were seen missing.

Quite surprised to know that the accused in the case of missing tiger skin was the wife of the forest beat officer. She along with her brother who visited her and stayed at Bejjur for some time, hatched a plan to steal the Tiger Skin and executed it. They smuggled it away to a town and tried to sell it through middlemen. She spilled the beans when interrogated by the police. Fortunately, the skin could be recovered thanks to the efforts of the Police and the forest officers breathed a sigh of relief. Had it not been recovered, needle of suspicion would

have ever been pointing towards the innocent and would have been haunting lifelong, despite no-wrong doing on their part. The entire episode was published in vernaculars and national media. Surprised to see the news of recovery of skin published in a national newspaper in its Delhi edition. Bejjur and Forest Officers of Bejjur and Tiger skin came to be known to many people earning 'reputation', albeit infamy this time, in the tiger skin missing and recovery episode than when the tiger skin was seized facing many a hurdle!.

(The author is Forest Range Officer, Telangana and currently working as Asst. Director, Telangana State Forest Academy, Dulapally, Hyderabad and can be contacted over mobile: +919849333055 and email: rammohanm.16@gmail.com)

*Most think the 'past equals the future.'*  
*Decision is the ultimate power. – Tony Robbins*



## Birthday Greetings



**We wish the following born on the dates mentioned**

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| 2.    | O. Subramanyam        | 08-10-1945 | 2.                 | C.P. Vinod Kumar             | 21-10-1963 |
| 3.    | U. Govind Rao         | 08-10-1953 | 3.                 | Lokesh Jaiswal               | 22-10-1963 |
| 4.    | R.K. Rao              | 20-10-1935 | 4.                 | Y. Madhusudan Reddy          | 04-11-1963 |
| 5.    | V. Ranga Rao          | 20-10-1945 | 5.                 | P. Krishnamachary            | 07-10-1964 |
| 6.    | N. Venkatramnarsaiah  | 20-10-1954 | 6.                 | M. Ashok Kumar               | 13-10-1965 |
| 7.    | C. Subba Rao          | 24-10-1943 | 7.                 | R.D. Venkateshwarlu          | 13-10-1960 |
| 8.    | B.M. Swamy Das        | 24-10-1954 | 8.                 | D. Sudhakar Reddy            | 14-10-1966 |
| 9.    | Dr. G. Narsaiah       | 24-10-1957 | 9.                 | G.A.P. Prasuna               | 21-10-1979 |
| 10.   | K. Murali Krishna Rao | 29-10-1940 | 10.                | K. Appala Narasiha Chary     | 03-11-1961 |
| 11.   | D. Nagabhushanam      | 05-11-1955 | <b>- SECRETARY</b> |                              |            |

**Any Omissions and Commissions in the Names / Dates may kindly be informed to the Editor over WhatsApp or Email.**



## LEGAL NOTES

### Siddangouda Shivabasanagouda Ayyangouda Vs. Principal 'Accountant General (A & E)

- K. Buchi Ram Reddy, IFS (Retd.)

This is yet another case of increase in pension on commencement or completion of certain age. This is the third in the series after the judgments of Andhra Pradesh High Court, Guahati High Court (as confirmed by the Supreme Court) and the present case by Karnataka High Court.

The petitioner called in question, the communication dated 3.1.2014 issued by the second respondent and has sought for writ of mandamus directing the second respondent to extend the benefit of 20% additional quantum of pension from 13.4.2013 as per the government order.

The petitioner retired from service on 30.4.1992. As per the GO, he is entitled to receive 20% additional quantum of pension from 80-85yrs. Petitioner completed, 79th year on 13.4.2013. His 80th year starts from 13.4.2013. Therefore, he feels that he is entitled to the benefit of GO from 13.4.2013. The petitioner represented to extend the benefit. But the second respondent issued the letter on 3.1.2014, whereby his petition was rejected by saying that he completed 80yrs on 13.4.2014 and therefore a request will be considered after that date.

The petitioner's counsel as well as the government advocate submitted their arguments. The court felt that there is sufficient force in the submission of the petitioner. The court held that the benefit had to be extended from first day of 80th year and not from the first day of 81st year.

The court finally held that the petitioner is entitled to 20% additional quantum of pension from the first day of 80th year that is 13.4.2013. Therefore, the impugned communication cannot be sustained in law. The writ petition is allowed, and the impugned communication dated 3.1.2014 is quashed. The respondents are directed to pay 20% additional quantum of pension from the first day of 80th year with 6% interest per annum.



D. Nagabhushanam, IFS.,(Retd.)



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**Photo: K. Praveen Rao, IFS (Retd.)**

***Kishanpur Wildlife Sanctuary, Dudhwa National Park***

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