

ISSN: 2584-2633

VANA PREMI



Nav Se Navvey Saal Tak Ke Bachhon Ka Saathi

Life Time Subscription - Rs.7500/-

Published Since 1994

Single Copy Rs. 75/-

Vol.27

MARCH - 2026

No.03

Vanapremi Wishes its readers
a very Happy International
Women's Day, Lent, Holi, Ugadi,
Gudipadwa, Ramzan and
Ramanavami

**Sakura-Its Spring time & a time for
Renewal and a new beginning & hope**

Photo credit: P.S.Somasekhar, IFS (Retd)

JOURNAL OF THE ASSOCIATION OF RETIRED FOREST OFFICERS, TELANGANA & ANDHRA PRADESH
www.vanapremi.com



TELANGANA FOREST DEVELOPMENT CORPORATION Ltd



- ❖ A wholly-owned, financially robust State Government enterprise, engaged in the large-scale establishment of plantations to meet the demands of the wood-based industries.
- ❖ A watershed approach has been adopted for the development of plantations, ensuring ecological sustainability, social acceptance, and commercial viability, with the long-term objective of enhancing the site quality of plantation areas.
- ❖ A major cultivator of Eucalyptus clonal plantations and Bamboo, covering a substantial area of 32,951.39 hectares. The operations are certified by the Forest Stewardship Council Forest Management / Chain of Custody (FSC FM/COC).



- ❖ The TGFDC has undertaken the ambitious task of developing Eco-Tourism activities within the State. Existing attractions open to the public include the Botanical Garden, Vruksha Parichaya Kshetram, Virtual Wildlife Safari and Pala Pitta Cycling Park in Kondapur, the Mahavir Nischalvan Eco-Tourism Centre in Vanasthalipuram, Aranya at the Shameerpet Deer Park, and Mrugavani at the Chilkur National Park. These initiatives are proving to be highly appealing, resulting in a growing influx of visitors.
- ❖ The TGFDC has also developed urban parks at Lalgadi Malakpet (Vanadrushyam), Thumkunta (Veduru Vanam), Gowdelli (Chandanavanam), and within the Chilkur Reserve Forest (Forestrek Park).
- ❖ The TGFDC has introduced new commercial species within the Regional Ring Road region, including Seethaphal, Sandalwood, Red Sandalwood, Rosewood, Teak, and *Casuarina Junghuhniana*, among others.
- ❖ Corporate Social Responsibility (CSR) Initiatives 2021–2025: Empowering lives through the distribution of three-wheeler scooters to the differently-abled, support to schools with sports kits and furniture, and establishment of modern pre-fab health sub-centers — driving inclusive growth with care, commitment, and compassion.
- ❖ Eco-Tourism projects have been launched at various locations under the brand name of “Deccan Woods & Trails”.

Smt. Sunita M. Bhagwat, IFS

Addl. Principal Chief Conservator of Forests
Vice Chairman & Managing Director (FAC)
Telangana Forest Development Corporation Ltd.,
(A Government of Telangana Undertaking)

An English monthly on forestry, wildlife, environmental issues, and topics of general interest that blends in-depth knowledge with engaging content for all age groups.

Editor : Dr. Kota Tirupataiah

THE ASSOCIATION OF RETIRED FOREST OFFICERS
Telangana & Andhra Pradesh (Regd. No.557/1990)

President : Sri P.K. Jha, IFS(R)

Mobile: 98499 04774

Vice President: Sri G. Krishna Murthy

Mobile: 88977 28528

Secretary : Sri B.M. Swami Das

Mobile: 90008 17781

Jt. Secretary : Sri A. Shankaran

Mobile: 94940 19595

Treasurer : Sri M.J. Akbar, IFS(R)

Mobile: 94408 10006

Executive Committee Members

1. **Dr. Kota Tirupataiah**, IFS(R), 88855 32021
2. **Sri J.S.N. Murthy**, IFS (R), 9494993939
2. **Sri M.A. Waheed**, IFS(R), 80080 79190
3. **Sri D. Nagabhusanam**, IFS(R), 80965 11200
4. **Sri A.V. Govindarajulu**, 75697 54843
5. **Sri V.V. Hari Prasad**, 78936 73767
6. **Sri G. Raman Goud**, 93914 99119
7. **Sri A. Kishan**, 99633 21321

Permanent Invitees

1. **Sri K. Buchiram Reddy**, IFS(R), 96660 97788
2. **Sri J.V. Sharma**, IFS(R), 94413 19151
3. **Sri Qamar Mohammed Khan**, 98492 33624

Editorial Board

1. **President: Ex-Officio President of Assn.,**
2. **Editor / : Dr. Kota Tirupataiah**, IFS(R)
Convenor Tel: 88855 32021
e-mail: tirupataiah.tsfa@gmail.com
3. **Associate Editor: D.Nagabhusanam**, IFS(R)
Mobile: 80965 11200

MEMBERS

4. **Sri V.V. Hari Prasad**, 78936 73767
5. **Sri K. Pradeep**, 98481 78693
6. **Dr N.V. Jayanth Babu**, 94402 66618
7. **Sri. B.M. Swami Dass**, Ex-officio Secy. of Assn.

The opinions expressed in Vana Premi are those of the author. They do not purport to reflect the opinions or the views of the Association of the Retired Forest Officers of Telangana and Andhra Pradesh.

Please consult the Associate Editor.

CONTENTS

1.	Editorial	4
	Dr. Kota Tirupataiah	
2.	Amid Global Adversaries, Union Budget pushes for Growth and Environment ...	5
	Sri.B.K.Singh, IFS (Retd)	
3.	Productive Plantations is not Industrialization of Forests.....	8
	Sri.R.K.Sapra, IFS (Retd)	
4.	When Forests Become Factories A Policy at Cross-Purposes	10
	Dr. Padam Parkash Bhojvaid, IFS (Retd)	
5.	Causes to overbalance Climate Extremes so as to turn over the race against time! -	11
	Dr. R.R. Desai, IFS (Retd)	
6.	Forestry in India-Transformative changes for CCA	14
	Dr. D. Nalini Mohan, IFS (Retd)	
7.	My Experience in Raising a Tree Plantation	17
	Sri. A. Purushotham Reddy	
8.	6th Alumni Meet at Hyderabad	18
	Sri V. Santhasheela Babu	
9.	Survival in the Wild: Field Wisdom and Life-Saving Practices.....	22
	Sri. R. Hemanth Kumar, IFS (Retd)	
10.	Forests in Western Ghats of Karnataka.....	35
	Sri. B.MT. Rajeev, IFS (Retd)	
11.	The Ganga-its riverine wetland Biodiversity.....	39
	Dr.H.S.Gupata, IFS (Retd)	
12.	Reintroduction of cheetah in India.....	42
	Sri.V.V.Hariprasad, Dy.CF (Retd)	
13.	Green News.....	46
14.	Pilgrims Progress and Wildlife Woes Caught up between faith and forest.....	47
	Sri.B.Vijaya Kumar, IFS	
15.	Do we really need Kukrail Safari?.....	48
	Dr. Uma Shanker Singh, IFS (etd)	
16.	Toucans of Costa Rica.....	53
	Sri K.Praveen Rao, IFS (Retd)	
17.	Birthday Greetings.....	54
18.	Role of Forester in Present Legal Scenario - A Legal and Disciplinary Perspective	55
	Dr.A.Kishan, IFS (Retd)	
19.	Green Quiz.....	57
	Dr.K.Tirupataiah	
20.	Legal Notes	58
	Sri.K.Buchiram Reddy	
		Total Pages 60



From the Editor's Desk...

Dear readers of Vanapremi, Namaste,

What a rich tapestry of festivals March is going to present! The season of fasting started with Shivratri last month with the start of Lent and Ramzan fastings soon following. March would present the vibrancy of the spring with Holi (4th), Ugadi&Gudipadwa (19th), Ramzan (19/20th) and Ramnavami (26/27th). Spring is also a time for 'renewal and hope' leading to the re-emergence of life. Enjoy all the festivals and educate your grandchildren about the significance of the spring and the festivals.

The International Women's day is observed on 8th March. It is time to take stock of the progress made by women and the difficulties they continue face in their quest for equality and equal opportunity. While women representation across fields, including Forestry, has seen significant jump in the last decade or so, their representation at higher decision making levels is still scarce. Hope the policy-makers, the men at home continue to support the cause of women empowerment through the year 2026.

Albert Einstein's birthday is celebrated as the Pi day (14th march). Scientific community owes a great deal for this extraordinary scientist whose contributions can be felt in every walk of life. Consumer Rights (15th March) forums have emerged as strong platforms for people to represent their grievances. I hope a time will come soon when the "Environmental rights" are as widely recognized and platforms for seeking environmental justice become as much accessible to common people.

This month's Vanapremi covers general topics of current interest like Climate change and adaptation to it, Need to save Western Ghats, Corporate/Commercial plantations and their implications to forestry, Union Budget and allocations for environment, among others.

As usual, Wildlife subject attracts a relatively wider attention and coverage in the March issue also. Human-Wildlife conflict is often seen as an issue between general public and wildlife. This view ignores the perils faced by the foresters on duty. A comprehensive article on the "field wisdom and life-saving practices' would serve well for field foresters. Articles on the gains and lessons from re-introduction of Cheetah, the Gangetic Dolphins, Toucans of Costa Rica, the conflict between faith (shiva devotees) and wildlife/forests during Shivratri, etc bring out both conceptual issues and practical aspects.

Alumni meets are always times for rejoicing. Sixth annual meet of the Alumni of 1968-70 SFRC brings out sweet memories and strong bonding that has been maturing with time.

Legal aspects are fast emerging as one of the challenges to the foresters in discharging their duties. Role of foresters in this emerging scenario is explained succinctly in an article. Legal Notes this time focuses on the case pertaining to the sacred groves in Rajasthan. Green Quiz and cartoon continue their journey.

The 111th General Body Meeting (GBM) of the Association of the retired forest officers would be held on 8th March 2026 in AranyaBhavan, Hyderabad from 10.30 am onwards. All members are requested to make it convenient to attend it along with their spouses.

Dr.K. Tirupataiah, IFS (Retd)

Editor

Happy Reading.....



AMID GLOBAL ADVERSARIES, UNION BUDGET PUSHES FOR GROWTH AND ENVIRONMENT

B.K.Singh

Amidst global uncertainties and geo-political tensions causing supply chain constraints and trade disruptions, the budget presented by India's Finance Minister Smt. Nirmala Seetaraman has maintained the fiscal discipline and boldly increased the capex from 11.2 trillion rupees last year 2025-26 to 12.2 trillion rupees for 2026-27. A high powered committee, "Education to Employment and Enterprise" is proposed to be set up for focusing on services sector as core driver of economic development that will track the growth and even move to amend the government policies if the circumstances demand. A push for AI is also evident as a tax holiday till 2047 has been announced for foreign companies using data centers in India to provide global cloud services.

In a period of macroeconomic stability, the reforms like custom clean up, further liberalization of trade regime, non-tariff barriers such as quality control orders etc., should have been addressed in this budget. Nevertheless, it is not compulsory to do these reforms in the budget, it can be done at any time of the year.

Apart from generous tax holiday on data centers till 2047, a five-year tax holiday to foreign companies supplying capital goods and equipment encourages them to relocate in India for manufacturing supply chains. On the issue of providing adjustment in budget for Trump's tariff, in the post budget press conference, FM said, "It is something that occupies the minds of the officials when we are preparing the budget but I will not attribute it to the cause for any one step. Across the board we kept that in mind."

India has recently signed a free trade deal with EU. The carbon border adjustment mechanism (CBAM) of EU compels developing nations like India to either meet the standard or pay the additional tariff. Such barriers should be levied on developed countries, as India is one of the lowest per capita emitters of greenhouse gases in the atmosphere. Further, EU's nominal per capita GDP in 2025 was \$46000, while India's was \$2800. European Commission has confirmed that India EU FTA does not provide any exemption from CBAM. Union budget has considered this aspect and proposed an outlay of Rs 20,000 crores for scaling up 'Carbon Capture Utilization and Storage' (CCUS). It has been done with a view to stay green, yet competitive in export market. CCUS scheme is applicable for across five industrial sectors – power, steel, cement, refineries and chemicals.

This move to decarbonize under CCUS program is in sync with the country's target of achieving net zero by 2070. The storage component under the scheme is understood as processes that separate carbon dioxide generated in an industry using fossil fuel as the source of energy. The carbon dioxide so separated is compressed, transported and injected into depleted oil reservoirs or any geological structure having space. The technologies are available to utilize the compressed carbon dioxide to produce consumer goods like carbonating beverages. Carbon dioxide is used as refrigerant, in fire extinguishers, to blow coal, foam rubber and plastics, inflate life rafts and life jackets, promote plant growth in greenhouses, immobilize animals before slaughter etc. Morten Meldal one of the three Chemistry Nobel laureates

of 2022 visited India recently and explained how we are one reaction away from developing to use carbon dioxide as fuel. 2025 Nobel Prize in Chemistry has been awarded for the development of Metal-organic frame works, which are porous and crystalline materials designed to trap or store molecules, offering ground breaking solutions for carbon capture, hydrogen storage and water harvesting from desert air.

In an another clear solution to decarbonize the economy, the budget proposes for setting up dedicated rare earth corridors to promote mining, processing, research and manufacturing in mineral rich states namely Odisha, Andhra Pradesh, Tamil Nadu and Kerala. Rare earths are critical for India's semiconductor push, a vital component in electronic devices. The alloy of Neodymium, iron and boron forms magnets that can withstand 280-degree Celsius temperature and has variety of usages in all emerging technologies like drones, robots, missiles, aerospace, defense equipment, electric vehicles, semiconductors, computers, mobiles, wind turbines etc. Dysprosium, sometimes can replace neodymium in the magnet. These magnets are 12 times as powerful as ferrite magnets used for quaint defacement in household fridge. Its use in drone, robot and other equipment is essential for increasing the torque and speed, that enhances precision and efficiency. Samarium cobalt magnet are eight times as powerful.

The rare earths and semiconductor chips are the most critical items in global supply chain. The budget has also given a push to renewable energy sector. The basic custom duty exemption on import of goods needed for nuclear power projects, manufacturing lithium-ion cells for storage of energy, sodium antimonite used in solar glass and equipment for processing critical minerals have been extended. In response to Paris climate accord 2015, India has committed a target for

generating 500 Giga Watt of electricity using non-fossil fuel sources, by 2030. In 2025, Union government has also passed a law "Sustainable harnessing and advancement of nuclear energy for transforming India", which has opened the sector for private participation and the government has set a goal of reaching a generation capacity of 100 Giga Watt of nuclear energy by 2047. The announcement in the budget helps pushing the country towards the goal.

The budget has also pushed manufacturing from its current share of 13% in the economy to 25% by announcing a budget of Rs. 10,000 crores for five years for manufacturing of containers, tunnel boring equipment, high capacity lifts, and firefighting equipment. Tunnel boring machine is highly useful in Metro construction as well as high altitude roads. We have been depending on China for this and the progress of our works had slowed down for a few months last year, when China halted the export. Tunnel boring helps in preserving vegetation on the surface of the earth, and thus minimizes the carbon footprint. It can push the development without much environmental damage.

It is also announced in the budget that the share of cargo transport by coastal shipping will be increased from current 6% to 12% by 2047 by boosting inland waterways. FM added that the government will operationalize 20 inland waterways including national waterway-5 through river Mahanadi, which will connect mineral rich Talcher and Angul to industrial centers like Kalinganagar, Paradeep and Dharma port in Odisha. We have to burn substantial quantity of fossil fuel to generate energy for transport of minerals by roads and rails. Transporting cargo through inland waterways minimizes emission of greenhouse gases and leaves smaller carbon footprint.

The budget has indicated a push for urbanization. The capex will be made available for developing roads and other infrastructures to new urban centers. Today Delhi NCR and other metropolitan cities encounter heavy pollution in winters due to smog generated by energy sources from fossil fuels, vehicular transport, dust, burning of wood, stubble and coal etc. The only long term solution for winter pollution is to relocate fossil fuel based industries to more than 400 km away from metropolitan cities. Opening of new urban centers is the need of the hour.

Finance Minister has also to be complimented for announcing India's strengthened global commitment for big cat conservation and hosting the first ever Global Big Cat Summit in India this year. Delegates from 95 range countries along with leading conservation organizations and partners will strengthen collaboration. Tiger, lion, leopard, jaguar, snow leopard, cheetah, and puma are seven big cats, whose conservation helps biodiversity and habitat protection, thus making the forests more climate resilient.

Author is a former Head of Forest Force, Karnataka and teaches "Economics" in Karnataka Forest Academy



- D. Nagabhushanam, IFS (R)



Productive Plantations Is Not Industrialisation of Forests

R. K. Sapra

Recent criticism of the Ministry of Environment, Forest and Climate Change (MoEFCC)'s January 2026 circular permitting assisted plantations on forest land has triggered concerns that India is moving towards the "industrialisation" of forests. A closer reading, however, shows a carefully regulated reform aimed at restoring degraded forest lands, strengthening domestic wood security and improving rural livelihoods. The circular builds on the Consolidated Forest Conservation Guidelines by allowing states to undertake assisted natural regeneration and plantations in collaboration with plantation companies, large farmers and wood-based industry (WBI). These projects must follow approved Working Plans and remain under the strict supervision of State Forest Departments (SFDs). Importantly, the plantations are classified as forestry activities, ensuring that forest land retains its legal status, ecological safeguards and regulatory oversight.

India's forests have historically been managed to serve production, protection and ecological functions simultaneously. The belief that productive plantations undermine conservation is misleading. Production working circles have long coexisted with protection and regeneration zones. Regulated plantations of teak, sal, conifers, bamboo and fuelwood species have historically been raised within forests through silvicultural operations. Production-oriented plantations on forest land are not new. Forest Development Corporations (FDC), established in 1980s, were allocated 1.1 million hectares for production forestry. These initiatives did not create systemic environmental or legal risks,

weakening present alarmist projections. Instead, the new policy seeks to revive scientific forestry after prolonged regulatory rigidity left large forest tracts degraded and understocked. Ecological safeguards remain integral to the initiative. Selection of degraded areas, species choice, planting density, rotation cycles and harvesting limits will continue to be regulated through approved Working Plans. Each project will require a Detailed Project Report specifying area, species composition, silvicultural practices and sustainable harvesting parameters.

Concerns regarding dilution of community rights under the Forest Rights Act are also misplaced. The circular does not override statutory protections, and recognised rights remain subject to established consultative procedures. Well-designed plantation programmes can generate employment, stabilise incomes and enable revenue-sharing mechanisms determined by states, thereby strengthening rural livelihoods. Opposition to assisted regeneration in scrub and open forests often overlooks ecological realities. Many such landscapes suffer from invasive species, soil compaction, fire damage and chronic grazing pressure. Treating degraded forests as ecologically identical to intact ecosystems undermines restoration efforts. Experience shows that plantations raised by FDCs have improved canopy cover from 30–40% to 80–90%, enhancing soil moisture retention, biodiversity recovery and site productivity. Forest degradation has also been driven by chronic financial constraints that restrict prescribed silvicultural operations. Carefully regulated private participation

can mobilise investment, reduce fiscal pressure on state agencies and improve plantation outcomes without compromising regulatory control.

Agricultural lands, meanwhile, must remain primarily devoted to food and energy crops, particularly when climate variability is already affecting yields. Agroforestry is often presented as the sole solution to India's wood demand, but it faces structural limitations including fragmented land-holdings, farmer risk, long gestation periods and volatile market conditions. Indian wood-based industries currently procure farm-grown wood at roughly \$200 per bone dry metric tonne (BDMT), whereas comparable supplies in Southeast Asia cost about \$100 per BDMT. This disparity encourages imports, leads to foreign exchange outflow and threatens employment in domestic wood-processing industries. Production plantations on degraded forest lands can stabilise raw material supply without discouraging agroforestry. Instead, they can strengthen industrial viability and sustain market demand for farm-grown timber.

Concerns about corporate capture overlook governance safeguards. Ownership and regulatory authority over forest land remain firmly with SFDs,

while private participation is contractual and subject to strict supervision. States retain discretion over revenue-sharing frameworks, potentially strengthening private public participation (PPP) models. Managed plantations also deliver climate benefits by rapidly sequestering carbon, rebuilding soil organic matter and reducing harvesting pressure on natural forests. Modern forestry increasingly recognises forests as renewable biological infrastructure capable of delivering ecological services, livelihood support, carbon storage and industrial raw material simultaneously.

Degraded forests cannot remain static preservation spaces. The real danger lies not in forests becoming productive landscapes, but in their continued degradation while India remains heavily dependent on timber imports. Scientifically regulated productive forestry offers a balanced pathway that supports conservation, strengthens rural economies, reduces import dependence and reinforces long-term forest sustainability. Such reforms deserve informed debate grounded in evidence rather than apprehension. Strengthening sustainable forest governance through responsible scientific management is essential for securing India's ecological and economic future.

The writer is a retired officer of Indian Forest Service

Before you speak

Before you speak, reflect: "This verbal act I want to perform -would it lead to self-affliction, to the affliction of others; or to both? Is it an unskillful verbal act, with painful consequences, painful results?"

Gautama Buddha



When Forests Become Factories: A Policy at Cross - Purposes

Dr. Padam Parkash Bhojvaid

The Ministry of Environment, Forest and Climate Change's decision to permit industrial plantations on government forest land has been projected as a pragmatic response to India's growing demand for wood, pulp, and biomass. Proponents argue that such plantations will raise productivity, reduce imports, and ease pressure on natural forests. The argument sounds persuasive, even efficient. A closer examination, however, reveals serious ecological, legal, and social risks that warrant far deeper scrutiny than the policy currently receives.

India's forests are already under sustained stress from fragmentation, diversion for infrastructure and mining, and intensifying land-use competition. In this context, introducing corporate-managed industrial plantations into forest landscapes rests on a critical assumption: that intensively managed tree crops can substitute for natural forests. This assumption is fundamentally flawed. Forests are not merely sources of wood. They are complex ecological systems, repositories of biodiversity, livelihood spaces for millions, and cultural landscapes shaped over generations. Reducing them to production units misunderstands both their function and their value.

A related justification is that plantations would be confined to "degraded" or "scrub" forests, presumed to have limited ecological worth. This perception is misleading. Degradation is a managerial label, not an ecological verdict. Open forests, scrublands, and dry forest systems support distinct assemblages of flora and fauna adapted to harsh climatic and edaphic conditions. They play critical roles in soil stabilisation, groundwater recharge, carbon storage—particularly in soils—and landscape-level biodiversity maintenance. They also sustain pastoralists and forest-dependent

communities through grazing, fuelwood, and non-timber forest produce. Monoculture plantations, however efficiently managed, cannot replicate these ecological or social functions.

India's own experience offers cautionary lessons. Past plantation programmes, which were often justified in the name of "improvement" or productivity—have frequently simplified habitats, altered hydrology, and generated conflict with local communities. Reintroducing industrial-scale plantations into forest areas may result into repeating these mistakes under a new policy vocabulary.

India's forest governance framework has consistently resisted reducing forests to mere land-use categories. The Forest (Conservation) Act, 1980, reinforced through landmark Supreme Court judgments such as T.N. Godavarman Thirumulpad vs Union of India, established that forests are ecological entities deserving the highest level of protection, irrespective of ownership or canopy density. The Court's expansive interpretation of "forest" was intended precisely to prevent administrative reclassification from weakening conservation safeguards. Permitting industrial plantations on forest land raises serious legal and institutional concerns within this framework.

Commercial plantation forestry blurs the line between conservation and non-forest use, even when described as a forestry activity. Converting diverse forest ecosystems into monoculture production systems risks undermining the spirit of the law and setting a precedent where ecological integrity is subordinated to managerial intent and commercial demand.

Beyond law and ecology lies a political economy

Contd.. on page No.12



Tipping points and climate extremes:

Causes to overbalance Climate Extremes so as to turn-over the race against time!

“Crossing of the tipping points lead to extreme unpredictable weather-patterns and the collapse of ecosystems”

Dr B. Raghotham Rao Desai

Prologue:

Global temperatures having already risen by 1.1°C (approximately) above pre-industrial levels & extreme events being on the rise, **extreme heatwave days have surged by 54%** with their length growing by 45%, **putting immense strain on everything from human health (as also healths of wildlife & avifauna) to infrastructure:** temperatures exceeding 50°C in 2024 alone (in more than 10 countries) while other regions faced wetter-than-average conditions, leading to widespread flooding in parts of N. America, Africa, Southeast Asia, and Australia. These shifts are compounded by drier-than-normal conditions in parts of N. America, Asia, S. America, and Europe. It can thus be seen that **Climate Change is no longer a distant threat but a ‘lived reality’, with escalating consequences that derail development** and threaten the well-being of **unpredictability of extreme weather events—from heatwaves and floods to wildfires and droughts.** The looming threat of thresholds **beyond which changes in Earth’s climate, become irreversible** grows ever larger. As these risks intensify, **building resilience and promoting climate adaptation are more urgent than ever.**

Fact file:

Prolonged and intense droughts—particularly in regions already prone to water-scarcity—are exacerbating the crisis, while failing to capture the full extent of social & economic devastation: resulting in **over 2 million deaths and 4 trillion dollars-worth-of economic losses during the**

past 50 years! Worse still, in at least one of the next 5 years there is an 80% likelihood of a 1.5°C rise in annual average global temperature (temporarily though)---according to a new report by **World Meteorological Organisation (WMO)**, causing scientists concerned increasingly about the possibility of crossing critical tipping points in the Earth’s climate system: tipping points refer to a threshold beyond which changes in climate become self-perpetuating and potentially irreversible, leading to catastrophic consequences for ecosystems and weather patterns as also human & animal ‘societies’.

One of the tipping-points causing the most concern **is the potential collapse of the West Antarctica and Greenland ice sheets** which contain enough water to raise global sea-levels by several meters—there being growing evidence that parts of these ice sheets are already destabilising. **Another potential tipping point is the thawing of permafrost in the Arctic—containing vast amounts of Carbon in the form of Methane & CO₂, which can be released into the atmosphere, accelerating global warming (by 0.3°C) towards the end of this century.** Yet another tipping-point is the die-back of the Amazon rainforest---a vital carbon sink---absorbing millions of tons of CO₂ each year. The crossing of these tipping-points would lead to more extreme and unpredictable weather-patterns, greater sea-level-rise and the collapse of ecosystems, that billions rely on for food, water, and livelihoods.

Epilogue:

Given the escalating climate-extremes and the

looming-threat of tipping-points, building resilience and promoting climate-adaptation are no longer optional—they are essential. While reducing emissions is crucial, for slowing global warming: **the reality is that we are already locked into a certain amount of Climate Change due to past emissions**, which means that we must prepare for the impacts that are already here, and those that are likely to come.

It entails 'enhancing early-warning-systems', improving disaster-preparedness, and ensuring vulnerable populations to have access to the resources & available support, in the aftermath of disasters—building resilience, also involving the ability of communities to the existing infrastructure and ecosystems, and to withstand & recover from climate-shocks (which includes investing in climate-resilient infrastructures, (such as flood defenses, heat-resistant buildings, and drought resistant water systems).

The author is a retired IFS officer of Karnataka cadre and the Chief Editor of 'VanaVikas', a quarterly magazine of the retired forest officers of Karnataka. M-9886157158.

Continuation from page No.10

that the policy leaves largely unexamined. Industrial plantations primarily serve the raw material needs of wood-based industries, while the ecological costs and social disruptions are borne locally. Forest-dependent communities—already struggling for secure rights under the Forest Rights Act—stand to lose access, diversity, and resilience in landscapes reshaped for uniform production.

A policy that seeks to conserve forests by simplifying them into factories ultimately works at cross-purposes with India's constitutional, ecological, and social commitments. Addressing wood demand is necessary, but doing so by compromising forest integrity is neither prudent nor sustainable.

The author is a former PCCF (HoFF), Haryana. M-70879 56657

On the other hand, climate adaptation focuses on adjusting systems and behaviours to cope with the changing climate—**farmers can adopt climate-smart practices** (such as **crop diversification, water-efficient irrigation, and soil conservation techniques**). **In urban areas, cities can implement green infrastructure** (such as parks, wetlands, and green roofs) to reduce heat-island-effect and improve resilience to floods—importantly, **climate adaptation and resilience-building-efforts must be inclusive and equitable**. The escalating climate extremes and the threat of tipping points are a stark reminder of the urgency of the climate crisis. **We must act now with bold, decisive, and inclusive measures**, to build a sustainable and resilient future for all—**building resilience and promoting climate adaptation being essential to safeguard communities, ecosystems, and economies from the worst impacts of climate change**.

None of this is to deny India's legitimate need to address its growing wood and fibre deficit. But solutions exist that do not compromise forest integrity. Strengthening farm forestry on private and revenue lands, improving productivity on existing plantations outside forest areas, incentivising mixed-species agroforestry, and reducing inefficiencies and waste in wood use can collectively meet industrial demand. Several countries have expanded timber supply precisely by decoupling production forestry from natural forests. India's challenge is not a lack of land or trees, but a policy imagination that continues to look toward forests as the easiest answer to industrial shortfalls.

Notice for General Body Meeting

The 111th General Body Meeting of the Association of Retired Forest Officers of Telangana and Andhra Pradesh will be held on 8th March 2026 (Sunday) at 10:30 AM in the Conference Hall (6th floor), Aranya Bhavan, Hyderabad. All the members of the Association are requested to make it convenient to attend the meeting with their spouses.

- SECRETARY

A tree grew inside my head,
It grew inward,
Its roots are veins,
Its branches nerves,
Thoughts its confused foliage,

Your glances light it up,
And its fruits of shade
And oranges of blood, and
Pomegranates of fire,

Day breaks in the night of the body,
There within, inside my head, the tree speaks
Come closer, can you hear it?

-Octavio Paz, Mexican Diplomat (In India)and
Poet (He loved the Neem tree in his quarters in New Delhi as much as he loved the Fig
tree in his childhood home in Mexico).



Forestry in India: Transformative Changes for Climate Change Adaptation (Concluding part)

Dr. D. Nalini Mohan

India's forestry sector must undergo systemic reforms to withstand climate change. Integrating climate-resilient species, empowering communities, embedding adaptation indicators into policy, and leveraging technology for monitoring. All these are essential to restore biodiversity, livelihoods, and carbon neutrality goals.

Introduction

Forests in India are not only ecological assets but also cultural and economic lifelines. They regulate water cycles, store carbon, provide livelihoods to millions, and safeguard biodiversity. Yet, climate change threatens these functions through rising temperatures, erratic rainfall, prolonged droughts, and intensified forest fires. According to scientific studies about **45% of India's forested grids are projected to undergo ecological change by the end of the century**. This includes the altitudinal zonation of different types of forests may shift, species composition in different agroclimatic zones may undergo change, growth cycles of different organisms may be altered etc. This makes forestry reform central to India's climate resilience strategy.

Integration with Climate Policy

Current challenge: Forestry is often treated as an isolated sector. Though MoEF & CC is the nodal Ministry for implementing the national plans for climate change, often it is observed that the ministries/agencies work in silos. Inter-ministerial exchange of information and coordination are lacking leading to inefficient use of resources, duplication of efforts and delays in achieving the climate goals. Mainstreaming of forestry concerns is lacking.

Needed change: Integrated approach with the

coordination of different ministries and agencies involved in implementing climate change action plans is urgently required to achieve synergy and best outcomes. The strategy must include long term perspective plans with medium and short term sub plans required to attend to adaptation and mitigation measures for forest governance are required. Aligning forestry goals with India's commitments under the Paris Agreement and Sustainable Developmental Goals (SDGs) and dovetailing with India's Nationally Determined Contributions (NDCs) for emission cuts has to happen more intrinsically across the country with states on board. The use of recently agreed "Belém Adaptation Indicators" is recommended to measure resilience outcomes and secure global climate finance. Allocations and spending for forestry and climate goals must be increased many fold to prevent climate disaster in future. The government, corporates and small and medium scale enterprises and civil society have to understand that delays in implementing climate adaptation measures leads to cost escalation and more carbon footprints and additional burden on the nation and society. They must adopt sustainability goals holistically to ensure forestry contributes to India's carbon neutrality goal by 2070.

Biodiversity and Ecosystem Services

Current challenge: Overemphasis on carbon sequestration risks undermining biodiversity.

The governments and corporates are taking it for granted that the nature will make adjustments on its own for ensuring biodiversity and ecosystem services in spite of witnessing severe losses and diminishing quality of air, water and space resources and continue to promote development at the cost of ecosystem services and natural forests including their biodiversity wealth. The lack of realistic appreciation of ecological priorities and exigencies and their possible social and cultural impacts on the society, is a real concern.

Needed change: There is a need for pause, review, rethinking and repositioning of development goals and processes with ecological priorities and exigencies and their social and cultural impacts on the society. The impacts of ecological degradation and loss of biodiversity are far reaching than understood by the society especially the corporate and business groups who always demand more and more policy reliefs to reduce the project costs for developmental ventures. The country needs development to move from the present position to higher levels in the world, but the ecological and social costs that accompany must be assessed realistically and march ahead. India has lost scores of animal and plant species in the last few decades and many more species are threatened to become extinct. Prudent policy and legal framework has to be kept in position to assess the impacts of the developmental projects and prioritized carefully. All the stakeholders must keep in mind that sustained economic growth and development can happen only when ecological conservation is ensured. We have to protect the **wildlife corridors** to enable species migration and withstand the climate stress. The value of **ecosystem services**, such as water regulation, soil fertility, and pollination have to be realized and responsible development processes have to be put in place. We must also be aware of the threats to the ecosystems posed by the invasive species and prevent their spread

through stricter monitoring and control measures. A case in example: Karnataka's millet-growing villages integrate biodiversity conservation with climate-resilient agriculture.

Technology and Data Integration:

Current Challenge: Modern technology and data integration are essential either in governance of natural resources by the government or businesses by corporate bodies. Everyday innovations are throwing many new challenges and possibilities at the society. Tuning appropriately with the modern technological advances is mandatory to progress and achieve the sustainable developmental goals and national priorities. The government is rightly raising the awareness in this front, but much more needs to change to stay connected with the world realistically.

Needed change: Deployment of AI and GIS-based forest health monitoring and making corrective actions is necessary to maintain the scarce forest resources. The country cannot lose anymore forests for want of proper policies and their effective implementation. Strengthening of the forest departments all over the country with trained manpower and modern gadgets and technologies is imperative in the present day context for forests to be preserved for posterity. There is an inherent inter-generational and intra-generational responsibility to do this. Use of **dynamic vegetation models** to predict shifts and plan interventions is essential to prevent impacts of climate change. Forest department cannot achieve the national forestry goals in isolation. We must encourage **open data platforms** for transparency in forest governance. A comprehensive strategy has to be evolved for this.

Policy and Institutional Reforms

Current Challenges: The demands of the emerging scenarios due to loss of forests

exacerbated by climate change have to be assessed and addressed. There is no clarity on the future of joint forest management in which many groups of stakeholders take protection measures and share the usufructs from forests and forest rights Act in which only a few select groups get the rights to cultivate the forest land. There is not much thinking and work on forest disaster risk reduction in the country. There is no policy guidance on livelihoods issues of forest dependent communities while forest areas are degrading and being lost due to several factors.

Needed change: There is a need to align the forest policy and laws to suit the changing and emerging scenarios. There is need to assess the impact of change of geography and land use due to development planned or unplanned. The reality of an existing mine or project versus the original forest area present there and its impact on the native vegetation and wildlife which were damaged or disturbed has to be properly studied and factored into the sanctions accorded. There is need to minimize the damages and losses in practice rather than on paper. Similarly the fragmentation of the habitat causes confusion and continuity to movement and residence of wildlife due the developmental projects or agriculture practice accorded permission under Forest Rights Act. The government has to make it clear as regards the future of joint forest management policy implementation vis-a vis Forest Rights Act. **Implementation** of forest Acts and policies has to be improved by strengthening the implementation machinery. Proper integration of employment and income generation programmes with livelihoods needs of the local communities has to be done on priority to balance conservation with livelihoods. Integrate forestry into disaster risk reduction frameworks not only to reduce the forest fires and the damages caused by them, but also to improve

the overall resilience of ecosystems and society in general from natural calamities like cyclones and droughts. There is need to build **cross-sectoral collaborations** (agriculture, water, energy) for holistic resilience for resilience is a collective product.

Recent development: The **2026 Forest Conservation Guidelines** reclassify certain afforestation activities as "forestry," allowing broader participation while keeping oversight with state forest departments. The real intent and impact of these guidelines would depend on how these are understood and implemented.

Risks and Trade-offs: Carbon vs biodiversity: It is important that overemphasis and prioritization on carbon sinks may undermine the ecological and biological diversity. Over-prioritizing carbon sinks may undermine ecological diversity. Similarly **Community vs state control has to be redefined and refined** and empowering local governance requires balancing conservation with livelihood rights. The adoption of technology and predictive models must be increased and complemented by ground-level monitoring for immediate remedial action.

Path Forward: We may have to work to achieve the following to move forward effectively:

1. **National Mission on Climate-Resilient Forestry** – integrate adaptation, mitigation, and biodiversity.
2. **Capacity building** – train forest staff and communities in adaptive practices.
3. **Funding mechanisms** – leverage global climate finance using adaptation indicators.
4. **Public engagement** – expand awareness through schools, podcasts, and corporate partnerships.

Contd.. on page No.21



MY EXPERIMENT AND EXPERIENCE IN RAISING TREE PLANTATIONS

Purushotham Reddy Akavaram

SUBABUL

I am a middle class farmer belonging to the village PeddaMadoor, DevaruppulaMandal in Jangaon district. My only occupation is farming by growing paddy crop in wet land and some cash crops like cotton, Mirchi, sunflower etc. in dry land. The land is black cotton soil – locally called 'Regadi'. Growing cash crops requires constant attention like plant protection and being labor intensive, is expensive. Therefore, I got an idea of raising tree crop in a small extent of four acres about twelve years ago. The choice of species was Subabul. There was no one around to give me professional advice. It was my own trial- and error- method, I followed.

For preparing the site for planting the seedlings, I ploughed the area by means of a tractor. Then, I obtained bag-plats from a Government nursery and planted them at an espacement of 8'x8' in small pits. I realized that space between line-to-line should be at least 10' as that would be ideal for the movement of the tractor for soil working and weeding.

After five years, I thought of harvesting the crop. I found a customer who is only a middle- man to purchase the produce from me and supply the wood to some industrial establishments. He agreed to do the job of felling and billeting. The price offered is by weight and is determined at a Weigh-Bridge. The yield was 30 tonnes per acre and the price offered was Rs. 1,200.00 per tonne..

After harvesting the first crop, the stumps started

showing up coppice shoots and their growth was faster. A light thinning helped the growth. The crop was ready for harvesting in three years. I followed the same method to dispose of the produce. The offer this time was Rs.3,000.00 per tonne and the yield was 20 tonnes.

There was no demand for the Subabul wood in the market. I waited for seven years and disposed of the produce, subject to the same conditions and I got Rs. 1,700/- per tonne. The total amount I received was Rs. 3,40,000/-

After waiting for four years, I found there is a spurt in the market for Subabul and there is an offer to purchase my produce at Rs.4,800/- per tonne and the total yield was 100 tonnes and the offer was Rs.4,800/- per tonne. I got a sum of Rs. 4,80,000/-

My experience in growing Subabul plantation is cost-effective.

MALABAR VEPA or MALABAR NEEM

There was a craze for growing Malabar Vepa. I purchased 350 bag-plants at a cost of Rs.10,000/- and planted them at an espacement of 12' X 12' in an area of 1.50 acres. Ploughing was done 4 times in between the lines, which cost me Rs. 10,000/- The yield was about 18 tonnes and I got by sale of the wood a sum of Rs. 4,500 per tonne for 18 tonnes.

Note:- This is the English version of my narration in Telugu. I'am accessible on Ph.89190 92175.



6th Alumni Meet of S.F.R.C. 1968-70 batch 10th to 13th February, 2026 at Hyderabad

V. SANTHASEELA BABU

The 6th Alumni Meet of SFRC 1968-70 Batch was held from 10th to 13th February 2026 in Hotel Best Western Ashoka, Lakdikapul at Hyderabad. The 1st Alumni meet was held at Coimbatore commemorating the 50 years of our entry in to SFRC on 1st November 2018 as Golden Jubilee meet which was organized by me. The second one was held at Indore, Madhya Pradesh, arranged by our Madhya Pradesh counterparts. The third meet at Thiruvananthapuram was organized by our Kerala Batch mates. The fourth meet was held by me at Visakhapatnam and the fifth one by our Maharashtra batch mates at Pune. While at Pune in the Valedictory function, there was a discussion about the venue of our next reunion meet. Then Mr. Qamar Mohammad Khan of our batch, who lives at Hyderabad, had voluntarily expressed his willingness to arrange at Hyderabad.

During the month of September 2025, an exclusive WhatsApp group of 6th Alumni Meet of SFRC 1968-70 batch- Hyderabad was formed and the correspondence for the meet was started. Hotel Best Western Ashoka, Lakdikapul was identified as the venue of our meet and the meeting was fixed from 10th to 13th February-2026. Altogether 20 of our batch mates, who are from the states of Madhya Pradesh, Maharashtra, Telangana, Andhra Pradesh, Tamilnadu, Karnataka and Kerala opted to join the meet, some along with their families bringing the total participants to 32. All the male participants are between 77 yrs to 86 years of age. The following were the programmes that were organized in those days.

DAY-1 (10-02-2026): This day participants started coming from various places to the hotel from 9 AM onwards and they were being accommodated in their respective rooms reserved for them and by evening all the participants reached there comfortably. My wife Mrs. Bhagya Lakshmi presented all the lady members with sarees and welcomed them. By 5-30 PM the inaugural function started in the meeting hall and all of us were filled with joy to notice our old friends and exchanged pleasantries and enquired about the wellbeing of each other. As per the old tradition of our past reunion meets all of us were in our SFRC dress i.e; white shirt tucked in white/grey coloured pant and with our college Tie. All the ladies were in the sarees presented by my wife with pink blouses. In his address Mr. Qamar Mohammed Khan welcomed all the batch mates and explained about the development of Hyderabad and the important places located here. A 'Swagath Mala' comprising of the Hyderabad pearls was adorned to all participants and a memento of Charminar was presented. Mrs. Asima Khan W/o Mr. QM Khan has presented bangles and a Mothi Haar along with a Velvet bag (Batwa) stitched personally by her to all the lady participants. Mrs. Anita Thakrey W/o Mr. Anil Thakrey from Maharashtra presented a lady's hand bag to the lady participants. Mrs. Neetha Patil W/o Mr. NA Patil from Maharashtra gifted a ladies Purse to all lady participants. Mrs. Lakshmi Tathode W/o Mr Gopal Tathode from Maharashtra presented a shawl on her behalf to the lady participants.

Subsequently, in my speech I took all my friends

to our good olden days in SFRC and remembered all our Instructors name by name who moulded us from raw boys to responsible Forest Officers. Also made them to remember our day-to-day activities and Tours in the Forest College and at the same time thanking our ladies who stood by our side and looked after our families while we were busy in attending to our rigorous official duties. Some of our batch mates also spoke on the occasion and all of us explained about the status of our children.

As the meeting concluded, my wife Mrs. Bhagya Lakshmi conducted certain games of entertainment and picked up the winners of 1st, 2nd and 3rd prizes. Thambola game was steered and prizes were announced. After the conduct of games some of the participants joined for the "Happy Hours" and all of us had dinner and retired for the day.

DAY-2 (11-02-2026): Today after a sumptuous Buffet breakfast, all of us assembled in the premises of the hotel by 9-30 AM and got into a bus that was arranged for our sightseeing. Firstly, we were taken to a 3D Film show near Golconda Fort in which we were shown the origin and development of Hyderabad city and about the rulers of Hyderabad along with the history of Golconda Fort. Then we came to Purana Haveli Palace where Nizam's Museum is located.

H.E.H. The Nizam's Museum: In the heart of the old city of Hyderabad, a fascinating collection of articles presented to the Seventh Nizam of Hyderabad, Mir Osman Ali Khan are on display. The location of the museum is in Purani Haveli Palace an erstwhile residence of Nizam the VI. The core of the museum is a rich collection of souvenirs, gifts, mementoes and models presented to the seventh Nizam on the occasion of the Silver Jubilee celebrations in 1937 and later. The exhibits are like Pearl studded Scent Bottle, Silver Model

of MouzzamJahi Market, Gold Burnished Wooden Throne used for the Silver Jubilee Celebration in 1937, Silver Tree Ithardhan depicting a theme from the life of Lord Krishna, Museum Building, Gold Model of Jubilee Pavillion, BidriHuqqa, Bidar of early 20th Century, Silver Model of High Court Building, Silver Model of Arts College Building, Osmania University, Ivory walking stick fitted with Basra Pearl shaped as a lady, Ivory Casket from the Maharaja of Mysore-1937, Silver Ghava (Coffee) cups studded with Diamonds, Silver Filigree Elephant with Mahout, Gold Tiffin Box inlaid with Diamonds, Stained glass embedded with Diamonds and Gems depicting the portrait of HEH Mir Osman Ali Khan- Nizam the VII in Durbar Robe and finally the longest wooden ward robe of Mir Mehboob Ali Khan the Nizam-VI (1866-1911) made of the finest Teak wood imported from Burma. There is also a manual wooden lift.

From there while returning, enroute, we visited the Charminar, Secretariat, and Hussain Sagar and other places of importance at Hyderabad. Reached our hotel and had lunch and rest for a while. We met again at 6-00 PM in the meeting hall and Games were conducted to the participants picking up 1st, 2nd and 3rd prize winners in each game. Thambola game was conducted and prizes were announced for the winners. After finishing the games, people who were interested participated in "Happy Hours" and all of us had dinner and retired for the day.

DAY-3 (12-02-2026): Today we assembled in the hotel premises and set out in the bus for our 2nd day visit. The programme for this day was planned in the "Botanical Garden" maintained by the TGFDC in Kothaguda RF.

Hyderabad Botanical Garden- Kothaguda: The botanical garden aims at providing the facility of a modern botanical paradise to conserve and

develop the germ plasm and to educate the people. The garden is spread over 274 acres (1.1 km²) of undulating land and has 19 sectors or 'Vanams'. The first phase is open to the public, with the completion of five sections. The sections include medicinal plants, timber trees, fruit trees, ornamental plants, aquatic plants, bamboos and so on. The park is designed to have large water bodies, rolling meadows, natural forests, rich grasslands and exquisite rock formations.

This is a unique place with about 2000 species of Biodiversity. The area falls in Kothaguda RF and mainly comprises of Palapitta Cycling Park, Virtual Safari, Recreational area and the Botanical Garden.

The Botanical Garden: Kothaguda RF with an area of 274 Acres is being maintained by TGFDC for developing a nature park and a retreat for the benefits of people of Hyderabad and named as a Botanical garden.

Theme Parks: The area is raised with the theme parks such as: 10 Medicinal gardens, 7 Phyto feature gardens, 9. Conceptual gardens, 4 Mythological gardens, 16 Product utility gardens, 7 Eco systems, 2 Kingdoms.

A. The Medicinal gardens consist of

1). Cosmetic garden (Sundara Vanam) 2). Culinary tree garden (Vantinti Vanam) 3). Tree Medicinal garden (Oushadha Vanam) 4). Tree Spice garden (Sugandha Vriksha Vanam) 5). Herbal Tea garden (Theneeti Vanam) 6). Pan garden (Thamalapaku Vanam) 7). Snake repellent garden (Sarpa Vikarshanavanam) 8). Mosquito repellent garden (Domala Vikarshanavanam) 9). Herbal medicinal garden (Moolikavanam) and 10). Vitamin garden.

B. The Phyto Feature gardens comprise of 11). Tuber garden (Dumpalavanam)

12). Ficarium garden 13). Climber garden (Lathavanam) 14). Succulent plant garden (Jemuduvanam) 15). Variegated leaf garden 16). Bamboo setum (Veduruvanam) and 17). Palmatum (Tallavanam)

C. Conceptual gardens contain

18). A to Z Garden (Alphabets garden)

19). Surnames garden 20). Akshara Vrukshalu (Aksharavanam) 21). Rainbow garden (Indra Dhanussuvanam) 22). Trees of Telangana 23). State Tree garden 24). Butterfly garden 25). Indicator garden and 26). State Flower garden.

D. Mythological gardens include

27). Vinayakavanam 28). Bathukammavanam

29). Saptharishivanam and 30). Dhvajasthambavanam

E. Product Utility Gardens involve

31). Leaf plate garden (Bhojanapatravanam) 32). Pencil and Rubber garden 33). Fibre tree garden 34). Tree Dyes garden (Rangulavanam) 35). Sports Wood tree garden (Kridavanam) 36). Musical tree garden (Sangeethavanam) 37). Toy Tree garden (Bommalavanam) 38). Energy Trees garden (Indhanavanam) 39). Paper Tree garden (Kaghazvanam) 40). Green manure Trees garden 41). Lac Tree garden 42). Tanin Tree garden 43). Boat and Ship garden 44). Gum Tree garden (Jiguruvanam) 45). Edible forest fruit garden and 46). Fragrance garden

F. Ecosystems have the themes like

47). Grasslands Ecosystem 48). Desert Ecosystem 49). Deciduous Forest Ecosystem 50). Evergreen Forest Ecosystem 51). Mangrove Ecosystem 52). Aquatic Eco system and 53). Yadadri Vanam on Miyawaki Principles.

G. Kingdoms themes are with 54). Evolution of

Plant Kingdom and 55). Animal Kingdom.

The Forest types are with the themes of 1). Cassia Forest 2).Rosewood Forest 3).Albizzia Forest 4).Mahuva Forest 5).Terminalia Forest 6).Bijasal Forest 7).Boswellia Forest 8).Givotia Forest 9).Butea Forest 10).Bamboo Forest 11).Kadamba Forest 12).Babul Forest 13).Aegle Forest 14). Syzygium Forest 15).Anogeissus Forest 16). Hardwickia Forest 17).Redsanders Forest and 18).Teak Forest.

In addition, there are Navagraha Vanam, Nakshatra Vanam, Rasi Vanam, Nature class room, Environmental Education Centre and an AV Hall, Lotus Ponds, Bamboo house, Acupressure Zone, Butterfly garden, Elephant Zone, Conservation Zone, Adventure Zone, Orchids and Ferns, Children Play Area etc; are also developed.

After field visits, we came to the Virtual Wildlife Safari area and had the experience of 9D Cinema "Feel the Thrill" which all of us felt quite adventurous. We were taken to high-octane adventures with moving seats, wind, water

splashes and more. We underwent the feeling of journey in roller coasters, ocean depths, volcanic escapes, Jurassic forests, space travel etc. which we can never forget during our life time.

From there we returned to our place of stay. After having lunch Mrs & Mr. QM Khan took some of the batch mates and families for purchasing the Hyderabad Pearls and all of them expressed their happiness and thanked them for guiding them in the purchases. By evening 6 PM we assembled in the meeting hall and attended the valedictory function. All the participants expressed their happiness and thanked the organizers for having conducted the meet so nicely and comfortably. Prize distribution was held for the winners in various games organized by us. All of us had dinner and bade goodbye to each other and retired for the day.

Day- 4 (13-02-2026): Today after breakfast, right from morning 9 AM, the participants started leaving to their places of residence and each of them bade goodbye to each other with warm hugs and shake hands and left Hyderabad with sweet memories of our reunion carrying along with them.

(The author is a retired DFO from undivided Andhra Pradesh state, can be contacted on e-mailvssbabu@gmail.com and mobile:8019722292.)

Contd.. From page No.16

Conclusion

India's forestry must evolve from a **carbon-centric, top-down model** to a **resilient, community-driven, biodiversity-focused system**. By embedding indigenous wisdom, modern technology, and adaptive governance, India can safeguard its forests against climate change while ensuring

ecological and cultural continuity. The reforms outlined—spanning afforestation, governance, fire management, biodiversity, technology, and policy—are not optional but essential for India's climate future.

The author is a Former Principal Chief Conservator of Forest, Andhra Pradesh and can be reached at dnmohanifs87@gmail.com and Mobile 9440810003



Survival in the Wild: Field Wisdom and Life-Saving Practices of Indian Forest Officers Against Wild Animal Attacks

R. Hemanth Kumar



Photo Credit: info.dtvup6hm7b6cr.amplifyapp.com

On 24th July 2022, together with the Indian Forest Service community, I mourned the loss of Jasbin Salker Aind through a post on the Delhi IFS Group. His passing—following that of Manikandan and many others before him—was not just a personal tragedy but a stark reminder of the systemic risks frontline forest protectors face daily across India.

In that reflection, I stressed the urgent need to train forest officers and staff in survival skills to safeguard themselves against dangerous wildlife. Tales of escape must not remain mere anecdotes; they should be transformed into living lessons and integrated into the core curriculum of forest training. The experiences of seasoned officers are invaluable and must be shared to enhance safety.

Tragically, the brutal killings of our frontline staff by rampaging wild animals continue unabated. In just the past six months, we have lost:

- Kalimuthu, Forest Beat Officer, Mulli Forest, Palakkad (Kerala) – killed by an elephant during tiger census duty.
- Sanna Haida, Anti-poaching camp staff, Bandipur (Karnataka) – killed by a tiger while patrolling.
- Anil Kumar, Forest Watcher, Ponnambalamedu Forest, Pathanamthitta (Kerala) – killed by a tiger while collecting forest produce.
- Dilip Konwar, Forest Guard, Chamdora village, Nagaon (Assam) – trampled by an elephant during patrol.

These incidents must raise an alarm among us. They are not isolated tragedies but part of a pattern of systemic vulnerability.

It is this painful reality that compelled me to write about the basic survival skills that must be taught to our staff. These skills are not optional—they are essential for ensuring that those who dedicate their lives to protecting India's forests and wildlife can return safely to their families.

The Context of Sacrifice

Forest staff operate under conditions of extreme hardship. Their duties demand vigilance against poachers, encroachers, and increasingly, direct encounters with dangerous wildlife. Despite their courage and commitment, fatalities continue to occur year after year. Each death underscores the inadequacy of current training and preparedness frameworks

in equipping staff to survive and respond effectively to life-threatening situations.

The Case for Revamping Training

The ultimate sacrifice of Jasbin and others compels us to revisit the training architecture of forest departments. Traditional modules often emphasize administrative procedures, basic patrolling, and legal enforcement. However, the realities of fieldwork demand specialized survival skills, situational awareness, and adaptive strategies for wildlife encounters.

Key Gaps Identified

- Limited exposure to real-life case studies of survival and conflict management.
- Insufficient simulation-based training for high-risk wildlife encounters.
- Weak institutional mechanisms for experience-sharing across states and reserves.
- Psychological preparedness often overlooked, leaving staff vulnerable to panic or trauma.

Harnessing Experience-Sharing as Policy
India has a wealth of frontline wisdom embodied in the lived experiences of forest guards and officers who have survived extraordinary encounters:

- Dimbeswar Das, Earth Hero Awardee, honoured for his exemplary service in Kaziranga.
- Sudha Dhurve, who stared down a tiger for an astonishing 90 minutes in Satpura Tiger Reserve.
- Mintu Bora, Kaziranga's "Google Map," renowned for surviving multiple wild encounters.

- Suresh, who recalls how his colleague Dhanna's snoring tragically attracted a leopard.

- Mr. Mandol, a staff member in the Sunderbans, whose courage and presence of mind saved him in a harrowing conflict situation: after manoeuvring a captured tiger into a cage, the door slammed shut with him trapped inside. In those tense moments, he held the tiger tight in a desperate embrace, "a hug of death", until his companions managed to pull him free. He later credited his survival to both his own resolve and the protective grace of Bonobibi, the local forest deity.

These narratives are not mere anecdotes. They are living repositories of survival strategies, forged in the crucible of frontline experience. Institutionalising their dissemination, through structured lectures, workshops, and digital archives, can transform them into practical learning modules for staff nationwide.

By embedding these lessons into training curricula, we ensure that the courage, presence of mind, and tactical wisdom of our colleagues do not fade into memory but become tools of survival for generations of forest protectors to come.

Now, the essay is as follows:

Survival in the Wild: Field Wisdom and Life-Saving Practices of Indian Forest Officers Against Wild Animal Attacks

Introduction

Indian Forest Officers and frontline forest staff operate in landscapes where human vulnerability and wildlife power intersect daily. India, with barely 2.4% of the world's land area, harbours nearly 8% of global biodiversity. Forest

officers patrol tiger reserves, elephant corridors, mangroves, alpine forests, and grasslands not as visitors but as custodians—often on foot, at night, and under adverse conditions. Unlike tourists or researchers, they cannot avoid risky terrain or postpone work due to animal presence. Consequently, encounters with wild animals are an occupational reality.

Veteran forest officers repeatedly emphasise that survival in forests is not a matter of bravery or weapons, but of understanding animal behaviour and respecting ecological space. Fateh Singh Rathore, IFS, who spent decades in Ranthambore, succinctly captured this ethos when he observed that the forest is not inherently hostile; it becomes dangerous only when humans forget that they are intruders. Over decades, Indian forest officers have developed a body of practical survival wisdom—often described informally as “tricks”—that has saved innumerable lives. These practices are grounded not in folklore, but in close observation, repeated encounters, and hard-earned experience.

Why Wild Animals Attack:

Common triggers include:

- Sudden encounters in dense vegetation
- Presence of young or injured animals
- Human panic or running
- Poor visibility and silence

Thus, forest officers focus primarily on preventing surprise rather than confronting animals.

Core Survival Principles to be Followed by Forest Officers

Across India, specific unwritten rules

guide forest staff:

- Never move silently in dense forest
- Never patrol alone in high-risk areas
- Always read wind direction
- Observe birds and herbivore alarm calls
- Use terrain intelligently
- Control fear and avoid panic

Survival Practices

Forest officers reduce risk by:

- Making intermittent noise to announce presence
- Avoiding turning their back
- Facing the animal during encounters
- Slowly backing away while speaking calmly

Why Wild Animals Attack: A Field Perspective

A critical insight shared by almost all senior forest officers is that most wild animals do not deliberately attack humans. Kailash Sankhala, IFS, the first Director of Project Tiger, repeatedly noted during the early 1970s that tigers do not hunt humans; attacks are usually reactions to surprise, fear, or provocation. His experience across Kanha, Bandhavgarh, and Melghat showed that silent movement through dense forests was a significant trigger for aggressive encounters.

From a field perspective, attacks generally arise from five causes: sudden surprise encounters, defence of young, territorial reactions, poor visibility, and human panic. Recognising this, forest officers focus less on confrontation and more on preventing surprise, which remains the most effective form of defence.

Core Survival Principles Followed by Forest Officers:

Across India's forests, a set of unwritten but widely respected principles guides frontline staff. Officers are trained never to patrol alone in high-risk areas, never to move silently in dense vegetation, and always to remain aware of wind direction. Reading alarm calls of birds and herbivores is considered as crucial as reading maps.

R.K. Singh, IFS, former PCCF of Madhya Pradesh, often reminded trainees that panic is more dangerous than the animal itself. These principles form the foundation for species-specific survival strategies.

Tigers and Leopards: Surviving the Ambush Predators:

Tigers and leopards represent the archetypal forest threat—silent, powerful, and capable of ambush. Their attacks are usually from behind, after prolonged stalking. This understanding shaped the field practices of officers like Fateh Singh Rathore in Ranthambore during the 1970s–1990s, a period marked by low tiger densities and intense territorial behaviour.

Rathore's repeated close encounters with tigers during foot patrols reinforced a critical lesson: panic converts a human into prey. By standing his ground, maintaining a calm posture, and avoiding sudden retreat, he observed that tigers often reassessed and withdrew. This behaviour-based approach echoed Sankhala's earlier insistence on announcing human presence through deliberate noise, talking, coughing, or tapping sticks, especially in tall grass and

dense forest.

In the Sundarbans, where tigers adapted to mangrove terrain and frequent human presence, forest guards innovated by wearing human face masks on the back of their heads. As DrS.P. Yadav, IFS, DG IBCA, later explained, this practice emerged not from laboratories but from guards who understood that tigers hesitate to attack prey that appears to be watching. Though only temporarily effective, it demonstrated the power of behavioural insight over force.

Elephants: The Most Lethal Wildlife Threat:

Statistically and operationally, elephants pose the greatest threat to forest personnel in India. Ajay Desai, who worked extensively in elephant landscapes of Karnataka and the Northeast from the 1980s onwards, observed that elephants usually detect humans long before humans detect them, primarily through smell.

Desai's field experience emphasised humility as the first survival tool in elephant country. Forest officers are trained to read signs such as breaking branches, rumbling sounds, and sudden forest silence. Above all, they are taught never to place themselves between a herd and calves.

A defining illustration comes from the Bandipur–Mudumalai corridor around 2008–2012, when P. Chandra Kumar, IFS, faced a sudden tusker charge during night patrol. Instead of allowing his team to run instinctively along the forest track, he ordered them to scatter diagonally downhill. The elephant abandoned the chase shortly thereafter. This incident

reinforced a core lesson now taught in training academies: escape behaviour must be trained, not improvised.

Sloth Bears: When Stillness Saves Lives:

Sloth bears present a unique danger because their attacks are sudden, close-range, and often directed at the face. During the 1990s and 2000s, S.S. Negi, IFS, while serving as Director of IGNFA, compiled wildlife attack records and analysed dozens of bear attack cases from Madhya Pradesh and Chhattisgarh.

A clear pattern emerged. Victims who resisted or fought suffered devastating facial injuries, whereas those who fell flat, protected the face and neck, and remained motionless often survived. This finding fundamentally shaped sloth bear training protocols. Officers are now explicitly trained to counter their instinct to fight back, recognising that with sloth bears, stillness often ends the attack.

Rhinoceros: The Territorial Charger:

In Assam and North Bengal, the one-horned rhinoceros is among the most feared animals encountered by forest staff. During his tenure as Field Director of Kaziranga National Park between 2014 and 2018, Jatindra Sarma, IFS, supervised patrols through elephant grass that often reached heights of three metres or more.

Rhino encounters in such terrain leave little reaction time. Patrol teams that survived charges consistently relied on zig-zag movement and terrain features such as termite mounds. Sarma frequently reminded staff that a rhino does not threaten; it decides and charges. Thus, terrain literacy becomes the primary survival skill in rhino landscapes.

Wild Buffalo and Gaur: Underestimated Dangers:

Wild buffaloes and gaurs are often underestimated because they are herbivores. M.K. Ranjitsinh, IAS, whose career spanned multiple states from the 1970s to 1990s, repeatedly cautioned that herbivores can be as dangerous as carnivores.

Field experience shows that gaur and wild buffalo charge suddenly when threatened. Forest officers respond by taking cover behind large tree trunks, keeping the trunk between themselves and the animal, and retreating slowly rather than running. Patience, not speed, is the defining survival trait in such encounters.

Crocodiles: Danger at the Water's Edge:

In mangrove and riverine forests such as Bhitarkanika in Odisha, crocodiles pose a constant, invisible threat. B.K. Singh, IFS, observed during the 2000s and 2010s that most fatal incidents occurred when staff approached water alone or during dawn and dusk.

As a result, strict water protocols were institutionalised: a minimum of two people near water, total avoidance of riverbanks at twilight, and constant vigilance. In rare attack situations, officers are trained to target the eyes or snout and move sideways rather than pulling straight back.

Snakes: The Silent Occupational Hazard:

Snakebite remains one of the most underreported risks faced by forest staff. Preventive measures, gumboots, probing sticks, and careful inspection of resting spots, are emphasised across training academies. Post-bite protocols stress

immobilisation and rapid evacuation rather than traditional remedies.

As one senior officer remarked during training discussions, the snake one does not see is often more dangerous than the tiger one does.

Psychological Preparedness and Team Discipline:

Across species and landscapes, one factor consistently determines survival: mental control. Officers like Fateh Singh Rathore and Kailash Sankhala repeatedly stressed that courage in forests lies not in defeating animals but in controlling fear. Team discipline, obedience to senior commands, and trust in experience frequently separate survival from tragedy.

Institutionalising Field Wisdom:

Despite its importance, much of this survival knowledge remains orally transmitted. S.C. Sharma, IFS, former ADG Wildlife, once observed that the greatest failure of the system is not lack of knowledge but failure to document experience. Integrating case-based learning, mock drills, and refresher training into formal curricula remains an urgent need.

Survival in the Wild: Field Wisdom and Life-Saving Practices of India's Forest Protectors:

Indian Forest Officers and frontline forest staff operate in some of the most wildlife-rich and high-risk landscapes in the world. Unlike researchers or tourists, forest officers cannot choose when or where they enter forests; their duty requires them to patrol at night, during the monsoon season, during fire incidents, during census operations, and during anti-poaching drives. Encounters

with tigers, elephants, bears, rhinos, and crocodiles are therefore an occupational reality.

Veteran officers repeatedly emphasise that survival in forests is not about bravery or weapons, but about understanding animals and respecting their space.

"The forest is not hostile by default. It becomes dangerous only when humans forget that they are visitors."

— Fateh Singh Rathore, IFS (Former Director, Ranthambore Tiger Reserve)

Over the decades, Indian forest officers have developed a body of practical field wisdom—often called "tricks"—that helps them avoid or survive attacks by wild animals. These practices, rooted in ecology and experience, form the backbone of frontline forest safety.

Why Wild Animals Attack: The Officer's Perspective

Senior forest officers are unanimous that most wildlife attacks are defensive, not predatory.

"A tiger does not hunt humans; it reacts to surprise, fear, or provocation. Understanding this single fact can save countless lives."

— Kailash Sankhala, IFS (First Director, Project Tiger)

"In wildlife areas, panic is more dangerous than the animal itself."

— R.K. Singh, IFS (Former PCCF, Madhya Pradesh)

These principles are the foundation of species-specific survival strategies.

Tigers and Leopards: Masters of Ambush
Nature of the Threat

Tigers and leopards rely on stealth and surprise. Attacks usually occur from behind, often after prolonged stalking.

“A tiger’s greatest weapon is not its claws or teeth, but its silence.”— Valmik Thapar (quoting field observations of IFS officers at Ranthambore)

In the Sundarbans, officers adopted the innovative practice of wearing face masks on the back of their heads.

“That experiment came not from laboratories, but from forest guards who understood how a tiger thinks.”— S.P. Yadav, IFS (Former ADG and presently DG IBCA)

Though not a permanent solution, it demonstrated the power of behavioural insight.

Elephants: The Most Lethal Wildlife Threat

Elephants cause more fatalities among forest staff than any other animal in India.

“If you work in elephant country, humility is your first survival tool.”— Ajay Desai, (Elephant expert)

Field Wisdom

Forest officers rely on:

- Wind direction awareness
- Recognising signs such as breaking branches and rumbling
- Immediate retreat when calves are present

During a charge, officers run diagonally, often downhill, and use trees or rocks to break the animal’s line of sight.

“Running straight is instinct. Changing direction is training.”— P. Chandra Kumar, IFS (Former PCCF, Karnataka)

Sloth Bears: The Close-Range Danger

Sloth bear attacks are sudden and brutal, often occurring in thick undergrowth.

“With bears, resistance invites punishment. Stillness often invites mercy.”— S.S. Negi, IFS (Former Director, IGNFA/ Former DGF)

Forest guards are trained to:

- Fall flat during an attack
- Protect face and neck
- Remain motionless until the bear leaves

This advice has saved many lives in Central and Southern India.

Rhinoceros: Territorial and Unyielding

In Assam and North Bengal, rhinos are a constant threat during patrols.

“A rhino does not warn. It decides and charges.”— Jatindra Sarma, IFS (Former Field Director, Kaziranga)

Survival depends on:

- Zig-zag running
- Using termite mounds and uneven terrain
- Avoiding open grasslands

Wild Buffalo and Gaur: Silent Aggressors

Wild buffalo and gaurs are often underestimated.

“Herbivores kill not out of hunger, but out of intolerance.”— M.K. Ranjitsinh, IAS (Wildlife conservationist and former bureaucrat)

Forest officers rely on patience, cover, and calm retreat rather than speed or confrontation.

Crocodiles: The Riverbank Assassins

In mangrove and riverine forests, crocodiles pose constant danger.

Contd.. on page No.33

6th ALUMNI MEET OF 1968-'70 SFRC BATCH , 10th to 13th FEB-2026 AT HYDERABAD.



Toucans of Costa Rica



Photo Credit: Sri K. Praveen Rao, IFS (Retd.)

ALUMNI MEET OF 1980-'81 SFRC BATCH; 2nd to 5th FEB-2026 AT ANDAMAN.



Photo credit: Sri D. Nagabhushanam, IFS (R)

Reintroduction of Cheetah in India: A boon or a bane?



Photo credit: Sri V.V.Hariprasad, Dy.CF (Retd)

Pilgrims' Progress, Wildlife Woes: Caught up between faith and forest - a case study in Nagarjunasagar Srisailem Tiger Reserve (NSTR)



The movement of people inevitably leads to increase in forest fires in the area.



Photo credit: Sri B.Vijaya Kumar, IFS

పర్యావరణహితం
సింగరేణి అభిమతం



దోర్లి ఓసీ డంపుపై పెరిగిన ఫ్లాంటేషన్



బ్లాక్ ఫ్లాంటేషన్



సింగరేణి ఆధ్వర్యంలో నిర్మించిన చెరువులు



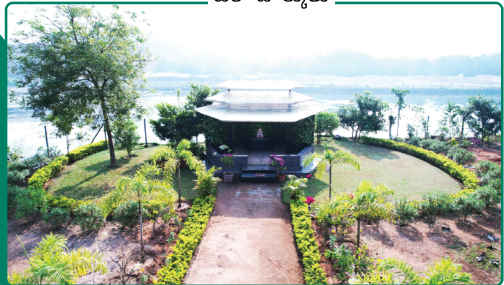
అవెన్యూ ఫ్లాంటేషన్



ఎకో పార్కులు



సింగరేణి
 కాలరీస్ కంపెనీ లిమిటెడ్
 (ప్రభుత్వ రంగ సంస్థ)



Continuation from page No. 28

“Water is never empty in crocodile country.”— B.K. Singh, IFS (Former PCCF, Odisha)

Strict water protocols, team vigilance, and targeting the eyes during attacks form the core survival strategy.

Snakes: The Invisible Risk

Snakebite remains one of the most under-acknowledged hazards.

“The snake you don’t see is more dangerous than the tiger you do.”— R. Sukumar (Commonly cited in forest training discussions)

Preventive clothing, probing techniques, and rapid medical response are emphasised.

Psychological Strength and Team Discipline

Almost every senior officer highlights mental control as decisive.

“Courage in forests means controlling fear, not defeating animals.”— Fateh Singh Rathore, IFS

Team coordination, obedience to senior commands, and trust in experience consistently save lives.

Institutional Learning: From Oral Wisdom to Formal Training

Much of this survival knowledge is transmitted orally.

“Our biggest failure is not lack of knowledge, but failure to document experience.”— S.C. Sharma, IFS (Former ADG Wildlife, Gol)

There is growing recognition that:

- Case studies must be documented
- Mock drills should be compulsory

- Refresher training must include real incidents

Indian Forest Officers survive in wild landscapes not because they dominate nature, but because they listen to it. The “tricks” they use are, in reality, sophisticated survival strategies grounded in ecological understanding and humility.

“The forest teaches you every day. Survival depends on whether you are willing to learn.”— Kailash Sankhala, IFS

As India strengthens conservation efforts, safeguarding the lives of forest personnel must be treated as a conservation priority. Preserving and institutionalising the lived wisdom of IFS officers is not optional—it is essential.

Recommendations for training:

To honour the sacrifices of Jasbin and others, and to safeguard future generations of forest staff, the following policy measures are proposed:

1. National Training Curriculum Reform

- Integrate wildlife encounter survival modules into induction and refresher courses.

- Use simulation-based training (VR, mock drills) to replicate real-life scenarios.

2. Experience-Sharing Platforms

- Establish a National Repository of Survival Case Studies, curated from frontline staff across states.

- Mandate annual experience-sharing workshops at the divisional and state levels.

3. Cross-State Knowledge Exchange

- Facilitate inter-state deputations for guards and officers to learn from diverse

ecological contexts.

- Encourage joint training camps in high-risk reserves like Kaziranga, Satpura, and Sundarbans.

4. Psychological Preparedness and Support

- Introduce stress management and resilience training.
- Provide post-incident counselling to staff involved in traumatic encounters.

5. Technology Integration

- Deploy wearable safety devices (GPS trackers, alert systems).
- Use AI-driven risk mapping to identify hotspots of wildlife conflict.

6. Recognition and Incentives

- Institutionalise awards for frontline staff who demonstrate exceptional survival skills.
- Link recognition to career progression and financial incentives, reinforcing morale.

Conclusion

The sacrifice of scores of our field staff is a solemn call to action. Forest staff are not merely custodians of Forests and Wildlife—they are the living shield between fragile ecosystems and the relentless pressures of modern society. Their safety must be prioritised through policy reform, institutional innovation, and ethical responsibility.

By compiling, collating, and sharing survival experiences and embedding them into structured training frameworks,

India can ensure that its protectors are not only safe but also feel safe. In doing so, we honour the memory of those who gave their lives and reaffirm our collective commitment to safeguarding both nature and the people who defend it.

The survival of Indian forest officers in wild landscapes is neither accidental nor heroic in the cinematic sense. It is the outcome of ecological understanding, behavioural insight, humility, and disciplined conduct. What are often described as “tricks” are refined survival strategies shaped by decades of lived experience.

As India strengthens its conservation framework, safeguarding the lives of those who protect forests must be recognised as a conservation priority. Preserving and institutionalising the field wisdom of Indian Forest Service officers is not merely about safety; it is about sustaining conservation on the ground.

Indian foresters urgently need survival tactics because their work exposes them to life-threatening encounters with wildlife, forest fires, and human-wildlife conflict. Structured training in survival skills can reduce fatalities, improve confidence, and strengthen conservation outcomes.

Survival tactics are not optional—they are critical life skills for Indian foresters. By embedding survival training into policy, India can honour the sacrifices of fallen rangers, empower current staff, and ensure that those who protect our forests return safely to their families.

The author is a retired PCCF of UP Cadre/Member REC Chandigarh/Member Expert Committee CZA. M-94157 86586, Email:hravivarapu@yahoo.com



FORESTS IN WESTERN GHATS OF KARNATAKA

(Pride, Significance, Crisis & Solutions)

B M T Rajeev

The Western Ghats in Karnataka form a stunning part of this ancient mountain range (also called the Sahyadri), a UNESCO World Heritage Site since 2012 and one of the world's eight Biodiversity Hotspots, older than the Himalayas, they run parallel to India's western coast. In Karnataka, the Western Ghats (WGs) cover districts like Kodagu (Coorg), Chikmagalur, Shivamogga (Shimoga), Uttara Kannada, Dakshina Kannada, Udupi, Hassan (including Sakleshpur), and parts of Chamarajanagar (BR Hills). Karnataka's Western Ghats offer incredible year-round beauty - especially vibrant during or just after the monsoon.

The WGs in Karnataka hosts a significant portion featuring lush evergreen forests, misty hills, cascading waterfalls, rich wildlife and coffee plantations. They play a crucial role in monsoon patterns, water supply, and supporting exceptional biodiversity with over 325 threatened species, including lions-tailed macaques, tigers and elephants. It is the origin of major rivers- for east flowing rivers like the Cauvery River basin- Cauvery, Lakshmanthirtha, Harangi, Hemavathi&Kabini; and Krishna River basins- Tungga, Bhadra, Ghataprabha&Malaprabha- which rivers provide water for millions for drinking and farming in the eastern plains and for production of hydro- -Sharavati, Varahi&Kaali are the sources of the hydropower generation in electricity in Karnataka before becoming life lines to Tamil Nadu & Andhra Pradesh/Telangana States respectively. The west flowing rivers- Sharavathi, Netravati, Varahi, Kali, Aghanashini, & Bedthi are the source of hydroelectricity production in the State of Karnataka. These rivers supply perennial water sources to the humans, farming and hydroelectricity production and nurse the biodiversity of the WGs.



Pic: Kodachadri Hill Ranges in WGs

The WGs in Karnataka is under severe threats due to deforestation, fragmentation & degradation for plantations/ encroachments/ illegal logging and releases for multi-development infrastructures, mining/quarrying, unregulated tourism, hydropower projects and release under Forest Rights Acts, and also due to climate change-induced landslides (up 75% in recent years), invasion by exotic weeds- Lantana, Senna etc and human-wildlife conflicts. In 2025, the IUCN labeled it a site of "significant concern" due to escalating pressures.

Saving the forests in WGs means saving of WGs itself....which will maintain the climate balance, feeds rivers, nurses the biodiversity, prevents landslides, and supports livelihoods of the state through perennial water source for drinking & agriculture in the plains with sustainable eco-tourism etc.

Saving these forests requires a multi-face approach involving government agencies, community participation, sustainable alternatives, and ecological restoration. Some of the practical key strategies that the policy makers, government, communities and NGOs and individuals can pursue/ support: Such strategies are as follows.

1. Strengthen Protected Areas and Corridors;

- Protecting forests in the WGs in the present Science & Technological Era of socio-economically and politically emancipated mechanized society burgeoning with human population with passage of time with cry for space for living & development is a herculean task in Karnataka. The society has forced the State govt. to refuse the DrMadhavGadgil and also DrKasthurirangan's reports for declaring the WGs as "Eco-Sensitive Area (ESA)" with fear for restrictions for development activities, which is affecting the forests, ecology and environment of the WGs... The declaration of the WGs in Karnataka as ESA is still pending and its degradation has been unabated since 2014 in spite of the Gol issuing notification of ESA several times.

This is the fate of the forests in WGs which are exposed for degradation, fragmentation, shrinking and encroachments. To safeguard the forest ecosystem in the eco-sensitive areas has to be set aside 20% of the forests as Protected Areas (PAs) for conservation of ecosystem & the biodiversity as national heritage for the good of the future generation.- This is the job of the govt. and people need to support it.

- Advocate for and support expansion/maintenance of national parks, wildlife sanctuaries, tiger reserves, and conservation reserves (e.g., Sharavathi Valley, Bhimgad, Anshi-Dandeli, Pushpagiri, Brahmagiri, Bhadra, Shettihalli, Kudremukh, Mookambika, Baandipu, Nagarahole, BRT Hills)...The PAs management with conservation efforts of the ecosystem with no interference has yielded good result in Karnataka with positive improvements in the population of wild animals like-tigers, elephants, leopards, wild boars and herbivores but, the threat is the invasive weeds affecting the carrying capacity of the PAs. The invasive weeds-Lantana & Senna menace have to be addressed.

- Push for securing wildlife corridors and

landscape connectivity to reduce fragmentation (critical for species like elephants, tigers, and lion-tailed macaques). Even gaurs are causing conflicts with farmers like elephants & tigers. Stopping release of forests for FRA, projects, mining and encroachments only can prevent fragmentation of the forests to strengthen the Corridors with afforestations of the depleted forests in the identified corridors.



Pic: A tiger in Nagarahole TR

- Support scientific land acquisition or protection of private forests in key corridors...Land value is sky rocketing with socio-economic growth in Karnataka. It requires a huge cost...at least strict stoppage of encroachments and releases by govt. and buying lands of most affected by the conflicts with elephants in the corridors will do a good job.

2. Push for Better Policy and Implementation

Demand implementation of ecologically sensitive zones (ESZs) around protected areas and revival/ stronger enforcement of recommendations from past reports (Gadgil and Kasturirangan Committees) including restrictions on mining, large dams, and quarrying in sensitive zones, mushrooming of home stays etc - The whole civilization and its representatives of the WGs region are against the ESZs in spite of its declaration around some PAs. The ESZ is not effective since it is not governed by the PAs management. The ESZ committee's Member Secretary should be the respective PA's manager

for its better implementation than the local Deputy Conservator of Forests.

- Support the Karnataka Western Ghats Conservation Task Force (established 2008, still active) - it coordinates sustainable development and community involvement- The support from public is low since they feel it as a govt. Policy. This task force needs better budget support from the government. for implementation of its programmes.

- Oppose ecologically damaging projects (e.g., certain railway/highway alignments) through public consultations, petitions, and legal avenues- Public demand for the projects and the govt. implements them...but, opposition is only from the environmentalists and the biologists/wildlifers/foresters; public should realize that the virgin forests in WGs once vanished cannot be recreated again-a life line of them and oppose such projects.

3. Promote Ecological Restoration and Reforestation

- Participate in or support native species reforestation and restoration of degraded areas -Shola-grasslands, evergreen forests, Myristica swamps, Kaan forests etc.... This has to be done by the Ktk Forest Department (KFD)- from where it can get money when the state govt. is looking towards welfare of the people? These are the ecological treasure-troves of nature and they have to be protected in the interest of saving the biodiversity and the rivers...the govt. should declare them as "Eco-sensitive Blocks" and protect them legally.

- Organizations like Nature Conservation Foundation (NCF), Wildlife Conservation Society-India, and Rainforest Alliance run active restoration programs in Karnataka's Western Ghats — volunteer, donate, or join community efforts...these are the activities of supportive agencies- for which rural population in the WGs have to be advanced in education and realization

of the importance of the ecology. There is support in Urban areas which comes through slogans and some signing petitions against anti-forest projects. They have to take birth in the affected zone.

- Restore watersheds and wetlands (including sacred groves and swamps in the WGs to improve water security and buffer against climate impacts- This program to be delved by the Forest Department which requires huge cost.

NB: Funds is a crunch for execution of the improvement activities under this category of activities to improve the forest ecosystem in the WGs. The government is always in favour of the drought prone areas for development activities. The society wants pure air, climate, clean water but it does not support funds for forestry. The KFD- should pool its 'Forest Development Fund' earned in the WGs districts for the development of the forests in the WGs. The govt. should allot funds for upkeep of the Watersheds of the River courses in the WGs and use for this job annually like earlier "River Valley Project" funds during Five Year Plans. The pure water is a scarcity and it is sold in the cities...Part of the tax and surcharges imposed on drinking water in the cities should annually be diverted for the conservation of the water sheds for-creation of 'Earthen Ponds' in level areas for aquatic flora & fauna; Plugging erosions along the gullies with 'Gully Checks' removal of invasive weeds and planting and nursing of local spp of trees.

4. Reduce Pressure from Livelihood Activities

- Promote sustainable agriculture and agroforestry (e.g., shade-grown coffee, avoiding monoculture plantations that replace natural forests). The fallow land holdings by the farmers have to be encouraged for agro-horti-silviculture farming with supply of free tree seedlings of economic value.

- Encourage alternative livelihoods: eco-tourism (regulated), NTFP collection with sustainable

limits, mangrove honey, or other non-destructive income sources-eco-tourism is overcrowded and the rest of the activities have been streamlined in Karnataka since the 1990s.

- Reduce fuel wood dependence through community biogas, improved stoves, or firewood alternatives-The pressure for fuel wood demand has come down with the popularization of LPG gas for cooking.

5. Address Human-Wildlife Conflict

- Support tech-based solutions: early warning systems, camera traps, satellite telemetry, and non-lethal deterrents (Karnataka has MoUs with IISc for elephant conflict management).It is well addressed in Karnataka. The problem of increased population of elephants and tigers in the Tiger Reserves(TRs) of the state face the problem of HACs. The elephants are spreading along the WGs with the available corridors but the tigers are creating HACs. The tigers creating HACs are translocated into tiger low PAs or to captivity and new strategies are in innovation.
- Community sensitization and compensation mechanisms for crop/livestock losses- These are well set in Karnataka.

6. Raise Awareness and Education

- Support programs like Wild Shaale (environmental education in schools across Western Ghats states, including Karnataka).
- Join citizen science, tree-planting drives, or awareness campaigns by local groups.
- Use social media and local networks to highlight threats and successful models.

7. Individual and Community Actions (What You Can Do in Bengaluru or Nearby)

- Choose sustainably sourced products (e.g., Rainforest Alliance-certified coffee from Kodagu/

Chikmagalur areas).

- Avoid tourism that damages ecosystems (choose responsible operators; avoid off-road driving in forests).
- Volunteer with local NGOs or Karnataka Forest Department initiatives.
- Support petitions/campaigns against destructive projects in the Western Ghats.
- Reduce personal ecological footprint (water/energy conservation helps reduce overall pressure on rivers originating in the Ghats).

The most effective path combines strong enforcement of existing laws (Wildlife Protection Act, Forest Conservation Act, etc.), community-led models, and science-based restoration. While large-scale threats need policy changes, grassroots efforts in districts like Uttara Kannada, Kodagu, Chikkamagaluru, Shivamogga, and Dakshina Kannada have shown success in protecting pockets of forest.

Interested Bengalurians, connecting with local environmental groups or the Karnataka Forest Department could be a great starting point for direct involvement. What specific aspect interests you most (e.g., volunteering, policy advocacy, or sustainable choices)?

Current Threats (as of 2026)

- Deforestation & Landslides: Roads, dams, and quarrying erode soil, causing disasters (e.g., recent Uttara Kannada incidents).
- Development Projects: Pumped storage, roads, and railways fragment habitats.
- Other Issues: Forest fires, poaching, plastic waste, home stays, resorts, trekking and safari-overuse. (eg.leading to safari ban in Bandipur/ Nagarahole in 2025 & trekking ban in 2026 in Kudremukh).

Author is a Retired Forester,Wildlifer and a Freelance Columnist, Benagaluru-56000. Mob: 9632781811

The Ganga – Its Riverine Wetland Biodiversity

Dr.H.S.Gupta



Sangi Dalan hall in Shah Shuja's palace at Rajmahal, with gangetic dolphins in Ganga river

Original Artist: Sita Ram Medium: Watercolour, Date: 1820

Watercolour of a hall from Sultan Shuja's palace in Rajmahal from 'Views by Seeta Ram from Malda to Gunga Pursaad Vol. II' produced for Lord Moira, afterwards the Marquess of Hastings, by Sita Ram between 1817-21. Marquess of Hastings, the Governor-General of Bengal and the Commander-in-Chief (r.1813-23), was accompanied by artist Sita Ram to illustrate his expedition to Bengal in 1817 and his convalescent tour in the Rajmahal Hills in the winter of 1820-21.

The above is recreated view of the Sangi Dalan hall in Shah Shuja's palace at Rajmahal. The Sangi Dalan or Hall of Stone, dates from the mid-17th century, and is one of the principal remaining sections of Sultan Shuja's palace. Rajmahal, located along the right bank of the Ganges in Bihar, was chosen in 1592 as the capital of Bengal by Man Singh, a Rajput general who worked for

Mughal Emperor Akbar (r.1556-1605). Rajmahal remained the capital until 1607, when it was shifted to Dacca. Sultan Shuja, the governor of Bengal, moved the capital back to Rajmahal in 1639, though by 1707 it was shifted again, this time to Murshidabad. Inscribed below: 'The Sungee Delan or Black Stone Hall at the Ruined Palace of Rajmahal.

The Pavilion That Still Watches the River

At Rajmahal, Jharkhand the Ganga does something unusual.

After a long, forceful run through the plains, the river bends gently here, as if pausing before continuing east. On that bend, half hidden by trees and silence, stands a long line of brick arches Sangi Dalan- an historical Baradari.

Most travellers pass without noticing it.

Those who stop often think it is a mosque, or a warehouse, or simply a nameless ruin.

Few realise that four hundred years ago, this was a place where an empire paused to look at the river.

When Rajmahal Was a Capital

In 1592, Emperor Akbar made a decision that briefly changed the geography of power in eastern India.

He shifted the capital of Bengal to Rajmahal.

For the next forty years, this quiet riverside town became Akbarnagar the administrative heart of the richest province of the Mughal Empire. Bengal alone generated almost one-third of imperial revenue. Silk, rice, saltpetre, ivory, elephants all moved on boats.

In those days, the Ganga was not merely a river.

It was the highway of empire.

From Agra to Bengal and onward to the sea, fleets of imperial boats moved continuously. Governors arrived by water. Armies travelled by water. Taxes came by water.

And from Sangi Dalan, Mughal officials watched them come.

This was not a ordinary building- and it continues to be present.

It was a river pavilion a place for reception, leisure, and ceremony. A place to sit in the shade, hear petitions, and watch the empire float past.

A Building Made Only of Gravity

Sangi Dalan has black marble marble, not much calligraphy, nor much inlays.

It is built only of brick and mathematics.

Each vault stands because its bricks press

against each other in perfect balance. No steel. No cement. Only gravity, geometry, and skill.

Modern engineers estimate that each of these vaults quietly carries hundreds of tonnes of load, transferring it safely into the ground.

Four centuries of floods, earthquakes, neglect and the arches still stand.

This is not decorative architecture.

This is engineering confidence, expressed in silence.

When the Empire Left, the Painters Arrived

Empires, normally do not stay long.

By the mid-seventeenth century, the capital shifted back to Dhaka. Rajmahal emptied. Though after brief gap-it again became seat of capital - but eventually lost its place to Dhaka. Then its palaces fell silent. Trees grew in courtyards. Walls cracked.

And then, unexpectedly, the ruins acquired a second life.

In the late eighteenth century, British artists arrived on the Ganga.

Thomas and William Daniell painted the arcaded ruins of Rajmahal in their celebrated series Oriental Scenery, seen across Europe. A generation later, an Indian artist named Sita Ram, working for Lord Hastings, drew the same pavilions - now more broken, more overgrown.

Because of these drawings, Rajmahal became one of the earliest Indian landscapes to enter world art.

Long before the Taj Mahal became famous, long before Hampi became famous, Rajmahal was already known as a place where empires turn into memory.

The Oldest Witness in the Scene

But the most ancient inhabitant of this landscape is not human.

It is the Gangetic river dolphin.

This species is over 30 million years old - older than the Himalayas, older than the Ganga in its present course. Blind, slow, navigating by sound, it still lives in this stretch of the river.

Fewer than 3,500 survive today in the entire country.

And Rajmahal is one of the few places where:

A Mughal pavilion, documented by the world's best colonial paintings, and now an endangered species

They all share the same frame.

Even now, if one stands quietly under the arches and watch the water long enough, he can see a brief curve on the surface.

A roll, A splash and its Gone-the playful gangetic dolphins

The same movement that a Mughal governor might have seen four hundred years ago-through the Baradari of Sangi dalan.

Sangi Dalan-A Place That Teaches How Time Works

Most monuments tell you about history.

Sangi Dalan tells about time-as one can see:

How a capital rises and vanishes, but its associated building lasts centuries-facing vagaries of different sorts

How a species lasts thirty million years and could still disappear in our lifetime- but for the timely action of Jharkhand government- declaring the stretch of river Ganga-as dolphin sanctuary.

Rajmahal is probably one of those few places in India, which allow you to feel all three scales at once.

History, Architecture, Deep biological time-All in one quiet bend of a river.

Why This Place Matters Now

Rajmahal has Ruins, River, swamps, oxbow lakes, Silence, and whole diversity of mammals, birds, reptilian-including an endangered animal swimming past-the gangetic dolphins.

It offers heritage landscapes, where culture and ecology survive together.

A place where: one walks through a Mughal/British ruins, Remembered through Daniell,s/ Sitarams paintings, and still able watch endangered gangetic dolphins playfully surfacing in the great Ganga river.

If the pavilion collapses, we lose a chapter of history.

If the dolphins vanish, we lose a lineage millions of years old.

And if we do nothing, we may lose both.

Sangi Dalan does not ask to be admired.

It only asks to be noticed.

Because when stones watch dolphins, and rivers remember emperors, you realise something rare:

Some places do not belong only to history.

They belong to deep time.

Thanks God, the stretch Ganga along Rajmahal - with rich gangetic dolphins has been declared as Sanctuary.

Author is a former PCCF of Jharkhand cadre and a former Professor at the Indian Institute of Forest Management (IIFM), Bhopal. M-90310 00118



Reintroduction of Cheetah in India: A boon or a bane?

V.V. Hari Prasad

The Asiatic Cheetah (*Acinonyx jubatus venaticus*) once ranged from north western India to the Indo-Gangetic plain in the east, extending to the Deccan Plateau in the south. In the Middle Ages, Mughal rulers supposedly used cheetahs for coursing blackbucks, chinkaras and antelopes. The species had a gradual history of habitat loss. In Punjab in Northern India, before the thorn forests were cleared for agriculture and human settlement, they were intermixed with open grasslands grazed by large herds of blackbuck and these co-existed with their main natural predator, the Asiatic cheetah. The blackbuck is also no longer extant in the region. Trapping of sub-adult cheetahs that have learnt hunting skills from their mothers in the wild, for assisting in royal hunts is said to be the major cause of the species' rapid decline. Trophy hunting during the British Raj further impacted the already dwindling population of cheetahs. Asiatic cheetahs rarely breed in captivity as there is only one record of a litter ever born to captive animals.

By the beginning of the 20th century, wild cheetah sightings were rare in India, so much so that between 1918 and 1945, Indian princes imported cheetahs from Africa for coursing. The last confirmed three cheetahs were shot by Maharajah of **Surguja Ramanuj Pratap Singh Deo** in 1948. The last known sighting was that of a female in 1951 in Koriya district in north western Chhattisgarh. With the death of the last known population and no further sightings, the species was declared locally extinct in 1952. The Asiatic sub-species is now found only in Iran and is declared as critically endangered.

Cheetahs went extinct in India primarily due to overhunting, habitat loss, and the diminishing of their prey base. Factors contributing to the cheetah's extinction in India were as follows.

▯ **Hunting:**

Cheetahs were hunted by Indian royalty and nobility for sport, and the British Raj also offered rewards for killing them, which contributed to their decline.

▯ **Habitat Loss:**

The clearing of forests for settlements and plantations, as well as the conversion of land to agriculture, reduced the cheetah's habitat.

▯ **Diminishing Prey Base:**

The reduction in the number of large herbivores, such as gazelles and deer, which cheetahs preyed upon, further weakened their population

Project formulation

In September 2009, a cheetah reintroduction workshop was organized by the Government of India with scientists and experts from Wildlife Institute of India and Cheetah Conservation Fund, among others. **Stephen J. O'Brien** of the Laboratory of Genomic Diversity of National Cancer Institute of the United States, said that according to the latest genetic studies, the Asiatic cheetah was, in fact, genetically identical to the African cheetah with which it had separated only 5,000 years ago and this was not enough time for a sub-species level differentiation

The experts argued for the introduction of the Southeast African cheetah as the Asiatic cheetah survives only in Iran, its population numbers being less than 100 individuals, and the Iranian government's repeated reluctance to supply said cheetahs for Indian efforts. The meeting identified Namibia, South Africa, Botswana, Kenya, Tanzania, and the UAE as countries from where the cheetah could be imported to India. Another working group, which was formed for exploring sourcing and translocation of the cheetah suggested that five to ten animals annually have to be brought to India over a period of five to ten

years to create a viable population.

Discussions on cheetah introduction began after the mid-1950s. Proposals were made to the governments of Iran in the 1970s, but unsuccessfully. Offers were made by the government of Kenya beginning in the 1980s. In late 2009, as a part of Project Cheetah, the Ministry of Environment and Forests approved a detailed survey of seven potential reintroduction sites and three holding sites for captive breeding across four states Rajasthan, Gujarat, Madhya Pradesh, and Chhattisgarh. On 17 September 2022, five female and three male southeast African cheetahs, between the ages of four and six, were transported by air from Namibia and released in a quarantined enclosure within Kuno National Park in the state of Madhya Pradesh. The relocation was supervised by **Laurie Marker**, of the Namibia-based Cheetah Conservation Fund and **Yadvendra Dev Jhala** of the Wildlife Institute of India. The cheetahs, fitted with radio collars, were moved to a larger enclosure in November. A further 12 cheetahs arrived from South Africa in February 2023 and began to be released into the park in March 2023. That month a cheetah gave birth to four cubs, the first recorded live cheetah birth in India in over 70 years..

In May 2023, South African wildlife expert **Vincent van der Merwe** clarified that recent cheetah deaths does not mean that the Project Cheetah is failing, as similar mortality rates have been reported in African reintroduction and 50 percent mortality rate is expected in the first year. In July 2023, Namibia-based **Cheetah Conservation Fund** wrote a letter to the Supreme Court of India, suggesting that the cheetah deaths could have been prevented with better monitoring and adequate veterinary care. It was based on the postmortem reports which indicated that cheetahs had died of various causes including starvation and infection due to wounds made by the tracking radio collar. By January 2024, three more deaths were recorded pushing the count of dead animals to ten since the start of the project. As of September 2024, the remaining 12 animals were moved to enclosures due to the apparent mortality

Legal troubles and clearance

In May 2012, the Supreme Court of India put the project of importing cheetahs from Africa and reintroducing them in India on hold after a petition was filed against the same. In the petition, it was argued that Kuno, the proposed location for the re-introduction was prepared for reintroduction of native lions from Gir National Park and introducing cheetahs will be used as a pretext to delay the lion re-introduction project. It was also argued that the reintroduction of African cheetah has not been placed before the Standing Committee of India's National Board for Wildlife and that the scientific studies show the African cheetahs to be genetically different from Asian Cheetahs which is against the International Union for the Conservation of Nature (IUCN) guidelines on translocation of wildlife species.

On 28 January 2020, the Supreme Court allowed the central government to proceed with the introduction of Southern African cheetahs to a suitable habitat in India as part of a trial, in response to an application filed by the **National Tiger Conservation Authority (NTCA)** seeking permission to introduce Southern African cheetahs from Namibia. The Supreme Court set up a three-member committee to guide the NTCA and asked the committee to submit a progress report every four months. Subsequently, a scientific assessment of all potential reintroduction sites was conducted to understand the habitat conditions, prey species availability, protection status and other ecological criteria for shortlisting initial introduction site with a detailed scientific action plan published in January 2022. In August 2022, the Union minister of Environment stated that African cheetahs would be reintroduced from Namibia to Kuno Wildlife Sanctuary in September and that the Indian Government was also attempting to translocate another 12 cheetahs from South Africa.

Sustainability and impact

The scientific reaction to the translocation has been mixed. Veterinary pharmacologist **Adrian Tordiffe** viewed India as providing a "protected space" for

the fragmented and threatened cheetah population. **Zoologist K. Ullas Karanth** was critical of the effort, considering it to be a "public relations exercise." He further commented that the "realities" such as human overpopulation, and the presence of larger feline predators and packs of feral dogs, could cause potentially "high mortalities," and require a continual import of African cheetahs.

Kuno National Park is a relatively new national park, having declared as such in 2018. It was founded previously as a wildlife sanctuary to implement the **Asiatic Lion Reintroduction Project**, which aimed to establish a second Asiatic lion population in India and protect the isolated lions of the Gir National Park in Gujarat from potential mass mortality events such as an outbreak of an epizootics. Although the state government of Gujarat was ordered by the Supreme Court in April 2013 to transfer a small population of lions to Kuno within six months, the order was not ultimately implemented. It was estimated that Kuno National Park had adequate prey population to support about 20 cheetahs. With an increase in the predator population due to the introduction of cheetahs, prey population has been impacted and periodic studies of prey population are being conducted to take required corrective action.

Scientists from Namibia have indicated concern on the spatial ecology. Cheetahs in Africa typically have individual territories of 100 km² and it will be difficult to sustain 20 cheetahs at Kuno National Park with a core zone of 748 km² and a buffer zone of 487 km². Increasing cheetah population leads to the animals venturing out of the core zones of the park into adjoining agricultural lands and non-forested areas, bringing them into conflict with humans. On 2 April 2023, a male cheetah escaped from the boundaries of the park before being captured in a village 20 km away from the park. In the same month, the Supreme Court of India ordered the central government to look for an alternative site to augment the existing facility as the park did not have an adequate amount of space for the growing number of felines. According to **Ravi Chellam**, the introduced African cheetahs

had been projected to be a key species of a new phase of ecological restoration in India, comprising scrub forests, savannahs and grasslands. By September 17, 2024, the second anniversary of the introduction—at first of eight adults from Namibia and thereafter 12 from South Africa; subsequent deaths of eight adults; births of 17 cubs; and deaths of five—all surviving 12 adult cheetahs and 12 cubs were limited to protective enclosures.

Key Milestones and on-going Efforts:

▢ **Translocation and Release:**

▢ Eight cheetahs were initially released into KNP in September 2022, and 12 more were added in February 2023.

▢ **Breeding Success:**

▢ Cheetahs have successfully bred in India, with 17 cubs born, though not all have survived.

▢ **New Habitats:**

▢ Gandhi Sagar Wildlife Sanctuary in Rajasthan has been identified as a potential new habitat, and two cheetahs were relocated there in April 2025.

▢ **Monitoring and Management:**

▢ A Cheetah Project Steering Committee was established to monitor the project and provide advice.

▢ **Expansion of Habitat:**

▢ Plans are underway to expand the cheetah's habitat to include Gandhi Sagar Wildlife Sanctuary and potentially other areas.

▢ **Challenges and Setbacks:**

▢ **Mortality:**

▢ Several cheetahs have died, including adult cheetahs and cubs, due to various factors like septicemia.

▢ **Adaptation Challenges:**

▢ Some cheetahs have struggled to adapt to the new climate and environment in India.

▢ **Future Plans:**

▢ **Continued Translocation:**

▣ More cheetahs are planned to be translocated to India, including from Botswana.

▣ **Community Involvement:**

▣ There are plans to involve local communities in the cheetah reintroduction project.

▣ Overall, the cheetah reintroduction project is a complex and ongoing process with both successes and challenges. While the project has shown promise in terms of breeding and establishing cheetahs in new habitats, it faces ongoing challenges related to mortality and adaptation.

▣ **The reintroduction of cheetahs to India, through initiatives like Project Cheetah, is generally considered a boon for the country's wildlife and ecosystem. While challenges and setbacks exist, the project offers significant conservation benefits, including contributing to biodiversity, enhancing grassland conservation, and potentially boosting ecotourism.**

BOON:

▣ **Species Restoration:** Reintroducing cheetahs, a species extinct in India, restores biodiversity and contributes to a more balanced ecosystem.

▣ **Grassland Conservation:**

▣ Cheetahs are a flagship species for grasslands and their conservation enhances the value of these ecosystems.

▣ **Ecotourism:**

▣ The cheetah's charismatic presence can draw tourists and contribute to conservation efforts in areas that may have been overlooked.

▣ **Potential for Climate Change Mitigation:**

▣ Ecosystem restoration activities associated with cheetah conservation can enhance carbon sequestration, contributing to global climate change mitigation efforts.

▣ **Threatened Prey Base:**

▣ Cheetahs, being apex predators, help regulate prey populations, including potentially threatened species in grasslands and open forest ecosystems.

BANE (Potential Challenges):

▣ **High Risk of Mortality:**

▣ Several cheetah deaths have occurred since the reintroduction project, raising concerns about the animals' adaptability to the new environment and potential missteps in management.

▣ **Disease and Genetic Risks:**

▣ Introducing a new species, even from within the same genus, carries the risk of disease transmission and potential genetic bottlenecks.

▣ **Conflict with Human Interests:**

▣ While cheetahs are not typically a threat to humans or livestock, the project may involve challenges in managing potential conflicts if the cheetahs venture outside protected areas.

▣ **Scientific Soundness:**

▣ Some experts question the scientific validity of reintroducing African cheetahs into Indian habitats, citing the lack of data on the Asiatic cheetah's extinction and the suitability of the Indian environment for African cheetahs.

CONCLUSION

The reintroduction of cheetahs in India presents a complex picture. While the project offers significant benefits for conservation and biodiversity, challenges related to mortality, adaptability, and potential conflicts must be addressed to ensure the long-term success of the initiative. The progress made so far, in terms of litters given by the re-introduced as well as in-situ born Cheetahs augurs well for the future.

Pictures in Page No : 31

(The author is a retired Deputy conservator of Forests and a practicing Advocate. He teaches cyber laws in the central university, Hyderabad .He may be reached at vvhp53@gmail.com and 7893673767)

Green News

Top 20 Carbon Majors Entities by Emissions (2024)

Together, they were responsible for 18 GtCO₂e, representing 41.8% of global fossil fuel and cement CO₂ emissions in 2024. The list is largely dominated by state-owned entities, which account for 16 of the top 20. Thirty two (32) companies, mostly state-owned, generated half of all planet-warming carbon dioxide emissions in 2024, according to a new analysis. The number is down from 36, five years earlier.

State-controlled companies were responsible for 57% of global fossil CO₂ emissions. CO₂, a by-product of burning fossil fuels, biomass, land-use changes, and industrial processes such as cement production, is the principal human-made greenhouse gas in the atmosphere, responsible for about three-quarters of planet-warming emissions.

S.No	Entity	Owning state	% Global emission contribution
1	Aramco	Saudi Arabia [state-owned]	4.23
2	Coal India	India [state-owned]	3.92
3	CHN Energy	China [state-owned]	3.91
4	National Iranian Oil Company	Iran [state-owned]	3.13
5	Gazprom	Russia [state-owned]	2.76
6	Jinneng Group	China [state-owned]	2.63
7	China (Cement)	China [state-owned]	2.46
8	Rosneft	Russia [state-owned]	1.79
9	China Natural Petroleum Corporation (CNPC)	China [state-owned]	1.70
10	Shandong Energy	China [state-owned]	1.74
11	China National Coal Group	China [state-owned]	1.70
12	Shaanxi Coal and Chemical Industry Group	China [state-owned]	1.62
13	ExxonMobil	US-based	1.58
14	Abu Dhabi National Oil Company (ADNOC)	United Arab Emirates [state-owned]	1.46
15	Chevron	US-based	1.33
16	Sonatrach	Algeria [state-owned]	1.26
17	Iraq National Oil Company	Iraq [state-owned]	1.34
18	Shanxi Coking Coal Group	China [state-owned]	1.26
19	QatarEnergy	Qatar [state-owned]	0.96
20	Shell	UK-based	0.97

Source: <https://earth.org/this-week-in-climate-news-january-2026-week-3/>

Pilgrims' Progress, Wildlife Woes: Caught up between faith and forest - a case study in Nagarjunasagar Srisaillam Tiger Reserve (NSTR)

B. Vijaya Kumar

The Nagarjunasagar Srisaillam Tiger Reserve (NSTR) in Andhra Pradesh is a prime example of the delicate balance between faith and conservation. Located in the heart of the Tiger Reserve, the Srisaillam Temple attracts millions of pilgrims every year, creating a unique challenge for Conservation efforts.

The Problem:

Pilgrims' activities are taking a toll on the local Wildlife. Waste management and degradation problems in the Core area have led to Wild animals feeding on waste, altering their behavior and increasing Human-Wildlife Conflict (HWC). The Hon'ble Supreme Court has directed that Core habitats in Wildlife Sanctuaries and National Parks remain inviolate, prioritizing Conservation over Human activities.

Key Issues:

- ▣ **Waste Management:** Pilgrims leave behind waste, which is consumed by Wild animals, altering their diet and behavior.
- ▣ **Noise & Plastic Pollution:** Loudspeakers and musical instruments disturb Wildlife, forcing them to abandon their habitats.
- ▣ **Human-Wildlife Conflict:** Pilgrims' visits increase the risk of encounters with Wild Animals, including tigers.
- ▣ **Habitat Destruction:** Cooking and campfires lead to vegetation destruction and increased risk of forest fires.

Conservation Efforts:

The National Tiger Conservation Authority (NTCA) and Wildlife Institute of India have identified increasing pilgrim footfalls as a serious challenge to the management of the NSTR. The Wildlife Protection Act, 1972, governs core/critical tiger habitats, restricting human activities. The NTCA manages these areas, prioritizing conservation.

The Way Forward:

Finding a balance between faith and Conservation is crucial to protect both pilgrims and Wildlife. Some potential solutions include:

- ▣ Implementing sustainable waste management practices
- ▣ Regulating pilgrim footfalls and noise levels
- ▣ Creating alternative routes and facilities for pilgrims
- ▣ Educating pilgrims about wildlife conservation
- ▣ Relocating villages in the sanctuary (as directed by the Supreme Court)

The State Government to look into voluntary relocation of 21 villages in the Core area of the Tiger Reserve. It's a complex issue, but, with careful planning and collaboration, it's possible to preserve the sanctity of these sacred spaces while safeguarding the Chief Conservator of Forests & Field Director,

Pictures in Page No : 31

(The author is the Field Director, Project Tiger, NSTR, Andhra Pradesh)



DO WE REALLY NEED KUKRAIL SAFARI?

UMA SHANKER SINGH

INTRODUCTION

There is no single statutory definition of “wildlife safari” under Indian law. The Wild Life (Protection) Act, 1972 does not define the term “safari”. Even eco-tourism is not a permissible activity under the Wildlife Protection Act 1972 or the Forest Conservation Act 1980, yet.

Even to build basic concrete structures in a wildlife reserve or national park, the permission of the National Board for Wildlife (NBWL) is mandatory. The forest department can do these eco-tourism activities outside the national parks. Why do they need to set up inside? Even with eco-tourism pressures outside parks look at the condition of places like the Corbett Tiger Reserve. If government starts opening up and breaking forest land there will be nothing left of our wildlife reserves and forests anymore.

Already linear projects are wreaking havoc in protected areas. Under the Guidelines for Safari Parks, which are Working either as Zoos or as Extensions of Zoos, safaris are specialized zoos where the captive animals are housed in large, enclosures, and visitors are permitted to enter such enclosures in mechanized vehicles along pre-determined routes from close quarters viewing. Is this necessary? The world does not need ex-situ conservation anymore and we don't need zoo and Safari as an extension of education.

When dissection of animals can be done away in zoology then why not education of animals in zoo and safari?

BEGINNING OF ZOO

This is proper to understand how the zoo started

in the world? In 1400 BC, the Egyptian queen Hatshepsut displayed her loot of captured animals from faraway lands as a sign of wealth and power. And surprisingly in the 1700s, similar spectacles were combined with education and interactions. Emperors gifted wild animals to each other, a commodity as a sign of camaraderie and wealth. If one traces the origins of zoos and their inception, words such as exclusionary, expansionary, non-native, power and wealth often pop up, given that until the 19th century end, it represented “royalty”. One of the first zoos in India, Arignar Anna Zoological Park, was set up in Chennai in 1855 by Edward Belford. It quickly expanded and needed a large area. In 1976, driven by the same colonial mindset, plans were made to shift the zoo to the Vandalur Reserve Forest, termed “barren” and hence, afforested as is done in Kukrail.

Let me tell you that animals in the zoo are not always calm and eager, waiting to be ‘live subjects’ of amusement in constricted spaces. **A study called “Prevalence and determinants of stereotypic behaviours and physiological stress among tigers and leopards in Indian zoos” by R Dilip Kumar et al. in 2017 (published in peer reviewed paper Plos.one)** of tigers and leopards in six Indian zoos found that 83 % of the tigers and 62 % of leopards showed stereotypic behaviour, an indication of stress. Zoo animals have killed hundreds of people, visitors and caretakers globally. Another myth that Zoo and safari impart education which is also without any research support. **A research carried out on “Perceptions and attitudes of visitors at the Jardín Zoológico Payo Obispo and their**

influence on the conservation of native wildlife”, published in Actazoológicamexicanaversión in 2021, have shown that zoo visitors support or discourage species conservation depending on their perceptions and attitudes- fear and aesthetic consideration ugly or majestic, being primary.

CENTRAL ZOO AUTHORITY GUIDELINES

The central Zoo Authority claims that Zoos in India have undergone an intrinsic transformation over the past decades, evolving from traditional animal display facilities to modern conservation centres that prioritize animal welfare, education, and sustainability but most of the Zoos in India have gone from bad to worse in animal welfare. The cardinal principle of any modern zoo is to serve the needs of the creatures it exhibits. But zoos in India do just the opposite; they serve the needs of the visitors. While the lawns are manicured, the paths pebbled and the waiting areas equipped with modern facilities, the animals are housed in cramped, dingy enclosures. The Indian zoos suffer from congenital problems that they've found hard to shake off. They are often run by ill-qualified and untrained staff. They run on tight budgets, leading to food-shortage for animals. They are poorly designed, with no understanding of animal behaviour.

Scientific papers, investigative reports from animal welfare organizations like PETA India, and media analyses “indicate **significant, persistent animal welfare problems in many Indian zoos, with conditions often described as inadequate or substandard**”. The Central Zoo Authority also claims that one such innovation they have brought in Zoo management is the creation of night safarewhere zoo authorities display animals after sunset, offering zoo visitors a unique opportunity to observe **cathe meral, nocturnal and crepuscular species** (hence forth referred to as non-diurnal

species) in specialized settings. They also claim that these specialized experiences go beyond simple entertainment, contributing to conservation education, ecological awareness, and sustainable tourism by fostering a deeper understanding of the complexities of animal behaviours and their ecological roles. The Indians like to see more of carnivore and big animals in wild. **Mathur et al** published a paper titled “**Tigers, tourists and wildlife: visitor demographics and experience in three Indian Tiger Reserves**” in a peer reviewed journal called Biodiversity Conservation, in 2017, which reveals that domestic tourist formed majority of the visitor numbers in all three Protected Areas (82.7%). Tourists who visit these PAs chose to have close encounters with large mammals especially tigers. Primary attraction for visitors were wild mammals namely, tigers and other choice is peacefulness, photography and bird watching.

Another **study by Avni Gupta et al. on a subject which is extremely important: Does visitation dictate animal welfare in captivity? – A case study of tigers and leopards from National Zoological Park, New Delhi; Running title: ‘Visitation effect on captive big cats and the result’ is interesting.** The authors found that big cats like tigers and leopard are among the most visited species in zoos globally. They investigated the behavioural response of the zoo-housed big cats to visitor densities and noise. They also aimed to understand the relationship between stereotypy, animal history, feeding schedules, and enclose design. The behaviour of eight big cats housed in the National Zoological Park, New Delhi, was monitored using the focal sampling technique during the May and June 2019 to construct the ethograms. They also recorded the visitor density, ambient noise, for the same duration. Both species were found devoting a significant amount (>50%)

of time in displaying inactive behaviours. Tigers and leopards performed stereotypic behaviours for 22% and 28% of their time, respectively.

Pearson 'chi square analysis' revealed a significant variation of stereotypy in association with biological (age, sex, and rearing history) and captive (enclosure design) variables. Big cats' stereotypic behaviours were found significantly influenced by the high visitor density. However, ambient noise did not impact the stereotypy of both the felid species. Visitors form an integral part of zoos, and their detrimental impact diminishes the well-being of captive animals. This study revealed that tigers and leopards in NZP display a high proportion of inactive and stereotypic behaviours.

The idea of my explaining with the help of research papers is that people love to see big animals in the zoo but the night safari guidelines suggests us that night safari offers zoo visitors a unique opportunity to observe cathemeral, nocturnal and crepuscular species. And who are those animals? Let me give you a few examples:

Nocturnal Species (Active at Night)

- **Mammals:** Bats, Raccoons, Hedgehogs, Aardvarks, Aye-ayes, Leopards, Owls (like Barn Owls, Great Horned Owls), Flying Squirrels, Skunks, Armadillos, Wolves (often), Koalas, Possums, Mice, Rats, Honey Badgers, Night Monkeys (Owl Monkeys).
- **Birds:** Owls (various species), Nightjars, Frogmouths, Kiwi.
- **Insects/Others:** Moths, Fireflies, Cockroaches, Catfish, Geckos, Slugs, Frogs/Toads.

Crepuscular Species (Active at Dawn/Dusk)

- **Mammals:** Deer, Rabbits, Hares, Coyotes, Foxes, Lions, Domestic Cats, Wolves, Bears, Moose, Jaguars, Ocelots, Skunks, Wombats, Wallabies, Capybaras, Chinchillas, Hyenas.

- **Birds:** Common Nighthawk, Owlet-nightjars, Chimney Swift, Woodcock, Crakes.
- **Insects:** Many Moths, Beetles, Flies.

Therefore, spending more than Rs.1500 crore on Kukrail night safari project which does not have big animals may not be financially viable.

WHY KUKRAIL SHOULD NOT BE CONSIDERED AS A VIABLE SITE FOR NIGHT SAFARI?

There are many issues which must be considered before establishing a night safari in the Kukrail and they are:

1. The section 1c of the Night Safari Guidelines, 2025 clearly says that, "CZA will not accord approval for creation of night safaris and safaris diverting the forest land. The existing zoos may establish night safaris without causing any adverse impact on the animal facilities in the zoo." The guidelines have been framed in 2025 and FCA Amendment Act 2023 is still under the consideration of honourable SC. By an interim order dated 19.02.2024, this Hon'ble Court has directed that no final approval for the establishment of any Zoo or Safari shall be granted without first obtaining prior permission of this Hon'ble Court. Therefore, matter is sub-judice and in my opinion, the government should wait until a final verdict is passed in Writ Petition (Civil) No. 1164 of 2023 titled **Ashok Kumar Sharma, IFS (Retd.) & Ors. vs. Union of India & Anr.**

2. The State of Uttar Pradesh has submitted that in order to fulfil the policy objective of creating an effective tool for educating people about the intrinsic linkage between the protection of natural areas and the maintenance of life-supporting ecological processes, and to sensitize visitors to the dangers of hostile or indifferent attitudes towards nature, particularly in respect of cathemeral, nocturnal and crepuscular species, it has decided to establish a Night Safari along

with a Zoological Park in the Kukrail forest area in two phases. The State Government ultimately accorded administrative and financial sanction for the project, with the total estimated cost of both phases approved at Rs. 1510.57 crore, of which Phase-I (Night Safari) is sanctioned for Rs. 777.01 crore, with Phase-II comprising the remaining expenditure for the establishment of the Day Zoo. The details are as follows:

- (a) Total Area 855.07 acres
- (b) Night Safari Area 493.73 acres
- (c) Zoo Area 199.48 acres
- (d) Enclosures and Other Facilities 161.86 acres
- (e) Total Green Cover 610.34 acres (71.30%) of the total area

If we examine the Night Safari Guidelines, 2025 closely the section 21 of the Night Safari guidelines, 2025 states that: "No same animal should be displayed for day viewing and in night safari". The government of Uttar Pradesh has not mentioned anywhere in its application to the honourable SC the names of the animals in the Night Safari and Day Zoo, their procurement plan and the place of procurement. The Night Safari Guidelines, 2025 states in its chapter "Scope and Applicability" that: "All such operations, including those involving night safaris, must comply with the Wild Life (Protection) Act, 1972". The section 10 of the Night Safari Guidelines, 2025 under the head "Planning & Implementation" states that: "All collection plans must align with the Central Zoo Authority (CZA) guidelines to ensure proper species management, with corresponding provisions incorporated into the Master Plan. For establishments operating both daytime zoos and night safaris, a composite collection plan must be developed, adhering to the prescribed 75% native and 25% non-native species ratio". But let me

clear the air that the word Safari does not find any mention in the aforesaid Act.

3. The government of Uttar Pradesh admits in its application to the honourable SC that Kukrail is in the centre of city and is surrounded by human habitation. The Kukrail forest is highly vulnerable to encroachments, and during 2014—2017, several encroachments were removed and boundary walls constructed in critical stretches for its protection. It also states that since no other accessible land of adequate size near the city, with existing clusters of trees, was available, the proposed Zoo and Night Safari site was identified within Kukrail Forest over an area of 855.07 hectares but it fails to say that what civil society feels about establishing a night Safari in this locality. What adverse impact this may create on the neighbourhood has not been studied till today. The government admits that project is expected to attract approximately 4,000 visitors per day on weekdays and around 8,000 visitors per day on weekends and holidays, offering an exceptional tourism and I am sure this may bring in a devastating impact on social and health issues. Therefore, this needs a comprehensive study. The Kukrail Forest, notified as a Reserve Forest under Section 20 of the Indian Forest Act, 1927, extends over a total area of 2,027.4 hectares and has been developed through sustained plantation efforts of the Forest Department and it forms an important urban green landscape for morning walkers like Lodhi Garden in Delhi hence, the opinion of the neighbourhood is extremely important besides an environment impact assessment.

4. The state government states that: "Soil of the project site is characterized by alkaline, poor-quality soil dominated by *Prosopis juliflora* (vilayatibabool) shrubs with a few tall trees suitable for meeting the light-concealment requirements of the Night Safari." This statement needs some correction. Research papers support

the assertion that ***Prosopis juliflora* acts as a pioneer species in alkaline and degraded soils and is eventually replaced by native broad-leaf tree species in later stages of ecological succession. Therefore, it is a successional species.** *P. juliflora* grows well in areas having high salinity or alkalinity levels, and can tolerate alkalinity as high as pH 9.5 (Singh et al., 1993). It will grow normally in situations where pH is below 9.6 and electrical conductivity (Ec) is below 1.20 ds/m. Similar observations were made in the saline grasslands of Banni (Kutch), where thickets of *P. juliflora* (>2000 trees/ha) have been recorded, on soils with a surface pH of 8.1-8.4 electrical conductivities of between 0.29-0.87 ds/m. It also can continue to grow in a scattered fashion (10-40 trees/ha) with 8.1-9.3 pH and Ec of 4.8-5.91 ds/m. Even in areas of high salinity, it can be planted by amending the soil with farm yard manure and gypsum.

5. The Chief Wildlife Warden, Uttar Pradesh has stated in his letter that the total number of trees at the project site is 24,274 of which 4808 trees are proposed to be felled and 877 trees are to be translocated. With this presumption that the project site has very poor quality of soil there is no need of felling a small shrub what to say of trees.

This is scientifically proven that trees ameliorate soil. The state government has also not given the enumeration list of trees species wise and diameter class wise.

CONCLUSION

There are genuine concerns from the large sections of the society against the establishment of a **Night Safari in the Kukrail Reserve Forest.** They contend that the project poses significant environmental risks and that the forest should be preserved in its natural state. The night safari will cause "irreversible damage" to the delicate natural ecosystem of the Kukrail Reserve Forest, which is considered one of Lucknow's last green lungs and helps regulate the local climate. Concerns have been raised over the proposed felling of around 4,808 trees (and damaging thousands more) for the project's infrastructure, which includes enclosures, roads, and a tramway. The forest is home to diverse flora and fauna, including leopards, jackals, over 200 bird species, and is an internationally recognized Gharial Rehabilitation Centre. The increased human activity, bright lighting (even if "moonlight" themed), noise, and visitor pressure associated with a night safari would severely disrupt the habitat and stress the animals.

Author is a former PCCF, Uttar Pradesh (M-9415786586)

Answers to Green Quiz: 1. Zerocircle seed co., 2. Why Waste, 3. CSIR-NPL Delhi, 4. Bengaluru, 5. Genius Chimp Ai, 6. Article-6, 7. Solar panels, 8. The Kodaikanal Observatory; 9. Physcomitrium patens (spreading earth moss), 10. Pakhala

For School Students: 1. Kunthipuzha River, 2. Dr.MGR Chennai Central Railway Station, 3. Shammika Kapoor, 4. The Seven Rules of Trust, 5. Thar Desert



Toucans of Costa Rica

K.Praveen Rao

Toucans are one of the most colourful arboreal birds of neo-tropical areas which covers South and Central Americas, Caribbean and southern Mexico. Toucans have become familiar to many through their frequent appearance in popular culture and marketing. In scientific classification they are part of Piciformes. Piciformes includes woodpeckers and other close relatives. Toucans belong to the family Ramaphistidae.

Toucans are of Small to medium-sized birds varying between 11 to 25 inches in size. These are non-passerines having large and colorfully patterned bills. The bills are very large compared to their body size. In some species the bill is more than half the length of its body. Though the bills are larger in size but they are lighter due to the foam like keratin in it. The distinctive bill, with nostrils atop the very base, serves with its large radiative surface to shed excess heat for the many species that spend much time in the upper forest canopy exposed to the hot tropical sun.

Most of the toucans do not show sexual dimorphism exception being the toucanets of genus Selenidera. Means both males and females look alike. The bills of females are a bit shorter. Their food consists of mostly fruits, but they also consume large amounts of animal material to fulfill their protein requirement. Along with fruits their food may consist of insects, small vertebrates like lizards and frogs, eggs of birds and their chicks. Food is swallowed by keeping it at the end of the bill and tossing it up to gulp in one go. In certain parts of the Neotropics, toucans are important predators attacking the nests of other species of birds. One may find intense aggression by bands of passerine birds on toucans to protect themselves.

Toucans inhabit a wide variety of wooded habitats, from lowland rainforest to open woodlands to montane cloud forests. They mostly restrict themselves to the primary forests which are undisturbed ecosystems with mature trees. They visit secondary forests for foraging. The primary forests provide large enough trees for nest cavities for them to breed.

General Habitat

Toucans nest in tree cavities. They lay eggs two to four eggs in the cavities excavated by the woodpeckers. As the bills of toucans are not meant for excavation and has limited use in excavation. Nests are typically lined with wood chips and regurgitated seeds of fruit. Toucans are monogamous and both parents participate in incubating and upbringing their chicks. Though the toucans are frugivorous, but they feed their chicks with animal food. These are resident breeders and do not migrate.

Similar to many other species of birds Toucans are also facing destruction and degradation of the habitats. In addition, these birds are actively hunted and trapped, both for food and traditional medicine, and for the pet trade. The extreme cohesiveness of the family groups of many species makes them very easy quarry for human hunters. The most endangered of these either have very small ranges or live in areas that are heavily affected by growing human populations.

Costa Rica is home to six different species of Toucans. I could see and photograph four species of Toucans and Toucanets. The details of Fiery billed Aracari and Yellow eared Toucanet I have gathered from the net. The species that are found in Costa Rica are -

Keel-billed Toucan (Ramphastossulfuratus): it has rainbow-colored beak (orange, green, blue), often found in lowland and foothill forests, especially on the Caribbean slope.

Yellow-throated Toucan (Ramphastosswai-nsonii): Formerly known as the Chestnut-mandibled toucan, this is the largest species in Costa Rica, featuring a yellow throat and bright red/yellow beak.

Fiery-billed Aracari (Pteroglossusfrantzii): Common on the Pacific coast, recognized by its fiery orange and yellow beak and a dark red patch on its belly.


Collared Aracari (Pteroglossustorquatus): A small, sociable toucan found in the Caribbean and Central Pacific, often seen in groups.

Emerald Toucanet (Aulacorhynchusprasinus): A small (12-inch) green toucan, making it difficult to spot in the high canopy, usually found in mountainous, cooler cloud forests.

Yellow-eared Toucanet (Selenideraspectabilis): Rare and elusive, this species lives in high-elevation Caribbean forests and is unique because the male and female have different color patterns.

Pictures in Page No : 30


Author is a former PCCF, Uttar Pradesh



Birthday Greetings

We wish the following born on the dates mentioned

A Very Happy Birth Day



S.No. Name of the Member	D.O.B.	S.No. Name of the Serving Officers	D.O.B.
Sarva Sri		4. B. Shafiullah	13-03-1976
1. D. Satyanarayana	11 03 1949	5. Ch. Nagabushanam	15-03-1967
2. A. Ashaiah	15-03-1949	6. Smt. Shivani Dogra	17-03-1980
3. D.V. Jayam Prasad	15-03-1949	7. Tirumala Ravi Kiran	25-03-1985
4. S.M. Rasheedullah	19-03-1939	8. Vinay Kumar	26-03-1968
5. I. Janardhan	23-03-1954	9. D. Phani Kumar Naidu	27-03-1988
6. K. Muralidhar Rao	01-04-1946	10. M. Guru Prabhakar	28-03-1965
S.No. Name of the Serving Officers		11. M. Bhavani Shankar	28-03-1981
Sarva Sri		12. G. Satish	29-03-1984
1. Ravi Sankara Sarma Madugula	07-03-1967	13. V. Srinivasa Rao	01-04-1965
2. Kampa Srinivas	10-03-1966	14. Y. Srinivasa Reddy	03-04-1971
3. P. Srinivasa Rao	10-03-1966	15. Chalumari Santhi Swaroop	05-04-1968

Secretary

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



Role of Forester in Present Legal Scenario- A Legal and Disciplinary Perspective

Dr. Akula Kishan

Introduction

Foresters have historically been the first line of defence for forests and wildlife, working under difficult terrain, limited resources, and constant pressure. Traditionally, their authority was respected, their discretion rarely questioned, and their field decisions accepted as part of administrative necessity.

However, the present legal environment has transformed this reality. Increased judicial scrutiny, expanding human rights jurisprudence, service law discipline, and heightened public awareness have significantly altered the manner in which foresters are expected to discharge their duties.

The Changing Legal Landscape

In the contemporary scenario, forest administration operates under:

- a) Constitutional safeguards of personal liberty
- b) Judicial oversight by High Courts, Supreme Court, and National Green Tribunal
- c) Service jurisprudence emphasizing accountability
- d) Criminal law scrutiny similar to that applied to police officers
- e) Courts today no longer distinguish between "field exigencies" and "legal compliance." Statutory power must be exercised strictly in the manner prescribed, or not at all.
- f) Good intention or conservation motive, by itself, is no longer considered sufficient protection.

Good Faith Is Not a Legal Shield

Service law has firmly settled that good faith does not excuse procedural violations. Courts have repeatedly held that negligence, carelessness, or deviation from prescribed rules constitutes misconduct, even in the absence of mala fides or personal gain.

In the case of *State of Orissa v. Ganesh Chandra Jew* (2004) 8 SCC 40 the Apex Court held that "Good faith" means due care and attention. It is not enough to show honesty of intention; the person must also show that reasonable care and caution was exercised.

In the case *Inspector of Police v. Battenapatla VenkataRatnam* (2015) 13 SCC 87 it was held that the defence of good faith and protection thereof applies only when the act is reasonably connected to official duty. If act is excessive or wholly illegal, good faith protection fails.

For foresters, this means- Acting "in the interest of forest protection" does not justify excess, results achieved cannot legitimise the irregular methods. Procedural lapses alone are sufficient for disciplinary action

Thus, enthusiasm or sincerity, if unsupported by procedure, may expose the officer to serious consequences.

Procedural Compliance: The New Core of Authority

The authority of a forester today flows not merely from designation, but from documented compliance.

If an action cannot withstand judicial scrutiny, it is treated as misconduct.

Departmental Proceedings are Independent and Unforgiving, a crucial reality for foresters is that departmental proceedings are independent of criminal cases. Even in cases where (a) Forest offence cases end in acquittal (b) Accused are discharged on benefit of doubt (c) Confiscation fails on technical grounds.

Disciplinary punishment can still be upheld if: (a) Procedure was violated

(b) Instructions or circulars were ignored (c) Authority was exceeded, the disciplinary case follows.

The standard applied in service law is preponderance of probability, not proof beyond reasonable doubt.

Use of Force and Detention: High-Risk Areas

Courts have consistently emphasized that personal liberty is inviolable. Forest staff exercising powers of detention or restraint are expected to strictly comply with statutory safeguards.

Any unauthorized detention, excessive force, prolonged restraint and informal

“custody” is viewed not as forest enforcement, but as illegal deprivation of

liberty.

Field conditions, risk of smugglers, or urgency of situation are no longer accepted as blanket defences unless fully recorded and justified.

Inaction Is Also Misconduct

Ironically, the present system penalises foresters not only for over-action, but also for inaction. Common allegations now include: Failure to prevent encroachment, delay in booking offence

cases, Lack of supervision, presumed collusion based on silence.

Thus, foresters face a dual risk for acting beyond law in the interest of Forest Conservation and also for not acting decisively in a given situation.

This places unprecedented pressure on field staff.

What Actually Protects a Forester Today

In the present scenario, the strongest protection for a forester is not physical courage, but legal defensibility. The safeguards are (a) Written authority – oral instructions offer no protection (b) Meticulous documentation – photographs, GPS, panchanamas, diaries (c) Strict adherence to circulars and SOPs

(d) Collective decision-making in sensitive cases (e) Timely reporting of constraints, even when action is not taken.

Courts and disciplinary authorities respect restraint, caution, and transparency more than aggressive enforcement.

Conclusion

Foresters can still discharge their duties in the present legal environment, but the nature of their role has fundamentally changed. They are no longer viewed merely as guardians of forests, but as statutory authorities whose every action must be legally justifiable. The shift is from authority-based functioning to procedure-based governance.

The forester of today must therefore be a field officer, a careful administrator,

a legally conscious decision-maker. Only those who adapt to this reality can effectively protect forests and protect themselves.

The author is a retired IFS officer/CF, Telangana cadre. He authored many books on Forest Act and Allied Acts, the Forest Code and drafted various amendments. He is a practicing advocate in APTG High Courts. M-70930 06261.



Green Quiz – March 2026

Quiz Master: Dr. K. Tirupataiah, IFS (R)

1. What is the name of the company co-founded by Neha and Varun Jain that offers alternative to single use plastic through seaweed for films, coating and paper?
2. What is the name of the movement started by Garvitha Gulhari to create awareness on water shortages and problems for future generations?
3. The environmental pollution monitoring equipment couldn't be tested in India earlier. Recently, in which facility in India was the world's only second National Environment Standards lab set up?
4. Which is the first city in India to launch first ward-level climate action plan favoring neighborhood-specific fixes for climate adaptation?
5. A Chimp brought from West Africa to the Kyoto University in 1977 (died recently) recognized more than 100 Chinese characters, English alphabet and 11 colors. Its nick name?
6. India signed the carbon crediting mechanism in Aug 2025. Under which article of the Paris agreement is this item covered?
7. Lot of arable area is being put to produce biofuels and solar power. Which of these two is

more efficient for a better landuse?

8. Which observatory in South India, located in the Palani hills, provides the "world's longest continuous daily records of the Sun in the World"?
9. Which moss that was left attached to the outer surface of the ISS by the Japanese astronauts for 283 days, not only survived but grew again when brought back to the Earth?
10. What is the name given to the 'fermented rice' popular as a traditional Odiya dish that is good for gut health?

For School Students

1. Which river flows through the Silent Valley National Park in the Western Ghats?
2. Which railway station in the Southern Railway zone installed kiosks that are UPI enabled for book vending?
3. Which popular Bollywood actor formed the first "internet pioneer club of India"?
4. What book did Jimmy Wales, the co-founder of Wikipedia write?
5. Which desert is the World's most populated?

Answers on page no :52

Power of kindness

Too often we underestimate the power of a touch, a smile, a kind word, a listening ear, an honest compliment, or the smallest act of caring, all of which have the potential to turn a life around.

Leo Buscaglia



LEGAL NOTES

Sri. K. Buchiram Reddy, IFS (R)

The Sacred Groves of Rajasthan, which hold immense ecological value and are deeply revered in local culture, urgently required formal recognition and protection to safeguard their preservation. The application in the case, Aman Singh, has given a list identifying 100 sacred groves in Rajasthan. The list is taken into consideration by appropriate authority. During the process of identification, the court said. However, the list is not always inclusive/exhaustive, the court said.

The Forest Department of Rajasthan was directed to carry out detailed on ground –mapping of the identified groves and classify them as ‘forests’ as recommended by the Central Empowered Committee’s report dated 01.06.2005. “The classification should not be on the size or the extent of the groves but instead, focus solely on their cultural or ecological significance to the local community” the order said.

Further given ecological and cultural importance to the sacred groves, it is recommended that they be granted protection under the Wildlife Protection Act 1972, specifying through Section 36-C, which allows the declaration of ‘Community Reserves’. This would legally protect these areas recognizing their role in biodiversity conservation and cultural practices. Sacred Groves / Orans should be identified, and where appropriate declared as community reserves to ensure their preservation and prevent unauthorized land use changes. The State Government in collaboration with local communities shall initiate this process to safeguard both local communities should initiate this process to safeguard both their ecological and cultural value.

In order to ensure compliance of the directions, The Ministry of Environment, Ecology, Forest

and Climate Change of India in Collaboration with the Forest Department, Government of Rajasthan should constitute a 5-member Committee preferably headed by a Retired Judge of the Rajasthan High Court. The Committee shall include one Domain Expert, preferably a retired Chief Conservator of Forests, a senior officer from the Ministry of Environment Forest and Climate Change, Government of India, and a senior officer each from the Forest Department and Rural Development, Government of Rajasthan. The terms and conditions of the Committee shall be jointly finalized by the Union of India and the State of Rajasthan.

The Apex Court also proposed certain suggestions to promote sustainable conservation of sacred groves and empowers the communities associated with that historically protected sacred groves and designate the areas as ‘Community Forest Resource’ under Sec. 2 (a) of the Forest Rights Act.

These communities have shown a strong cultural and ecological commitment to conservation and play a role as custodians of sacred groves and the fact should be formally recognized. As per Sec. 9 of the Forest Rights Act they should be empowered along the Gram Sabhas and local institutions shall continue protecting wildlife, biodiversity, sustainable conservation for the future generations.

The matter was considered by a three member Bench of the Supreme Court comprising The Hon’ble Justice B.R. Gavai, The Hon’ble Justice S.V.N. Bhatti and The on’ble Justice Sandeep Mehta and the order wassed on 18.12.2024.

Source: Internet KBR

The author is Dy.C.F (Rtd). He is on Phone 966 609 7788; and E-mail ID ; keesrabuchiram@gmail.com



ANDHRA PRADESH FOREST DEVELOPMENT CORPORATION LTD.

Plant a Sapling and Protect the Environment



A fully owned, financially well managed State Government Company. Raising and maintaining massive plantations to cater to the needs of the wood based industries.

- Watershed approach adopted for raising plantations, to make them ecologically sustainable, socially acceptable and commercially viable, with the long-term goal to improve the site quality of plantation areas.
- Largest grower of about 32,000 ha. of Eucalyptus Clonal plantations in the country and is harvesting about 2.50 Lakh mt. of Pulpwood every year. Besides this, it has Bamboo, Cashew, Coffee and Teak Plantations over 13,000 ha.
- The Corporation has bagged "**Flavour of India - Fine Cup Awards**" for producing quality coffee during the years 2003, 2005, 2007 to 2016.
- The Corporation has bagged "**CAPEXIL Excellence in Export Awards (Top)**" for export of Red Sanders wood by earning a total foreign exchange of Rs.852.50 crore during the years 2017-18, 2018-19 and 2021-22.
- Diversifying its activities through promotion of Eco-Tourism.

Vice Chairman & Managing Director,
A.P. Forest Development Corporation Ltd.,
PVS Land Mark, 3rd Floor, Near APIIC Towers,
Mangalagiri, Guntur District.
Andhra Pradesh – 522 503. Ph: 08645-297211, 297221
website: <https://apfdcl.com> e-mail: vcmd_apfdc@yahoo.co.in



Shivparvattia glanduligera

Photo: Lemsing Lepcha, IFS (Retd)

Registered with RNI R.No. Teleng/2000/02/2185

Postal Regn. No. D/RNP/HCD-1154/2024-2026

Posting at BPC-IV Patrika Channel, Nampally, Hyderabad-500001

To _____

If Undelivered, Please return to: Editor, VANAPREMI, Office of the Principal Chief Conservator of Forests, Aranya Bhavan, 5th Floor, Room No.514, Saifabad, Hyd - 500 004, T.G.

Date of Publication-26/02/2026; Total Pages: 60; Date of Posting: 4th or 5th of Every Month.

Printed & Published by **Qamar Mohd. Khan** on behalf of **Association of Retired Forest Officers**,

Printed at **Venu Graphics**, D.No.2-1-392/1/6, Fever Hospital Signal, Nallakunta, Hyderabad-500044 and

Published from Room No. 514, 5th Floor, Aranya Bhavan, Hyderabad-500004.

RNI Regd. No. Teleng/2000/2185 | **Editor: Dr. Kota Tirupataiah, IFS (R)** | Email: tirupataiah.tsfa@gmail.com | Ph: 88855 32021