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No.10

Special Issue on Wildlife



Photo by Sri Narahai Kanike with thanks

Zitting cisticola (streaked fantail warbler)



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T.S. Forest Development Corporation Ltd.,
3rd Floor, UNI Building, A.C. Guards, Hyderabad - 500004.
Telephone Nos. 040-23395750/23392652 Fax: 040-23326420
Email: vcmd.tsfdcl@gmail.com, www.tsfdc.telangana.gov.in

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Editor : Qamar Mohd. Khan**Associate Editor : D. Nagabhushanam, I.F.S. (Retd.)****The Association of Retired Forest Officers, Telangana & Andhra Pradesh**

(Regd. No. 557/1990)

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- Vice President** : Sri. T. Narayana Swamy, I.F.S.
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2. **Editor** : Qamar Mohd. Khan
Tel: 040-40205831, 9849233624
e-mail : qamar_asima@yahoo.com
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EDITORIAL

Wild Life Week in India: Wildlife Week is celebrated all over the country in the month of October from 2nd to 8th every year with the view to preserve the fauna, means the animal life of the country. The wildlife week is celebrated in India every year from 2nd October, because this day is also the birth day of Mahatma Gandhi who was an apostle of Ahimsa. Mahatma Gandhi said “the greatness of a nation can be judged by the way its animals are treated”. It was first started in the year 1952 with the great vision of saving the life of the Indian animals by taking some critical steps. Animal life is very necessary to maintain the ecological balance in Nature. Hence it is very important for the people to save Wildlife to save the Natural Environment. Wildlife plays a significant role in maintaining the ecological equilibrium of nature. The presence of wildlife is also an effective way to assess the quality of the environment. To maintain a healthy ecological balance on this earth, all living creatures should be treated as important as humans. Each organism on this planet has a role to play in the ecosystem but sadly many of the world's animals are gradually crowding up the endangered list due to habitat loss, poaching, and fragmentation of the wildlife habitat for railway lines, roads and canals and so on.

Why should we protect wildlife of our country? Is it only because wildlife is beautiful? Or is it only due to human's kindness towards wildlife. Can we live on this planet without wildlife? The answer is **No**. Without wildlife no living organism can survive on this planet. Physicist Albert Einstein once said that “If the bee disappeared off the surface of the globe then man would only have four years of life left. No more bees, no more

pollination, no more plants, no more animals, no more man”. It is because bees pollinate about 100 species of plants which produces our food. Hence it is our requirement or dire necessity to save our countries wildlife for continuation of our own race. In absence of human beings on this planet all plant life and wildlife can survive very well but it is impossible for us to survive without wildlife.

An ecosystem is a community of living organisms in conjunction with the nonliving components of their environment, interacting as a system. These biotic and abiotic components are linked together through nutrient cycles and energy flows. The ecosystem is all about relationships between different organisms connected through food webs and food chains. Even if a single wildlife species gets extinct from the eco-system, it may disturb the whole food chain ultimately leading to disastrous results. Consider a simple example of a bee that is vital for growth of certain crops due to their pollen carrying roles. If bees get reduced in numbers, the growth of food crops would definitely lower owing to lack of pollination. Similarly, if specie gets increased in number, again it can have an adverse effect on the ecological balance. If the king of the forest ‘tiger’, being at the top of the food chain disappears, it would increase the population of grass eating mammals like deer and sambar. Without the tiger to control their population, these animals would ravage the vegetation of the jungles, destroying the habitats of smaller animals and insects. These herbivores and insects will then move to farmlands in search of food, thus impacting the food resources of

the human population. Thus, saving wildlife plays a great role in ensuring a check on the ecological balance thereby, maintaining a healthy eco-system.

A huge number of plants and animal species are used to benefit humans in one way or the other. Many of the medicines such as aspirin, penicillin, quinine, morphine and many more have been derived from plants. If we talk about the ancient medicinal system of Ayurveda, it has also been using extracts and juices from various plants and herbs to cure problems like blood pressure, diabetes and many other neurological problems since ages. It's not only the plants which are useful; many of the extracts from animal species are rich in nutrients and antioxidants. For instance, the oil from liver of Cod fish is rich in Omega 3 and Omega 6 antioxidants that helps fight ageing, chemicals derived from shrimps and lobsters are used in treating fungal infections, venom of Cobra is used as anti venom which is cure for snake bite, and the list does not end here. Today, various species of animals are also being studied and researched upon to find cures to deadly diseases like cancers, Alzheimer's and Parkinson's. If wildlife is not preserved today, there would soon be a time when human race would also be in great danger.

Today wildlife is facing many threats for their survival and many species and the number of every species is reducing day by day. At the beginning of 20th century it was estimated that there were 40000 tigers in our country. Indian tiger census conducted *in* 1972 revealed the existence of only 1827 tigers and if we see the latest number of tigers in our country it is only 2,967 in nature, even after taking all the care to save them since last 47 years. The following are

some of the main reasons for the extinction or reduction of number of wildlife, destruction of habitat, lack of food, water & shelter, fragmentation of wildlife habitat, hunting, uncontrolled grazing by cattle in the reserve forest, climate change (less rainfall and increase in the temperature) man animal conflict and forest fires.

Readers know about fire in the Amazon rain forest. An alarming cluster of wildfires are now burning in the Amazon rainforest which has destroyed many species of wildlife present in that forest. The Amazon rainforest is the world's largest tropical forest. It's an area with torrential rain that almost never burns on its own, yet the blazes have burnt for more than a month. Amazon is not the only region that's burning. More than 21,000 square miles of forest have gone up in flames in Siberia. A wildfire in the Canary Islands forced more than 8,000 people to flee. Denmark dispatched firefighters to Greenland to combat a wildfire approaching inhabited areas. California, which suffered, its most destructive wildfire season on record is 2018. Recently there were forest fires in Queens land of Australia and Hundreds of people have been evacuated from their homes. There was heavy fire in the Malaysia's forest which has created a thick haze and this haze forced closure of about 400 School in Malaysia apart from destruction of many species of wildlife. In our country also from beginning of March to end of June every year in most of the areas in our country, forest fires occur and majority of these fires are manmade. These fires were unknown to us about 50 years ago. The wildlife which is the worst sufferer in these forest fires are micro organisms, insects, birds, reptiles, amphibians and small mammals and their young once.

Large numbers of cattle enter and graze in all types of forests, including sanctuaries (e.g. all sanctuaries in our country, which is permitted in Wildlife Protection Act) throughout the year destroying the habitat, creating competition for food and water for the wildlife. Due to reduced rainfall and increase in the temperatures, during the summer water is not available in the forest and the wildlife is entering into agricultural fields or village limits to quench their thirst, where either they are killed by human beings or chased and killed by dogs. Unfortunately if any carnivore comes to villages or agricultural fields for water either it will attack cattle or human beings in which human beings get severely injured or killed. The people develop enmity and try to kill the carnivore by poisoning the kills to take revenge and stop further entering of the carnivores in to villages, which are forced to come to the fields to quench their thirst.

Governments in our country have declared 104 National Parks, 551 Sanctuaries, 127 community reserves and 88 conservation reserves covering an area of 165088.36 sq. kilometers in different states for strict protection of wildlife. At present protected areas, including national parks, wildlife sanctuaries, conservation and community reserves, cover 4.9% of total geographical area of the country. India's Forest and environment ministry is considering doubling the number of protected areas such as national parks and wildlife sanctuaries from the current 870 over the next few years. There are 50 tiger reserves in India which are governed by Project Tiger which is administrated by the National Tiger Conservation Authority. India is home to 70 percent of tigers in the world. Wildlife Protection Act 1972 was enacted by

Government of India during 1972 and amended it six times till today, to save our countries wildlife. It is essential to dig a trench all along the periphery of Sanctuaries and National Parks to stop entry of human beings and cattle into the protected areas and this will also prevent wildlife coming out of Sanctuaries or national parks. This will also definitely reduce the man animal conflict.

Peoples' active participation in the conservation of wildlife is very much needed for the survival of many endangered species. Without the active participation of people it is almost impossible to protect our wildlife. Government alone will not be able to do this and people's participation is the need of hour. Hence Government should bring awareness and educate the people in this regard. The Government should start bringing awareness in the Schools and Colleges and take the students to the Sanctuaries National parks and Forest areas to educate them about the necessity of saving or protecting our wildlife. In this regard Warangal Circle and Division is doing good work, arranging trips to Sanctuary or forest areas for younger generation, School and college students, educating the local people to save our wildlife. Few WhatsApp groups are also formed to save forest and wildlife of the area.

Vana Premi wishes that central and state Governments will bring awareness about the importance of wildlife to the younger generation, students of schools and colleges throughout the year without observing only the wildlife week, and take full support of young generation of our country to protect our forests and wildlife. **QMK**

LETTERS TO THE EDITOR

Dear Editor,

I got to read a copy of Vana Premi from my father, Sri S.B. Deshpande, who is a retired forest officer. I was impressed with the magazine and am now a regular subscriber myself. The articles are interesting and well researched. It keeps one updated on contemporary issues related to environment, forests and wildlife. I congratulate your team for a wonderful effort. Keep up the good work!

Sincerely,

Gp. Capt. Devdutt S Deshpande, Chief Flying Instructor, Air Force Academy, Dundigal, Hyderabad

Sir,

I wish to offer my comments on our esteemed journal of Sept. 2019. And if I want to do justice, it will be again a long essay. Therefore I want to confine myself to the article: "Blowing the Trumpet of SFRC" by Hari Prasad. He has taken enormous pains to garner material on the alumni of SFRC. But I feel there is still enough scope to gather more information and improve the text. Bio-Data of eminent "Old Boys" can be added to the good work. KK Nair, CV Konda Reddy, RD Reddy, Malla Reddy, Pratap Bahadur, TC Kesava Rao. KP Muni Swamy, Dr. Chandra Shekharan, K. Balachandran Thampi, Dr. S. Chinnamani etc are all the best students of MFC/SFRC. Hari Prasad can take up a project on "The Legends of MFC/SFRC" and publish a book and that would be of great value. I am willing to help him in this task.

K.B.R. Reddy

Dear Sir,

This is in particular reference to the article "Blowing the Trumpet of S.F.R.C." published in September 2019 issue of Vana Premi. The author, Mr. Hari Prasad, deserves compliments for his initiative to document the accomplishments as well as achievements of some foresters who passed out from the portals of Southern Forest Rangers College, Coimbatore. It is a pioneering work and we hope to hear more and more about unsung heroes in future. Documentation has been the weakest area in forest administration and collection of information about noteworthy contribution made by many in the cause of forests becomes that much more difficult. There will surely be many more foresters whose excellence lies buried. It is hoped that foresters from other prestigious forest institutions will also take cue from the author.

Mr. Hari Prasad sounded a bit apologetic by giving the caption "Blowing the trumpet.....". Though his modesty made him to say so, it is an established fact that the SFRC as an institution has stood the test of time for more than a century (despite change in name) and the author has rightly given the credit to the institution for the contribution made by the alumni.

Regards,

-J V Sharma

ZITTING CISTICOLA OR STREAKED FANTAIL WARBLER

Source: internet

The *zitting cisticola* or streaked fantail warbler (*Cisticola juncidis*), is a widely distributed Old World warbler whose breeding range includes southern Europe, Africa (outside the deserts and rainforest), and southern Asia down to northern Australia. A small bird found mainly in grasslands, it is best identified by its Rufous rump; as well, it lacks any gold on the collar and the brownish tail is tipped with white. During the breeding season, males have a zigzagging flight display accompanied by regular "zitting" calls that have been likened to repeated snips of a scissor. They build their pouch nest suspended within a clump of grass.

Taxonomy: The *zitting cisticola* was described by the naturalist Constantine Samuel Rafinesque in 1810 and given the binomial name *Sylvia juncidis*. The type locality is Campofelice di Roccella in Sicily. Current genus name *Cisticola* is from Ancient Greek *kisthos*, "rock-rose", and Latin *colere*, "to dwell". The specific *juncidis* is also from Latin and is a diminutive of *iuncus*, "reed". Across their wide distribution range, several variations in populations have been noted and as many as 18 subspecies are recognized. They differ slightly in calls, plumage and size and some have been considered full species in some taxonomic treatments. The nominate form is found in southern France, Greece, Turkey, Sicily, Corsica and Egypt while western Portugal and

Spain have *cisticola*. The population in Palestine, Syria, Iraq and Iran is *neuroticus* while the northern and eastern African population is *uropygialis* and *perennius* (further south). Gabon, Angola, and southern Africa are home to *terrestris*. The population in the Western Ghats of India, *salimalii*, does not show seasonal tail length variation as in *cursitans* of the plains of India and dry-zone of Sri Lanka, which has a longer tail in the non-breeding season. Population *malaya* is found in southern Southeast Asia, *tinnabulans* further north in southern China while *brunniceps* is found in Korea and Japan. Other populations include *nigrostriatus* (Philippines), *constans* (Sulawesi), *fuscicapilla* (east Java), *leanyeri* (northern Australia), *normani* (northwest Queensland) and *laveryi* (northeast Australia). This genus is sometimes split off with various other southern warbler genera and given family status as the Cisticolidae. This species was previously known as **Fan-tailed Warbler**, but the current name gives consistency with the many tropical cisticola species, and avoids confusion with an American species also named fan-tailed warbler.

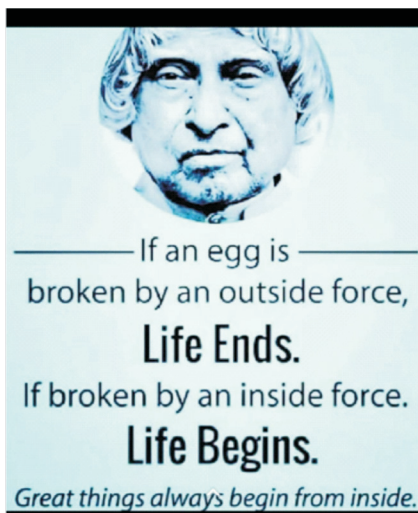
Description: The *zitting cisticola* is 10 to 12 cm (3.9 to 4.7 in) in length. It is brown above, heavily streaked with black markings. The under parts are whitish, and the tail is broad,

white-tipped and flicked frequently, giving rise to the alternative name for the species. The adult males have fewer crowns streaking and more back marking than the females, but there are no great differences between the sexes or the eighteen geographical races. The absence of, a nuchal collar separate it from the golden-headed *cisticola* (*Cisticola exilis*). In the non-breeding season, they tend to skulk within the grass and can be hard to spot.

Habitat and Distribution: This species is found mainly in grassland habitats, often near water. Most populations are resident, but some East Asian populations migrate south to warmer areas in winter. In the Himalayas, they ascend to about 1,900 m (6,200 ft) during summer but are below 1,300 m (4,300 ft) in the winter. This species is a rare vagrant to northern Europe, mostly as a spring overshoot. Its European range is generally expanding, although northern populations are especially susceptible to hard

winters.

Behavior: *Zitting cisticolas* are very small insectivorous birds *Zitting cisticola*'s, sometimes found in small groups. The breeding season is associated with the rains. Two broods a year occur in many regions. Males are polygynous but some are monogamous. The male builds the initial nest structure deep in the grasses, and invites females using a special display. Females that accept the male complete the nest. The nest is made by binding living leaves into the soft fabric of felted plant-down, cobwebs, and grass. The nest is a cup shape with a canopy of tied-together leaves or grasses overhead for camouflage; 3–6 eggs are laid. The female incubates the egg. The eggs hatch after about 10 days. More than one brood may be raised. Females change their mates frequently and rarely stay within the same territory, while males are less mobile. Females can sometimes breed in their first year.



FOREST MARTYRS DAY 2019

By

K.B. R. Reddy

Forest Martyrs Day this year was observed on September 11 at the precincts of the Nehru zoological Park to commemorate the sacrifices made by the personnel of the State Forest Department. The venue was well decorated with flowers. The commemoration parade consisted of a contingent of police, Forest Officers in uniform and the trainees of the Telangana State Forest Academy. The Chief Guest for the occasion was the Forest Minister Sri Allola Indrakaran Reddy. The other guests were the senior officers of the Forest Department and Retired Forest Officers.

The programme commenced at about 10.00 am when the chief guest after receiving the general salute is lead to the dais while the other guests followed. Sri Swargam Srinivas, APCCF read out the roll of honour. The Hon'ble Chief Minister sent his message for the occasion which was read out.

The Chief Minister in his message said that forests are a valuable gift of nature to humanity. The state will prosper when the forests are adequately rich. To achieve that goal and for maintaining ecological equilibrium, the state has embarked upon the scheme of *Telangana-Ku-Haritha Haram* when crores of seedlings are planted for posterity. The forest staff is struggling in protecting the forests without fear for their lives. In their fight against encroachers, smugglers and poachers they have lost their lives and reached martyrdom. The chief minister paid homage to all those who died in harness and following the brave hearts gave a slogan to the present generation

of foresters— *Jungal Bachao: Jangal Badhao*.

The Hon'ble Forest Minister recalled, how about 360 persons belonging to the Bishnnoi tribe were mercilessly killed in the year 1730 AD when they defied the order of the ruler to fell Kejri trees in Rajasthan. In commemoration of their sacrifice in trying to protect the trees, the Government of India has appropriately decided and directed all states in the country to observe the 11th day of September as "*Ban Shaheed Divas*". Highlighting the programmes of Forest Department like strengthening of forest boundaries, supply of vehicles for improving mobility of the staff, increasing the number of water holes, raising grass lands for the benefit of herbivore, involving gram panchayaths in raising nurseries and planting them out in the field, expressed deep sense of sorrow and sympathy to families of all those martyrs who laid down their lives in performing their duty.

In Telangana state alone 21 officers of various ranks have lost their lives while protecting forest and its dumb denizens. On this solemn occasion PCCF Smt. R. Sobha exhorted the officers and staff to pledge and rededicate ourselves to the cause of forest protection and development. The Hon'ble Minister, officers and other invitees proceeded to the Martyrs Memorial and placed wreaths. The Parade was brought to shok and the bugler sounded the last post when two minutes silence was observed for the brave souls to rest in peace.

The solemn programme thus came to an end.

TIGER SEEKS CO-EXISTENCE WITH MAN; BUT THE MAN?

By

J. V. Sharma

It was summer, 1960. The period corresponds to my tenure as Forest Range Officer, Working Plan Party, Karimnagar, tasked to prepare working plan for the forests of erstwhile composite Karimnagar Division which included Kodmial, Jagtial, Manthani, Mahadevpur and Tadcharla Ranges. The Division was subsequently reorganized to form Karimnagar East & West Divisions. It was in fact to be a revision of the first formal Working Plan prepared by Mr. Maudood Ahmed Khan for ten years ending 1960. But our Working Plan Officer, Mr. C. Sarvotham Rao was insistent that he have the freedom to prepare the plan all afresh. He took the deviations in areas of annual coupes so seriously, that he pitched for the resurvey of all forest blocks, not relying upon even the Survey of India specially prepared forest maps on 2"=1 Mile scale during the tenure of Mr. Claudius as Surveyor General. My feeble pleadings that our resurvey with prismatic compass & chain is no match to technical support available to Survey of India, did not cut ice with him and I had to raise the white flag for fear of inviting his ire. Very strangely, the CF, WP Circle and the CCF okayed the WPO proposal. This, though an avoidable burden to the small WP staff of two Ros and One Dy. RO, provided an opportunity to go around each forest block and to camp at every village abutting the forests. It was a very rich experience for us in knowing the forests and their immediate surroundings intimately.

Now a word about Rampur village. *It was a small non-descript village like thousands of villages in interior Telangana. Parkal-Mahadevpur road was under formation and a rickety private bus used to operate from Parkal to Bhoopalpally. Bhoopalpally which now is the District headquarters of Jaishankar Bhoopalpally District was itself a small sleepy village and there were just two small huts on road-side while the village was a little away. There was no suitable place for stay in the village and the Range Officer and his staff used to make themselves comfortable in one hut while a tribal family used to sell some khara and tea during daytime from the other hut. DFO and WPO, when on tour, stayed in the tent specially pitched for the purpose in the large open expanse to the east of the road. Because of non-availability of camping facility, I used to travel the extra distance to Rampur village by bullock cart where there is a forest rest house.* It was rather absolutely necessary because the most valuable forests of Singaram, Bayakpet, Azamnagar etc. of Singaram South Block existed further east of Rampur. It was a marvelous location for the Forest Rest House (FRH) as it was constructed at an elevated place overlooking the village tank with a wonderful view of the entire lake and its foreshore. It was a large lake by local standards and surrounded by thick forests on three sides. There was water in the lake even in summer and one could see herds of deer, sambar, nilgai etc. rushing to water in abandon, particularly in evenings and strolling leisurely in the open foreshore area after quenching the thirst. Some enterprising forester of yesteryears got an earth-mound made in front of FRH, a little away towards the lake to provide ring-side view of the lake and foreshore for visiting foresters to sit on chairs placed on the mound. You don't have to go to the forest to see the wildlife; you can see wildlife from your rest house. That was the specialty of Rampur FRH.

As decided by our WPO, we surveyed the boundaries of all forest blocks. It was tough and time-taking as well. It took months for three of us to survey those hundreds of miles of boundary. As feared, our effort did not provide any solution to the problem and we had to eventually fall back to Claudius sheets obtained from Survey of India by a special indent. These are exclusive forest maps on larger scale to accommodate details for use in the field and were prepared by SI on a special

requisition placed by the Nizam's Government in late twenties and early thirties of 20th century. As Mr. Claudius was the Surveyor General during the corresponding period and the survey was conducted under his supervision & guidance, as printed on the maps, we used to refer to them loosely as Claudius Sheets. All the forests of Nizam's Dominion were surveyed and we used to transfer all the details of annual felling areas, felled areas, stock map details etc. on these maps and they were a regular companion to every field forester. These maps are now out of circulation and the forest administration appears to have lost track of the fund of information the maps contained. These maps are particularly valuable to determine the land use position of corresponding period in general and the limits of forest areas originally existed in particular. I suggest the present forest administration initiate action to trace these maps from the archives of Survey of India.

We took up stock mapping of forests and completed the work in most of the well-forested blocks by 1960 summer and the WPO started the serious exercise of future management proposals. But the proposals can take shape only after the Conservator of Forests; Working Plan Circle okays the stock-mapping. Mr. Sharfuddin Khan (M S Khan) the CF, WPC started his career as Extra-Assistant Conservator of Forests, Karimnagar. He was a great field forester who left indelible footprints in the field of forestry and especially in research. That he knew the forests of Karimnagar as the back of his palm was an additional challenge for us. He planned a month-long inspection tour of Karimnagar Division and asked the WPO to chalk out the detailed programme. He desired the territorial DFO to make himself available on tour to facilitate discussions on the field. It was in this context the CF, WPC Mr. Khan, the WPO Mr. Sarvotham Rao and the DFO Mr. Sakhamam with M. Ramachandra Reddy, RO, Tadcharla and myself in toe along with the usual retinue, descended on Rampur in the evening hours.

The CF occupied one suite and the other suite was to be shared by the other two officers. Mr. Ramachandra Reddy arranged accommodation for both of us in a hut near the village away from FRH. Our luggage was sent to hut where we were to stay. The three officers settled down in chairs placed on the mound overlooking the lake. Soon they saw a herd of deer in foreshore area running towards water. After some time another batch came. Batch after batch they were hundreds. Many of them were seen strolling leisurely. It was a scene to cherish.

Dinner was ready. While going to dinner table, The WPO called me and told that I should be available at hand should the CF seek any information after dinner and that I should stay at the FRH itself. Saying this, he went inside and there was no time to indulge in further conversation. It was a piquant situation. I told Reddy that I cannot flout WPO's instructions and asked him to go his camping place. Evidently, he was feeling embarrassed. The three officers were to sleep in the front verandah and the staff comprising the drivers, attenders etc had already occupied rear verandah. I cannot fit at either of places. There were hectic discussions between Mr. Reddy and his staff. They found a place for me to sleep for the night.

There is a dilapidated/abandoned structure at the head of the tank-bund, not far from the FRH. In all probability the PWD people must have taken up construction of a rest house with an entry from tank bund and the interiors jutting into water front. It is an excellent idea given the picturesque location and fairly large size of the lake. Added attraction is the abundant wildlife. Foundation works were over and the construction was abandoned when a couple of walls in superstructure were initial stages. There is a raised platform (*Chabuthara*) behind the wall facing the water front. The place was cleared and cleaned in matter of minutes and a cot was brought and the bed with a

mosquito net was made. A lantern was kept and pots of water brought. I had to force Reddy to go after we had dinner. Mr. Reddy strictly instructed a person to sleep on the *chabuthara* to keep company to me. After Reddy left I asked the person to go away as it was very inconvenient and unsafe for him to sleep on the floor.

The next day, I woke up at about 6 AM, brushed my teeth and waiting for tea. The DFO, Mr. Sakharam slowly walked in with a brush in mouth. Even as I was rising from cot to wish, he asked me whether it was the place where I slept the last night. When I said yes, he shouted at me in a loud voice whether I have any sense of proportion to sleep alone at a godforsaken place where there is risk for life and that I have no concern for my parents in the event something untoward happened to me. He turned his ire on his RO that he failed to provide risk-free accommodation to a colleague and has chosen a safe place for himself shamelessly. He was hysterical and shouting loudly. He was not prepared to hear anything I was trying to say. Staff who heard the shouts came running. Finally it transpired that a tiger paid a visit to the place last night and our officers also had a good look at it though from a distance.

All the information arranged in order, the story was something like this: Well after midnight, one of the persons sleeping in the rear side of FRH came out to answer nature's call and felt he saw an animal- like thing at a distance in the bushes. He silently alerted a few others also. Having seen many herbivores in the evening, they thought it must be one such. Even as they were keenly watching, the figure moved a little into the open. Then they concluded that it could either be a tiger or panther. One of them surreptitiously skirted the FRH on the far side to caution the officers of their safety. The officers too became curious and waited for the animal to move further into the open. The animal figure remained still for some time and turned towards the abandoned structure. It came into open and could clearly be seen in bright moonlight. It was tiger not far away from them. With all the thrill, surprise and anxiety associated with the event, they started watching it. The tiger took a few more steps and stopped for a while. It took a careful look at FRH where the persons were in frozen condition and watching with bated breath. It stopped again for some time in front of the structure and then moved to water line passing by the side of the platform on which I was sleeping. It came out after some time and stopped again in the open for about five minutes and then walked into bushes majestically. It was a full grown tiger perhaps past its prime.

Surprisingly none remembered that I was sleeping right at the place of action. It occurred to them only after Mr. Sakharam raised a hue and cry after dawn. As for me, I was not aware any of these events. I was blissfully in sleep when the tiger passed by me within few feet distance. I woke up once in the night to answer nature's call and there was no lantern light. We later found that the kerosene was exhausted. Everybody complimented me for surviving the risk. But I have regrets even today that I missed sighting a tiger at so close a distance. Barring two occasions when I had a fleeting glance of tiger, I have not been fortunate to have a good look at the tiger in its habitat.

It is common for people to paint the tiger as life-threatening and that any encounter with tiger should be avoided. *I have narrated my own experience to show that tiger is in fact not inimical to humans and is unlike the trigger-happy humans.* If the humans were to be in the prey list of tigers, I was there like dinner served on the table but the tiger had magnanimously ignored me not to cause any harm to me. Is it not the best example to conclude that it seeks co-existence with man? Will the man reciprocate?

THE SCOPE FOR CONSOLIDATION OF TIGER POPULATION IN ANDHRA PRADESH

By
A.V. Joseph

On the occasion of the International Tiger Day, the Honorable Prime Minister of India recently released the much-awaited report on the 'Status of Tigers in India' wherein the figure pegged for united Andhra Pradesh is 74 nos. Prior to the 1980's, in united Andhra Pradesh tigers were found well distributed in good numbers in the forests of Telangana, Nallamalais and Eastern Ghats. The population of tigers showed a drastic decline post 1980's due to left wing extremism activities and by end of 2010 were confined only to Kawal Tiger Reserve and in Amarabad Tiger Reserve in Telangana state and in Nagarjuna Sagar Tiger Reserve (Nallamalais) and Eastern Ghats in Andhra Pradesh state.

This trend of decline of tiger population in Andhra Pradesh has been arrested in Nallamalais with aggressive management intervention by provision of water, management of natural grass lands, strict control of forest surface fires, strict control against grazing and establishment of cattle *pentas*, closure of traffic during night hours, strict enforcement of anti-poaching measures with base camps etc. While the population decline of tiger continues in Eastern Ghats, the tiger population has been consolidated in Nagarjuna Sagar Tiger Reserve. Tiger population has recorded a gradual increase both in Nagarjuna Sagar Tiger Reserve and in Amarabad Tiger Reserve with implementation of Bio

diversity conservation works under CAMPA, Biodiversity Society of Andhra Pradesh (BIOSAP), Central Schemes etc. The Nagarjuna Sagar Tiger Reserve in united Andhra Pradesh has been divided and Amarabad Tiger Reserve created in Telangana with an area of 2611.39sq km and Nagarjuna Sagar Tiger Reserve in Andhra Pradesh consolidated by addition of extended core with an area of 3296.31 sq km. The Nagarjuna Sagar Tiger Reserve encompasses the rich Nallamalai forests of Gundla Brameshwaram Wildlife Sanctuary 1700 sq km in the south and this had been added to Tiger Reserve as extended core.

With the consolidation of tiger population in Nagarjuna Sagar Tiger Reserve, the tigers from Nallamalais have begun to gradually disperse and re-populate the traditional areas where they were present in the recent past i.e. north towards Kollapur forests and South towards Nandyal and Giddalur forests through the existing forest connectivity. In Amarabad Tiger Reserve the tiger population is confined to the forests of Farahabad, Lingal, Amarabad and Nagarjunsagar forests. There is ample scope for tiger population to consolidate and increase in Amarabad Tiger Reserve provided the forests of Kollapur towards the North are aggressively protected and the habitat improved with strong protection measures. Incidentally Kollapur

forests harbored a good number of tigers and was a preferred hunting ground for tiger sport hunting pre 1960's before the enactment of Wildlife Protection Act, 1972. The Rajah of Kollapur was an avid sport hunter and in the forests of Kollapur lies a stone pillar engraved with recordings of hunting five tigers at a single spot on a single day. The stone memorial is known famously as 'iethu puli rai' (stone recording hunt of five tigers). The Telangana govt. has included the Kollapur forests and other adjoining tiger habitat forests as buffer area under Amarabad Tiger Reserve. These forests support a good crop of *Hardwickia binnata* which are heavily lopped for fodder for goats and the vegetation is getting degraded. There are two bamboo series, viz. Medarkote & Sukkalagundem which were earlier worked extensively and marketed but now closed for recuperation and added to the Buffer Area to the Tiger Reserve. If goat browsing and grazing by cattle are strictly controlled, coupled with habitat improvement works like consolidation of natural grass lands, planting of bamboo rhizome on *nalas* and stream banks undertaken, it will help in the increase of wild ungulates population. At present tigers are coming to the fringes of Kollapur forests that adjoins the Tiger Reserve, but with adequate protection and habitat improvement, tigers will re-populate the original habited areas.

The dispersal of tigers from Nagarjuna Sagar Tiger Reserve / Gundla Brameshwaram to the south is more, well defined through Nandyal and Giddalur and Kurnool forests which act as wildlife

corridor linking Lankamalleshwaram wildlife sanctuary forests through Chelma, Pourumamilla, and Jyothi to Lankamalla. The source population of tigers from Nagarjuna Sagar Tiger Reserve / Gundla Brameshwaram have dispersed and now reached the forests of Siddavatam (Kadapa district) of Lankamalleshwaram wildlife sanctuary i.e the sink area and are recorded in Safibavi area. If conditions improve these population of tigers will gradually migrate further south through the wildlife corridor linking Lankamalla with Velugondas and Seshachalam forests of Tirupathi and occupy the vacant territory which were earlier habited with tigers. This will be the largest tiger landscape in Andhra Pradesh spread over Kurnool, Prakasam, Kadapa, Chittoor and Nellore districts and it can support an additional 30 % of the existing tiger population.

George Schaller, the renowned wildlife biologist and author of the book 'The Deer and the Tiger' visited Nagarjuna Sagar Tiger Reserve & Gundla Brameshwaram and trekked the forests by foot at an age of 75 yrs in 2014, and recorded that the forests of Gundla Brameshwaram holds a very good future as breeding ground for tigers. Dr. Johnsingh, former Director of Wildlife Institute of India after spending a week in the forests of Nagarjuna Sagar Tiger Reserve and Gundla Brameshwaram opined that the forests are capable of supporting a higher number of prey animals and predators. He observed that the grassland vegetation was adequate and in the absence

of a coarse grass feeder like Gaur suggested to verify earlier records of its presence and examine its scientific reintroduction in the area after conducting a thorough study.

The famous hunter, Sri Kenneth Anderson in his exploits in the area had narrated of his stay in Nagapatla Forest Rest House and tiger hunting in Pulibonnu /Chamala area of Seshachalam forests. The late wildlife conservationist Sri E.R.C Davidar had similarly narrated the tiger hunting expeditions in Mamandur fire lines, when tiger hunting was a permitted sport. Sadly, tigers totally disappeared from the forests of Seshachalam and the Lankamalias during the late nineties but have made a comeback in Chamala valley area of Seshachalam forests with the recent camera trap recording the picture of the animal taken on 23rd March, 2019.

The situation in Eastern Ghats is very disappointing with the recent census recording the presence of the tiger in single digit number. The forests of Khammam, East Godavari, Visakhapatnam districts were a couple of decades ago covered with dense miscellaneous forests and they supported a good number of tiger population. With the influx of displaced tribal from Orissa and encroachments in the forests, many villages have sprung up in the Eastern Ghats forests. Tigers are now confined to the Papikonda National park 1012.86 sq km in area and are found in Darapalli, Maredipudi, Kondamodulu and G M Valasa area extending towards Chintur and Lakkavaram forests. These forests act as wildlife corridors and connect the Andhra Pradesh forests with Chhattisgarh and

Orissa state forests thereby permitting migration of tigers from both the states.

The Papikonda wildlife sanctuary was upgraded to Papikonda National Park with the inclusion of the twenty-five depopulated villages falling within the National Park and addition of the adjoining forests in East Godavari and West Godavari districts when Polavaram project was cleared by the MoEF & CC. The Rekkapalli Hill RF, the Akuru RF, the Perikavalasa RF and the Marrigudem RF are very rich forests with bamboo brakes, grass covered hilly plateaus, undulating terrain with deep vegetated valleys and lankas. The prey population consists of Gaur, Sambar deer, spotted deer, barking deer and wild pigs. The protection of Papikonda National Park has to be improved with establishment of base camps and habitat improvement works undertaken so that the herbivore population improves and consequently the tiger and other carnivore population too. This area is subject to Gothi koyas incursion and they are ruthless poachers of wildlife. If the landscape extending from Papikonda National Park to Chintur, Lakkavaram ranges and similarly to Rampachodavaram, Maredimalli, Addatheegala and Marripakala ranges are secured, the tiger will re-establish itself and its population increase and consolidate in this landscape also.

(Sri A.V. Joseph is Retired PCCF & HoFF of Andhra Pradesh. His e-mail ID is av_joseph@yahoo.com)

PAROTHI

By

Ramesh Kalaghatgi

Chapter 1

It was an Ugadi day. The children of Shankaragudem were playing Cricket using a huge granite stone in the village grazing land as makeshift wicket. A *Sadhu* clad in saffron robes with a sling bag hanging on his shoulders, a small wooden cage in one hand and a colorful umbrella in the other, enters singing a song describing the year's future prospects. Sitting in the cage and joining in the chorus is a small bird, a talking hill Myna. The *Sadhu* addresses the bird as *Mynarao*. Seeing the children playing cricket using the granite monolith as wicket, he gets furious and starts shouting at them, finding fault with them for abusing and defiling the sacred rock edifice. *Mynarao* joins him in this also.

"this is not just a rock. It is an edifice, a great rock, a *Masthi kallu*. It signifies and represents the great soul of Parothi who dedicated her life for the betterment of the not just the village, but the entire landscape that is still so vibrant. What a soul Parothi was. And what a blasphemy now?" Children are confused and amused. Confused at his anger and amused at the sight of a talking bird.

Sridhar, a young graduate who had come for a holiday is equally confused. Countering the *Sadhu*, he questions the veracity of his claim, sanctity of the rock which has been standing there since decades, through his childhood. Disbelieving the *Sadhu*, Sridhar starts criticizing him, his beliefs, his attitude and the bird. He disagrees and belittles the *Sadhu*, *Mynarao* and Parothi.

"what nonsense. I have been seeing this rock since my childhood, since more than two

decades. No one ever referred this as an edifice leave alone *Masthi kallu*. No one knows who this Parothi is or was. If you start naming all such rocks after one or another, this entire area will look like a *kabarasthan*. What nonsense are you singing? How do you know what future lies with this village? Do you know your own future? Looking at you and your *avatar*, I am not sure if you get anything to eat. If beggars like you start pretending as though they are privy to all knowledge in this universe, what a mockery it will be? Just shut your mouth and get out"

Sadhu is aghast at this retort.

"Oh My Lord. Please give some sense to this generation. They are not just oblivious of their past, they want to be ignorant about their future also. Pardon them. Pardon me for using these words. Bless them with better sense."

"Oh children; don't be ignorant. Don't forget the great deeds of your elders. It is because of their yesterday's dedication and sacrifice, you are able to stand and speak with freedom today. Listen to their life's story. Learn from them"

Uttering these words, the *Sadhu* starts singing and narrating the story of Parothi. *Mynarao* joins in chorus.

Chapter 2

Shankaragudem is a sleepy tribal village nesting in the picturesque surroundings far away from the sickening influence of modern civilization. It is on the banks of the river Koneru, more of a hill stream that has been the lifeline of the village since ages. The river plunges down a hillock in the form of a fascinating waterfall, gets transformed into a serene pond with

crystal clear water and surges further. The locals call it lotus pond as it has shape of a lotus flower. Shankaragudem is garlanded with a range of hills, the Lingalakondalu in its backdrop, that are clad with lush green forests and protruding granite formations. These forests had been sustaining the village through their thick and thin over generations. The highest peak in the hill range is Shankarakonda a huge granite outcrop that looks like a massive *Shivalinga*. Local folklore describes it as the abode of Lord Shankara, *Dakshina Kailasa*.

The temple of Lord Shankara, an old wooden structure, built on the bank of Koneru, by the original settlers of Shankaragudem, is the heart of this ecosystem. The trees dotting these forests sway in the breeze. The Moon lording over and the stars that decorate the night sky, often peep through the clouds to oversee the village life. Gushing music of the waterfall brings in the much required rhythm that signifies a systematic but carefree life of Shankaragudem.

Inhabitants of Shankaragudem are an agrarian tribe. The millets and pulses that they grow, largely meet their domestic needs. A handful of them lift water in the downstream to irrigate their paddy crop over small holdings. Some others depend on the forests, collecting some tubers, herbs, some leaves and honey. These forest products fetch some income when they were sold to the devotees of Shankara who throng the temple on festive occasions. The young boys among them graze their cattle in the forest. Most of the tribals are illiterate as there is no school in the village. The nearest school is in Kamalapur, a two hours walk. Only a few can afford to attend the school. The village is a closely knit society known for camaraderie, mutual respect and cooperation. People live in

harmony with nature as though they are a part of it and maintain the highest level of social values. For them the river Koneru is like their own mother and the great Shankarakonda, an embodiment of Lord Shankara. The tribals have an unflinching faith that Shankara is their savior and protects them from all evils.

Shiviah is the temple priest. Priesthood is a hereditary privilege bestowed upon him thanks to his position as village headman. He is pious and has devoted his life to the service of Shankara. He never considered worshiping and performing all the daily rituals as his job. It is a way of life for him and he firmly believes that he has been heavenly ordained to serve the Lord under whose benevolent care the whole creation exists. He ekes his livelihood from a modest two acres of Paddy land that he owns in addition to offerings by devotees visiting the temple.

Despite being the village headman, Shiviah never exercises this authority on anybody and believes in strong democratic principles. He treats everyone with love and respect. On every *Purnima* and *Amavasya* Shiviah performs special *pujas* to Lord Shankara. On such special occasions, the number of devotees visiting the temple increases manifold with people from many neighboring villages visiting the temple. The river, the forest and the pond echo their prayers. On such occasions, the entire landscape comes alive with villagers singing and dancing all in praise of the presiding deity, Lord Shankara.

Shivaratri is a special occasion for the whole tribe. They celebrate that solemn festival with reverence and religious zeal. Most of them fast the whole day in a bid to purify their body and rejuvenate their soul. They spend the whole

night singing and chanting the name of the Lord praising and worshiping his deeds, his power and authority. They mend the temple and paint it with fresh colors. They decorate it with fresh mango leaves and flowers that they fetch from the nearby forests. Pilgrims coming from far off villages, after a holy dip in the lotus pond, offer prayers to the Lord for His blessings and favours. A big fair or *Jatra* that is set up on the days approaching *Shivaratri* continues for few days after the festival. Many small merchants set up shops displaying and selling tit-bits, tinsels, toys, and other goods that are a novelty to the village folk. The merchants do a brisk business and make a fast buck. Villagers who come to the *Jatra* too are not tight fisted. They shop happily and carry back something as a mark of their visit to the temple. During *Shivaratri* their offerings to the Lord too are a bit liberal in cash and kind. These offerings support Shiviah for a couple of months. Every year the *Shivaratri Jatra* has special guests in the form of wonderful birds, Pelicans that travel from the far off North. Their arrival signals the beginning of the festival of *Shivaratri*. Their graceful visit fills the hearts of the pilgrims with joy. They treat the birds with reverence and take them for the guests from heaven. They treat these birds as the very embodiment of Lord Shankara as if the Lord has arrived in their bodily form. The birds and their arrival are a symbol of serenity and divinity of the place.

Chapter 3

Parvathi, the only daughter of Timmareddy and Timmakka of Kamalapur, is a fair and chirpy village belle. Born after a decade of their marriage and after lots of *Puja* and *Seva* of Shankara, Timmareddy and Timmakka treat her as a gift of Shankara and name her appropriately. She grows up as an intelligent, nature loving and

fun loving girl, always bubbling with energy, always in a playful mood always with friends and pets. Apart from other girls of her age group of Kamalapur, she also befriends kitten, pups and calves in her house and quite a few peacocks, rabbits, birds and deer in the forests nearby.

When she turns 6, her parents admit her in the Primary school in Kamalapur. Hariprasad, the school Headmaster, is impressed by her keenness to learn and her sharp memory. Despite her penchant for learning, her formal education is curtailed when her father takes her out of the school after her completing 4th standard, much against her wishes and wishes of Hariprasad. Timmareddy and Timmakka are very conservative. They firmly believe that after all, being a girl, it is enough if Parvathi knows how to sign and take care of affairs of her husband's households. Parvathi's ambition for learning remains a dream.

Timmareddy is a farmer of reasonable means owing about 2 acres of wet land in which he grows Paddy and about 10 acres of dry land in which he had planted some Mango trees in 3 acres leaving the rest for his cattle to graze. Timmakka, a home maker is a perfect foil for him. They lead a decent and dignified life in the village.

Though Parvathi had to stay away from school, she continues to remain Hariprasad's pupil, his *shishya*. Visiting her *Guru* whenever she found him free, she continues her education, trying to satiate her urge to learn, eagerness to unearth mysteries of nature, social values, morals and ethics. Hariprasad gives her story books, biographies of Great personalities to

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TOURISM ACTIVITIES APPROVED IN TIGER CONSERVATION PLAN DO NOT REQUIRE SEPARATE FOREST CLEARANCE – RULING BY NATIONAL GREEN TRIBUNAL

**By
P. S. Rao**

An application was filed in Southern Zone, National Green Tribunal (NGT), Chennai seeking relief against development and construction activities in Periyar Tiger Reserve (PTR), Kerala pursuant to the Tiger conservation Plan (TCP) approved by National Tiger Conservation Authority (NTCA). The case of the applicant is that without obtaining Forest Clearance (FC) under Forest (Conservation) Act 1980 (FC Act), the Forest and Wildlife Department is developing site for car parking in an area of 20 acres inside the Wildlife Habitat at Anavachal, causing severe threat to the Forest Ecology and Wildlife.

2. The applicant averred that under the guise of approved TCP, the Department of Tourism, State of Kerala, has decided to undertake certain developmental activities in the Tiger Reserve such as construction of Boat Jetty, Reception Centre, Dining Rooms, Office Rooms, Shopping Complex etc., at a cost of about Rs. 5 crores in violation of FC Act 1980. The applicant made a prayer to direct the respondents not to take up any developmental or construction activities in the PTR.

3. Assistant Inspector General of Forests, NTCA, Ministry of Environment, Forests & Climate Change (MoEF&CC) filed counter affidavit stating that the NTCA is a statutory body constituted under the Wildlife (Protection) Act, (WL Act) 1972, as amended in 2006 for Tiger conservation. NTCA is conferred with powers and functions

under Section 38-O (1) of the WL Act, as amended in 2006. Under Section 38 (V) (4) of the Act, buffer area of the Reserve is defined and in compliance of section 38-O (1) (C) NTCA issued guidelines formulating certain standards on tourism activities in the Tiger Reserves. The TCP of the PTR has been approved following due procedure and that the car parking area in question falls under the notified buffer zone of the Reserve as per the approved eco-tourism plan.

4. The 3rd respondent Deputy Director, PTR filed counter affidavit that large number of tourist vehicles are entering deep inside the Reserve up to the boat landing point at Raman Park to a distance of 2.5 km leading to severe pressure on the wildlife and environment. The proposed shifting of the vehicle parking site to the extreme boundary of the Reserve and bringing the tourists inside the reserve in battery operated vehicles will reduce the pollution and prevent the mortality of wild animals and also improves the ecology and environment of the Reserve. Chapter 23 of the TCP which deals with the management of visitors, eco-tourism and awareness programmes, was prepared as per the guidelines issued by the NTCA under Section 38-O (1) (c) of the WL Act.

5. It is further replied by the Dy. Director that NTCA approved the TCP duly permitting the tourism activities in the buffer zone and all the

proposed activities are in accordance with the existing laws and also in accordance with the directions of the Hon'ble Supreme Court on tourism activities in Protected Areas. The National Wildlife Action Plan 2002 – 2016 vide Chapter XIII titled 'Integration of National Wildlife Action Plan with other Sectoral Programmes' provides that the MoEF&CC should approach various Ministries to integrate their activities in such a manner that the poverty of local communities in these areas is alleviated without affecting the wildlife resources. Kerala Tourism Department has accorded necessary sanction for funding the activities. Benefits from these activities will be recycled for the benefit of the forest dependent communities grouped under Tiger Conservation Foundation apart from strengthening the protection of wildlife and improving the ecology in the area. The activities are ancillary to the conservation and management of the Tiger Reserve and they are not to be considered as a non-forest activity.

6. State of Tamil Nadu in their counter affidavit objected that in violation of the lease deed, State of Kerala has encroached and taken up construction of Mega Car Park works in the water spread area of Mullai Periyar Reservoir which is under the control of Tamil Nadu and if the activity is continued, it would lead to disastrous consequences. Maharaja of Travancore entered into an agreement dated 29th October, 1886 with the Secretary of State for India in Council, Fort St. George, Madras whereby about 8,000 acres of land was leased to Madras Presidency (presently falling in Tamil Nadu) for a term of 999 years for execution and preservation of irrigation and other works ancillary thereto on the "Periyar

Project." There is a dispute on the boundaries of the leased area between Tamil Nadu and Kerala and the case is pending in Supreme Court

7. After hearing the parties at length and after perusing the documents, NGT delivered the judgment running into 60 pages. The judgment was authored by the writer of this article who was part of the Bench that heard the case. For the purpose of writing this article only certain relevant condensed portions of judgment were considered.

8. Considering the fact that being a special court exclusively dealing with environment and forests, NGT observed that the dispute relating to the boundaries of leased area between the States of Tamil Nadu and Kerala will not be an impediment, if any order is passed purely in the interest of environment and wildlife. Therefore, after hearing the learned Addl. Advocate Generals of both the States, the Tribunal while considering all the aspects and in the interest of environment and as the accidents involving wild animals are continuing because of allowing large number of tourist vehicles to enter the Reserve, by an interim order dated 17.2.2017 permitted the State of Kerala to shift the vehicle parking site from the boat landing point to the periphery of the Reserve at Kumily town, Anavachal without making any permanent structures. However, NGT felt that it is prudent to deal with the following issues point-wise to dispose the application.

(i) Whether the site at Anavachal where the vehicle parking facility is proposed to be permanently shifted and whether the proposed amenities to be established for the

benefit of tourists visiting the Tiger Reserve in large number, falls within the Mullai Periyar reservoir water spread area leased to the State of Tamil Nadu and whether such activities amount to infringement of rights of the State of Tamil Nadu violating the lease agreement and the orders of the Hon'ble Supreme Court.

(ii) Whether the site proposed for shifting of vehicle parking facility is located in a wetland in violation of the statutory provisions and whether such activities lead to destruction of ecology and environment as well as biodiversity in the area.

(iii) Whether the establishment and development of eco-tourism facilities in the Tiger Reserve as per the TCP approved by the NTCA, is in violation of Forest (Conservation) Act, 1980.

9. Point No.1: The case of the State of Tamil Nadu is that the proposed activity taken up by the authorities of PTR is nothing but trespassing into the leased area and in violation of the agreement. Pursuant to the agreement made with Maharaja of Travancore, Madras Presidency constructed irrigation project across River Periyar during the years 1887 – 1895. When the State of Kerala raised an issue as to whether the legal right claimed under the agreement of 1886 is valid and binding on the State of Tamil Nadu, the Hon'ble Supreme Court in the decreed order dated 7.5.2014 held that the lease deed is valid and binding. However, the boundary dispute is yet to be settled and case is still pending before the Hon'ble Apex Court.

10. NGT observed that it being the Environmental Court created under NGT Act, 2010, it cannot go into the larger issue of territorial dispute and it is appropriate to

consider only on implementation of various conservation and protection measures in the Tiger Reserve and also establishment and development of tourism facilities listed in the TCP approved by the NTCA irrespective of the political boundaries as environment, forests and wildlife are the national property and there is a mandate to the State under Article 48 A of the Constitution to protect and improve the environment. Therefore, NGT delved upon the issues which pertain to the undertaking of eco-tourism activities as per the TCP approved by the NTCA without going into the merits and demerits of the issues raised by both the states on the boundary dispute.

11. Point No.2: The learned counsel for the state of Tamil Nadu vehemently argued that the site at Anavachal in Kumily town where the PTR authorities are undertaking works to establish vehicle parking facility, is a wetland and attracts the provisions of the Wetland (Conservation and Management) Rules, 2010 and also the Kerala Conservation of Paddy Land and Wetland Act, 2008. However, the records produced before NGT reveal that no doubt the site at Anavachal is low lying but not qualified to be defined as 'wetland' under the above laws and it is concluded that the plea made by the State of Tamil Nadu is not sustainable.

12. Point No.3: Originally Periyar Wildlife Sanctuary with an extent of 177 sq. km was constituted in 1950 and it was brought under the Project Tiger in 1978 as the 10th Tiger Reserve in the country. During 1982 an extent of 350 sq. km was notified as Periyar Park and finally in 2007 the total area of 881 sq. km was

notified as Core area/Critical Tiger Habitat which includes 733 sq.km of Periyar Wildlife Sanctuary and 148 sq.km of Reserve Forest of adjoining range of Ranni. An extent of 44 sq. km was notified as buffer in 2011. Presently the total extent of PTR is 925 sq.km out of which 881sq.km is the core area and the remaining 44 sq.km is the notified buffer.

13. Keeping in view that there is a tremendous pressure on the Tiger Reserves in the country and all out efforts have to be made to conserve Tiger population in the wild, the Central Government has established NTCA, a statutory body for overseeing the activities of Tiger conservation by amending WL Act, 1972 in 2006 duly inserting Chapters IV-B and IV-C. Comprehensive guidelines for Tiger conservation and tourism as provided under Section 38 O (1) (c) of the WL 1972, dated 15-10-2012 notified by the NTCA, enable to undertake tourism activities in the Tiger Reserves and the guidelines lay certain normative standards.

14. Hon'ble Supreme Court in **AJAY DUBEY Vs. UNION OF INDIA & OTHERS in SLP (Civil) No.21339 of 2011** considered regulated tourism as a part of conservation efforts in the Tiger Reserves. The Court while finally disposing the case on 29-3-2016, made the following observations which have become final.

"Several directions have been issued by this Court from time to time pursuant where to the National Tiger Conservation Authority has by a notification dated 15th October 2012 notified comprehensive guidelines for tiger conservation and tourism. Part B of the said Guidelines titled "Guidelines for Tourism in and around Tiger Reserves" sets out the broad

parameters within which such tourism activities have been permitted. When the matter came up before this Court on 16th October, 2012, this Court noted the Guidelines, aforementioned, and while modifying interim order dated 24th July 2012 directed that henceforth tourism activities will be strictly in accordance with the said Guidelines."

15. NGT observed that the present vehicle parking site is located deep inside the reserve 2.5 km away from the entrance gate. On an average, daily about 300 vehicles enter the park. During peak season it goes up to 900. There is a steady increase in tourist flow and vehicles. When there is a heavy rush, tourist vehicles are parked along the road for 2.5 km length inside the boundary leading to damage to the vegetation, noise pollution and disposal of solid/plastic waste. There are instances of speeding vehicles causing death to wild animals crossing the road. There are also instances of wild animals consuming plastic material containing leftover food materials thrown by the tourists and undergoing painful death. The proposed site at Anavachal where there is a severe threat of encroachment by the local people, was recommended for shifting the car parking facility. The location of such car parking facility and development of basic minimum facilities to the visitors including large number of foreign visitors in the buffer area of the Reserve will be to protect wildlife and environment with due recognition to the livelihood needs, developmental, social and cultural rights of the local people. Chapter 23 of the TCP of PTR approved by the NTCA, highlights the issues

related to development of tourism in buffer area.

16. NTCA under Clause (c), sub-section (1) of Section 38-O of the WL Act, 1972 has power to lay down standards of tourism activities and guidelines for Tiger Reserves. Accordingly in pursuance of the powers conferred upon it, the NTCA issued Comprehensive Guidelines by Notification dated 15.10.2012. Eco-tourism is emerging an important component of tourism industry and it is proposed to be fostered under Project Tiger to benefit the local communities as per the approved TCP. In fact the guidelines clearly state that regulated tourism can be allowed in the buffer areas particularly by involving local communities. In fact, tourism infrastructure must conform to environment friendly low impact architecture including utilization of solar energy, waste recycling, water management, discharge of only treated sewage. NGT found that there is no impediment on the part of authorities of the PTR to go ahead with the activities, subject to confirmation of the standards prescribed under the guidelines of the TCP as approved by the NTCA.

17. With regard to the averments made by the applicant that the establishment and development of tourism activates require clearance under various statutes particularly the FC Act, 1980, NGT directed the Secretary, MoEF&CC to file affidavit. The Secretary filed affidavit dated 29.9.2016 and fully concurred with the idea that the tourism activities approved in the TCP are in consonance with the guidelines issued by the NTCA which also were upheld by the Hon'ble Supreme Court. The Secretary also stated that the Hon'ble Supreme

Court in the judgment dated 25.11.2005 in I.A.No.1220 and I.A. No. 994 (regarding clarification of 14.2.2000 order) has stated that works in Protected Areas can be taken up provided the same are

- (a) undertaken as per the management plan approved by the competent authority,
- (b) are consistent with the provisions of Wildlife (Protection) Act, 1972,
- (c) are undertaken consistent with the National Wildlife Action Plan, one of the strategies is Wildlife Tourism for which the action envisaged was preparation of a Tourism Management Plan for each protected area,
- (d) are in conformity with the guidelines issued for the management of the Protected Areas from time to time.

However, in the last Para the Secretary has stated that the concerned authorities will be directed to seek necessary permission and approval under the FC Act, 1980 and/or Biological Diversity Act, 2002. This statement of Secretary is in contradiction with the stand taken by him earlier.

18. The National Wildlife Action Plan *inter alia* enshrined the concept of addressing wildlife education to different target groups and to educate the tourists to protect the parks which form part of ecotourism activities. For this purpose it emphasizes provision for interpretation facility such as Information Centre, good signage, nature trails, guided tours etc. When it was, challenged that the construction of such facilities in the forest land attracts the FC Act, 1980. Hon'ble Rajasthan High Court in the case of **Om Prakash Chowdhary and Another Vs. State of Rajasthan**

and Ors., 2005 KHC 5994 had an occasion to interpret law on the use of forest land for setting up of Interpretation Centre and on the question as to whether such activity to be construed as a non forest activity, held that FC Act, 1980 does not apply to the case therefore the permission of the Central Government is not required. Therefore, NGT held that the proposed establishment and development of tourism activities in question in buffer area of the PTR are as per the approved TCP and in conformity with the strategy of the National Wildlife Action Plan, in consonance with the guidelines issued by the NTCA and also in harmony with the provisions of the WL Act 1972 and also in conformity with the Hon'ble Apex Court judgment.

19. NGT concluded that once the statutory authority i.e. the NTCA which examines the proposals and approves TCP consisting a component on tourism activities prepared as per the guidelines issued by the NTCA, there is no necessity of obtaining further clearance under the FC Act, 1980. The Director General of Forests, who is the chairman of the Forest Advisory Committee (FAC) examines the proposals for utilization of forest land and recommends the diversion for non forest activities, himself/herself is one of the members of NTCA.

66. Section 2 of the Forest (Conservation) Act, 1980 reads as follows:

"2. Restriction on the de-reservation of forests or use of forest land for non forest purpose.— Notwithstanding anything contained in any other law for the time being in force in a State, no State Government or other authority shall

make, except with the prior approval of the Central Government, any order directing—

(i) that any reserved forest (within the meaning of the expression "reserved forest" in any law for the time being in force in that State) or any portion thereof, shall cease to be reserved;

(ii) that any forest and or any portion thereof may be used for any non-forest purpose;

(iii) that any forest land or any portion thereof may be assigned by way of lease or otherwise to any private person or to any authority, corporation, agency or any other organization not owned, managed or controlled by Government;

(iv) that any forest and or any portion thereof may be cleared of trees which have grown naturally in that land or portion, for the purpose of using it for re-forestation)

(Explanation-For the purpose of this section "non-forest purpose" means the breaking up or clearing of any forest land or portion thereof for—

(a) the cultivation of tea, coffee, spices, rubber, palms, oil-bearing plants, horticulture crops or medicinal plants;

(b) any purpose other than re-forestation. But does not include any work relating or ancillary to conservation, development and management of forest and wild-life namely, the establishment of check-posts, fire lines, wireless communications and construction of fencing, bridges and culverts, dams, waterholes, trench marks, boundary marks pipelines or other like purposes)"

20. NGT observed that taking a holistic approach and looking at the larger objective

of conservation of forests and wildlife by involving local communities, undertaking of the ecotourism activities approved by the NTCA which is a statutory authority, at the fringe of the buffer zone of the Reserve without felling a single tree and establishment and maintenance of minimum amenities for visitors such as vehicle parking facility, ticket counter, cafeteria, wash rooms, interpretation centre etc. should not be considered as diversion of forest land for non forest purpose attracting the provisions of FC Act, 1980. The activities can be grouped under the works relating or ancillary to conservation, development and management of forests and wild-life and there is no necessity to obtain separate approval under FC Act, 1980. Even when check posts, wireless communication centres, watch towers etc. are established deep inside the forests in Core area certain minimum facilities for stay of the forest personnel are required and if one argues that providing such facilities including construction of shelters to patrolling staff, kitchen for cooking food, wash rooms for attending nature's call etc. which are not specifically mentioned in section 2 of the FC Act, 1980, amount to diversion of forest land and hence attract the FC Act, 1980 is highly inappropriate. NGT noted that overall objectives have to be looked into. Minimum facilities for the visitors in the fringe area of the buffer zone of the Reserve strictly in conformity with the approved TCP, cannot be termed as diversion of forest land for non forest purpose and such argument is beyond one's comprehension. The tourism activities on the fringes of buffer zone are incidental to the management of the Reserve and involve the local communities. Such involvement is a part of conservation efforts. Involving the local communities in conservation

activities and natural resource management is to strengthen the protection measures and it is a recognised practice particularly in poor and developed countries which are rich in biodiversity.

21. The learned counsel for the respondent Deputy Director, PTR argued that the Tiger Conservation Foundation is established under Section 38-X of the WL Act, 1972 for the purpose of involving local communities in various activities of conservation and tourism also forms part of such activity. Section 38-X reads as follows:

"38X. (1) The State Government shall establish a Tiger Conservation Foundation for tiger reserves within the State in order to facilitate and support their management for conservation of tiger and biodiversity and, to take initiatives in eco-development by involvement of people in such development process.

(2) The Tiger Conservation Foundation shall, inter alia have the following objective:—

(a) to facilitate ecological, economic, social and cultural development in the tiger reserves;

(b) to promote eco-tourism with the involvement of local stakeholder communities and provide support to safeguard the natural environment in the tiger reserves;

(c) to facilitate the creation of, and or maintenance of, such assets

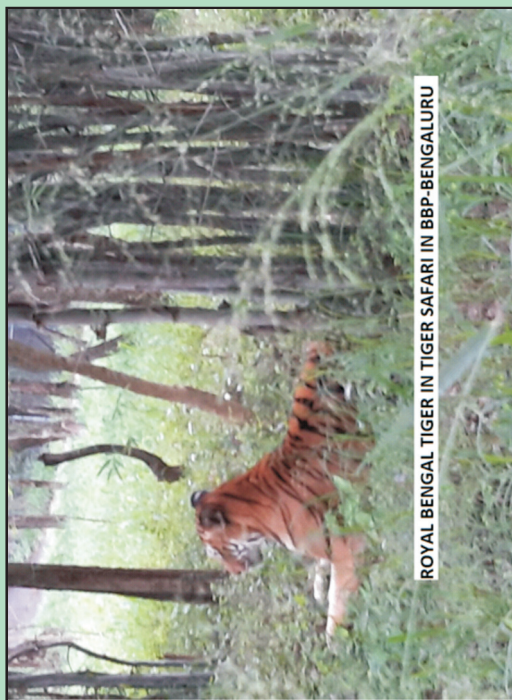
as may be necessary for fulfilling the above said objectives;

(d) to solicit technical, financial, social, legal and other support required for the activities of the Foundation for achieving the above said objectives;



LOTH BEARS IN BEAR SAFARI IN BANNERGHATTA BIOLOGICAL PARK

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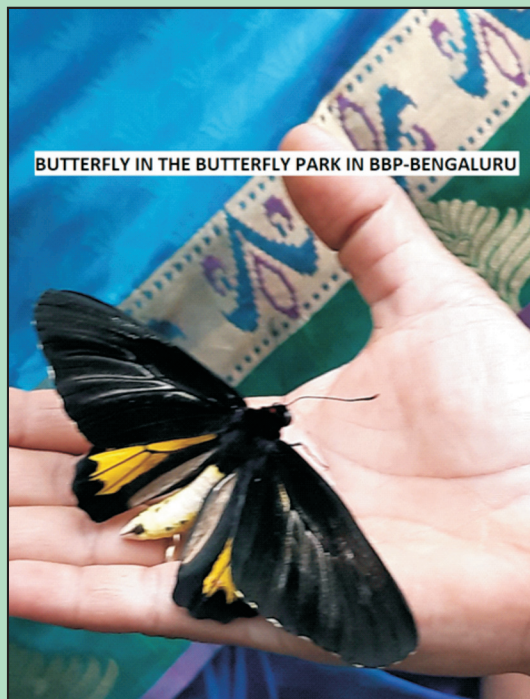


ROYAL BENGAL TIGER IN TIGER SAFARI IN BBP-BENGALURU

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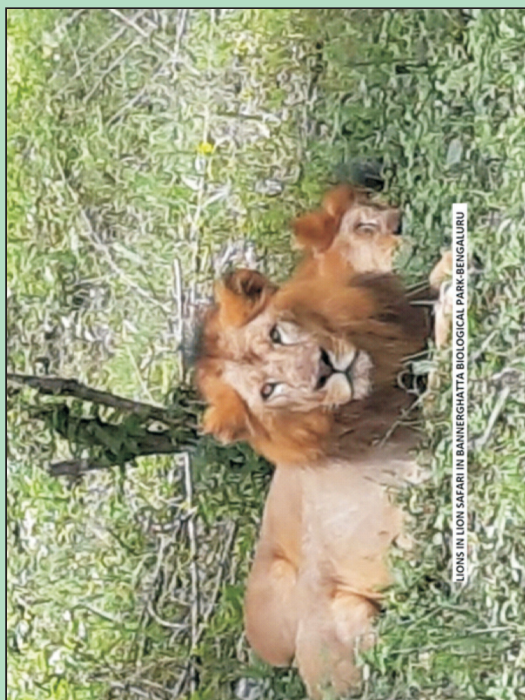


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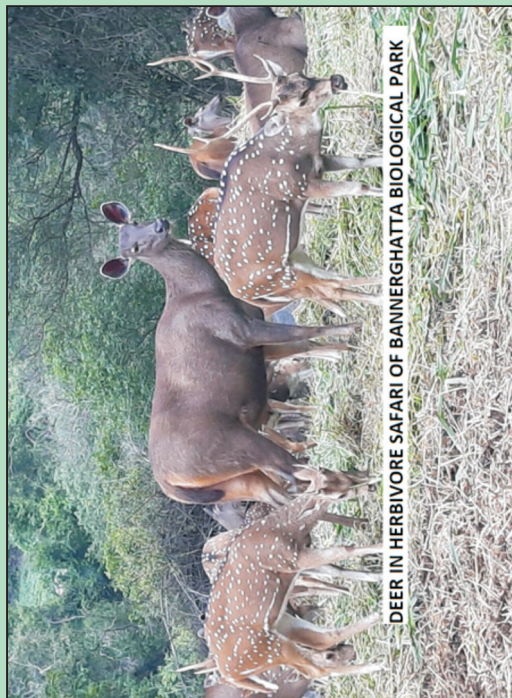


BUTTERFLY IN THE BUTTERFLY PARK IN BBP-BENGALURU

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LIONS IN LION SAFARI IN BANNERGHATTA BIOLOGICAL PARK, BENGALURU



DEER IN HERBIVORE SAFARI OF BANNERGHATTA BIOLOGICAL PARK



THE AUTHOR AND HIS WIFE AT THE ENTRANCE OF BUTTERFLY PARK IN BANNERGHATTA BIOLOGICAL PARK



Elephants in Elephant Care Center of BBP-Bengaluru

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(e) to augment and mobilize financial resources including recycling of entry and such other fees received in a tiger reserve, to foster stake-holder development and eco-tourism; .

(f) to support research, environmental education and training in the above related fields”

22. In support of their contention it is argued by the learned counsel for the State of Kerala that the provisions of the FC Act, 1980 are not applicable even for the civil works such as construction of roads, bridges, buildings, fences or barrier gates etc. and carrying out of such works undertaken in the Protected Areas is to strengthen the measures for protection of wildlife and these activities can be permitted by the Chief Wildlife Warden under section 33 of the WL Act, 1972. Section 33 reads as follows:

“33. Control of sanctuaries. - *The Chief Wild Life Warden shall be the authority who shall control, manage and maintain all sanctuaries and for that purpose, within the limits of any sanctuary..*

a) may construct such roads, bridges, buildings, fences or barrier gates, and carry-out such other works as he may consider necessary for the purposes of such sanctuary;

b) shall take such steps as will ensure the security of wild animals in the sanctuary and the preservation of the sanctuary and wild life, as he may consider necessary for the improvement of any habitat;

c) may take such measures, in the interests of wild life, as he may consider necessary for the improvement of any habitat”;

23. Considering the Hon'ble Supreme Court's observation and as the comprehensive guidelines issued by the NTCA are again

scrutinized and approved by the Hon'ble Supreme Court and as the tourism activities listed in Chapter 23 of the TCP have been approved by the competent authority, NGT came to conclusion that such activities do not amount to diversion of forest land and utilization of forest land for non-forest purpose attracting the provisions of the FC Act, 1980. NGT noted that the NTCA which is a statutory body constituted under the WLP Act, 1972 under the Chairmanship of Minister for MoEF&CC consisting various responsible authorities and experts as members including the Secretary and Director General of Forests, once examined the draft management plan and approved the TCP including the development of tourism activities, there is no reasoning in the argument put forth by the applicant that such activities attract the provisions of the FC Act, 1980. In fact, if one examines the constitution of NTCA vis-a-vis FAC which recommends Forest Clearance cases for the diversion of the forest land, the constitution of NTCA and representation of official and non official members is much wider than FAC. When the Chairperson of the FAC who deals Forest Clearance proposals, himself is a member of the NTCA, which approves the TCP, NGT held that again it is not necessary to approach the MoEF&CC with the proposal to obtain clearance under FC Act, 1980 and the ecotourism activities involving the local communities are nothing but ancillary to the conservation, development and management of forests and wildlife.

With the above observations NGT disposed the application. (The author is a Retired APCCF and retired Expert member of NGT)

VANAPREMI: ANALYSIS OF LAYOUT, AUTHORSHIP & CONTENT OF SELECTED VOLUMES

By
Dr. K. Tirupataiah

Introduction: Vana premi, a monthly journal brought out by the Association of Retired Forest Officers of erstwhile Andhra Pradesh, now Telangana & Andhra Pradesh, is in its twentieth year of publication. At the outset, the Editorial Board needs to be complimented for bringing out the Journal every month, right on dot.

Methodology: There are nineteen completed volumes of Vana premi. Six volumes from the last decade are picked up for study in a "purposive sampling method" taking into account time required for the study and also ready availability of the volumes. The volumes picked up represent pairs of years at the beginning, middle and last years of the previous ten editions of Vana premi. The volumes are: 10, 11, 14, 15, 18 & 19 corresponding to the years 2009, 2010, 2013, 2014, 2017 & 2018, respectively. In each volume and each issue, all articles are analyzed.

1. Layout: Generally, the photos on cover page represented the idea of the month or an idea related to Forestry in its wider perspective.

The Editorial captured, in a lucid manner, incidents / issues of current nature. The span of editorial ranged from 2.0 pages in 2010 to 2.90 pages (average) in 2018. Both the topics selected and the presentation by the Editor was very relevant.

Letters to the Editor is a good indicator of how members and readers get involved with their Journal. Letters to the editor was a common feature in most of the issues. On six occasions (months), there were four letters to the Editor

and on two occasions (2013 Sept. & Nov.) a maximum of five readers wrote to the Editor. Letters to the editor got more than one-page space on an average. The largest space allotted was in 2009 (1.62 pages) followed by 2014 (1.50 pages). The responses of the readers to the Editor were very focused, analytical and supplemented the main articles published in Vana premi. There is always scope for more readers to participate.

Number of Articles-The Journal comes in about sixty pages per issue. Leaving out the cover pages, the opening page, editorial and letters to the editor, number of Articles are counted. In each of the six volumes studied, the number of Articles per volume exceeded hundred. The highest number was 141 (2014) while the lowest was 113 (2009). The trend saw an ascending order till 2014 and then it somewhat dropped down. More number of articles in a volume also indicates a greater number of articles per issue. The no. of articles in each volume & average number of articles per issue is given below:

Table 1: No. of Articles per volume & per issue
Year

2009	2010	2013	2014	2017	2018
Total No. of articles					
113	123	139	141	121	116
Average No. of articles/ issue					
9.42	10.25	11.58	11.75	10.08	9.66

Other regular features of the Journal are: News & Notes and Legal Notes. Book Reviews were carried out in a few issues and Obituaries as

necessitated.

News & Notes is a rich collection of items focused on either event of current interest or of general nature. Generally, this is running into four or more pages with a maximum (7 pages) in 2014 and minimum (3 pages) in 2010.

Legal Notes is again a regular feature where court judgments were shared. This is exclusively contributed by KBR. On an average, this item got about 2 pages and the longest was in December 2010 with six pages. The judgments shared were quite relevant to the field officers.

Other areas: It is observed that many articles dealing with topics like "Laughter is the best medicine, Do you know? etc." are sourced from various sources. Even then, it is suggested that name of the person collecting & contributing could be mentioned in all cases as was done in a few cases. In case of quotations it is observed that while most quotations are good, the author of the quotation was not quoted. This could be addressed in future issues of the Journal. The page on Birthday Greetings has DoBs separately for serving officers and members. This could be reconsidered and a combined chronological order may be maintained to show solidarity as well as to avoid confusion.

2. Authorship: Number of articles written by each author, number of authors in each issue and each volume are analyzed and the details are presented below:

Table 2: Authorship of articles

Years

2009	2010	2013	2014	2017	2018
Total No. of Authors					
54	41	49	46	60	33
No. of female authors					
05	05	05	08	02	03

As can be seen from the table, the number of

authors across years is varying. The least (33) number was in 2018 and the highest (60) a year previous to that. Interestingly, female authors, both officers as well as family members, also made their presence felt. In 2014, maximum (08 Nos.) female authors wrote for the journal. In the three volumes of 2009, 2010 and 2013, there were five female authors in each year. This figure has come down in recent years. It's a good thing to encourage more authors, especially women authors, to write for the journal. This year's initiative of inviting articles from all sections would go a long way in getting more new authors.

Length of Articles was also widely varying. While some articles were crisp and brief, others were quite detailed and long. The subject that was dealt, probably played a role in this. On an average, at least one article was of, ten-page length in each volume studied. In 2010 and 2017, there were four and five articles of more than ten pages length, respectively. While analyzing these longish articles, it occurred that such articles may be christened as "Special Articles". Such articles may be specially invited from chosen authors for each issue of the journal.

Authors: Analysis was made to see who is /are contributing the most to the journal. Details of authors who contributed more than five articles / year is presented below:

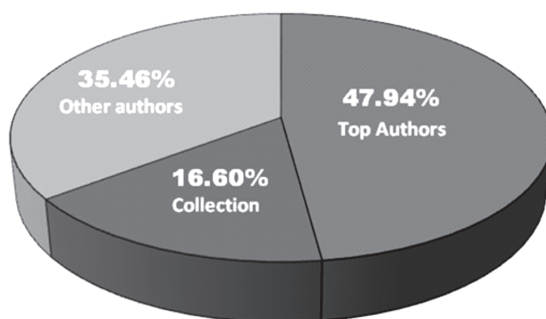


Table 3: Authors with significant contribution

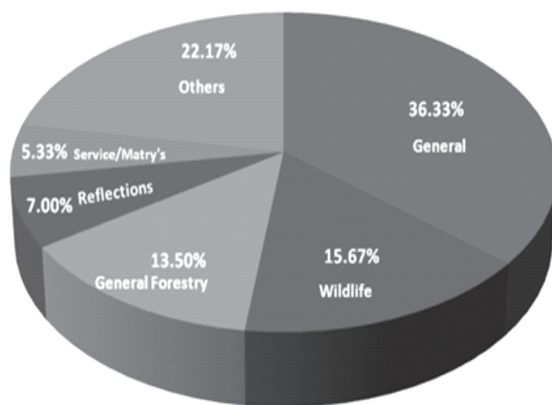
2009	2010	2013
30.08%	49.59%	46.76%
K Buchi Ram Reddy-11 JV Sharma-10 M Kamal Naidu- 9 T Narayana Swamy – 4	K Buchi Ram Reddy – 23 M Kamal Naidu -12 JV Sharma – 8, V Shanta Sheela Babu – 8 MPadmanabha Reddy – 5, VVHari Prasad-5	K Buchi Ram Reddy – 12 SD Mukherji-11, JV Sharma-9N. Shivakumar-9, VVHari Prasad-8 Prasad-5,VShanta Sheela Babu-7 Raghottam Rao Desai-6, Ch. Prakash Rao-5
Collection 13 /113	Collection 24/123	Collection 32/139

2014	2017	2018
51.77%	41.32%	67.24%
K Buchi Ram Reddy – 18 JV Sharma-13 Raghottam Rao Desai – 12 V Shanta Sheela Babu – 9 SD Mukherji – 8 M Kamal Naidu-7 VVHari Prasad-6 Collection30/141	K Buchi Ram Reddy – 14 Raghottam Rao Desai – 12 JV Sharma – 9 MPadmanabha Reddy – 6 A Kishan – 6 BMT Rajeev – 6 BMT Rajeev – 6 Collection9/121	K Buchi Ram Reddy – 27 Raghottam Rao Desai – 11 JV Sharma – 9 V Shanta Sheela Babu - 8 PK Sharma - 6 VVHari Prasad – 6 MPadmanabha Reddy – 6 Collection17/116

*Collection is a set of articles sources from internet or other sources but without name of the contributor.

From the contents of the Table-3, it is evident that a healthy group of 6-8 authors had been contributing around half of all articles on an average. Their efforts are highly appreciated. Though some of the other authors contributed only a few articles, they represented a wide range of backgrounds and states. What is interesting to note is that many authors from other states comprising foresters and other professionals contributed to the Journal.

3. Content Analysis: The journal carried articles covering various fields in addition to subjects related or incidental to the forestry sector. Details of major areas of coverage in the selected six volumes are presented below:



Articles grouped in General category included areas like Health, Political science, Constitution, Policies, General science, etc. The coverage of areas in the Journal, in general, is in tune with its nature and objectives. There is a healthy coverage of both General Forestry and Wildlife, the two major areas in forestry sector. There is

also a rich contribution in the shape of Reflections wherein authors went back in time to recollect those days in their service. Such articles really inspire serving officers especially

the newer lot. If forest protection is added to the general forestry, then that category would be securing even higher percentage of coverage.

Table 4: Content analysis

2009	2010	2013
General – 36%	General – 31%	General – 48%
Wildlife – 20%	Wildlife – 13%	Wildlife – 16%
General Forestry – 14%	Gen. Forestry – 14%	General Forestry – 10%
Alumni/ Assoc - 10%	Reflections- 11%	Reflections –6%
Service/ Martyrs – 6%	Service/ Martyrs - 8%	Forest Protection- 6%
Reflections – 5%	Alumni/Assoc. – 5%	Service/ Martyrs – 4%
Others – 9%	Others – 18%	Others – 10%

2014	2017	2018
General – 46%	General – 33%	General – 24%
Wildlife – 8%	Wildlife – 20%	Wildlife – 19%
General Forestry – 6%	General Forestry – 20%	General Forestry – 17%
Service/ Martyrs – 8%	Forest Protection – 11%	Forest Protection – 13%
Reflections – 8%	Service/ Martyrs -6%	Reflections – 7%
Forest Protection- 7.7%	Reflections – 5%	Alumni/ Assoc – 3%
Others – 16.3%	Alumni/ Assoc – 7%	Court Cases – 3%
	Others – 7%	Others – 5%

Conclusions & Suggestion: Overall, the VANAPREMI reflects the combined resolve, grit and commitment of the Association of Retired Forest Officers to share knowledge and information among members in general. The Journal's layout, content and authorship are quite healthy and it can only improve further. The author/s who contributed the highest number of articles in a year could be felicitated in annual General Body Meeting. Similarly, best set of articles (about three) in each year could be selected and the authors could be

felicitated. These measures would not only give recognition to those who are contributing to the journal now, but would also serve as motivation to potential new authors. The author is grateful for the association for making nicely bound volumes available for this study. (Dr. K. Tirupataiah, is Retired Prl. Chief Conservator of Forests from Telangana State and presently Consultant, Telangana State Forest Academy Dulapally, Hyderabad-500100. His mobile number is 8885532021)

TIGERS ARE LOCKED DOWN TO COLLAPSE IN THEIR OWN LAND

By

Dr. UMA SHANKER SINGH

This is also an incredible 210% rise from 1,411 recorded in 2006, according to the all-India estimation 'Status of Tigers, Co-predators, Prey and their Habitat, 2018', released by Prime Minister in 2019. In comparison to the census done in the year the tiger population has jumped to an estimated 2,967, a rise by 33% over 2,226 reported in 2014. There is a small difference in the process of census as well, in 2014, tigers aged 1.5 years or older were counted whereas the current report has the cut-off age as 1 year but this is also questionable and bewilders me that how the foresters or principal scientists involved in the work of tiger census could be able to determine that how many tigers are in the 12-18 month age group in the population of 2,967, and how the estimation determines the age of a tiger. This has been my experience as a Director of a national park that tiger cubs don't grow very fast beyond 3 months. Hence, 1 and 1.5 year are synonymous in the context as the difference is not ocularly discernible. We have signed an international treaty at St Petersburg with a vow to the target of doubling tiger population by 2022. This is by far the biggest increase in terms of both numbers and percentage since the four-yearly census using camera traps and the capture-mark-recapture method began in 2006. The number that year was 1,411; it rose by 295 (21%) to 1,706 in 2010; and by 520 (30%) to 2,226 in 2014. Tiger numbers are always projected in a range 2,967 is the mean of an estimated range of 2,603 to 3,346. According to the report, as many as 2,461 individual tigers (83% of the total) have

actually been photographed by trap cameras. In 2014, only 1,540 individuals (69%) were photographed. The report does not contain numbers of other predators like leopards. But better tiger numbers are generally seen as indicating good prey bases and habitat. More than 80% of the world's wild tigers are in India, and it's crucial to keep track of their numbers. Authorities claim that the census is the world's most extensive biodiversity mapping exercise. A total 3, 81,400 sq km of forests were surveyed; 5, 22,996 km on foot. 3,17,958 habitat plots were sampled for vegetation and prey dung. There were 26,838 camera trap locations, which covered 1, 21,337 sq km. A staggering 3, 48, 58,623 wildlife pictures were captured. Of them, 76,651 were of tigers; 51,777 of leopards. The entire effort consumed 5,93,882 man days.

STATES WHERE TIGER POPULATION INCREASED MOST:

The biggest increase has been in Madhya Pradesh — a massive 218 individuals (71%) from 308 in 2014 to 526. In Maharashtra, the number has gone up from 190 to 312 (64%), and in Karnataka, from 406 to 524 (118, or 29%). Uttarakhand has gained over 100 tigers (340 to 442; 30%). However, since tigers keep moving between states; conservationists prefer to talk about tiger numbers in terms of landscapes. India's five tiger landscapes are: Shivalik Hills and Gangetic Plains, Central Indian Landscape and Eastern Ghats, Western Ghats, North-East Hills Brahmaputra plains and Sundarbans.

STATES WHICH HAVE DONE BADLY: Only one of the 20 tiger-bearing states has seen a fall in numbers — Chhattisgarh, where the census counted 19 tigers, significantly fewer than the 46 of 2014. The report has cited law and order as the reason large parts of the state are hit by the Maoist insurgency. Greater conservation efforts are needed in the “critically vulnerable” Northeast hills and Odisha. No tiger has been found in the Buxa, Palamau and Dampa reserves.

WILDLIFE CONSERVATION IN INDIA: ARE WE REALLY SERIOUS? Fast-track forest clearances that are an indicator of India’s development also pose a question—what is the future of wildlife in India? Wildlife conservation in India has a long history, dating back to the colonial period when it was rather very restrictive to only targeted species and that too in a defined geographical area. Then, the formation of the Wildlife Board at the national level and enactment of Wildlife Act in 1972 laid the foundation of present day “wildlife conservation” era in post-independent India. The environmental Protection Act, 1986, and notifications issued there under made serious efforts to protect wildlife habitats and wildlife corridors. With the opening up of Indian market and process of globalization, the country has made significant progress in achieving higher Gross Domestic Product (GDP) but, on the other hand, disturbing developments about dilution of conservation efforts on the part of the system of governance on one side and a significant increase in the death toll of protected species, combined with intervention within Protected Areas came to fore. Take for instance, the restrictions by Environmental Impact assessment (EIA) for Development Projects, covering more than 30 sectors as far back in 1994, surprisingly omitting all railway projects

from its ambit. The history of last 20 years bears testimony to the sad fact, in attempts of the so called “development lobby” to establish practices like “green blockade.” The 48 projects recommended for clearance in January 2015, if undertaken, will convert 2,144 ha of forest land within the Protected Area.

Expansion of linear infrastructure like roads, railways and power lines in Central Indian and Eastern Ghats tiger landscape is fragmenting natural landscapes and severing wildlife corridors (Wildlife conservation Trust). The WCT analyzed 399 out of 1697 proposals for linear infrastructure submitted to the Ministry of Environment Forests and Climate Change (MoEF&CC) post-July 2014. This has been found that in an overwhelming number of cases 345 (86 per cent) the user agency has denied the requirement of ‘wildlife clearance,’” observes the report. The total cost of the 399 identified projects is approximately Rs 130,000 crores. The following table gives us fairly good idea about the linear infrastructure in the wildlife areas in different states. With nearly 86 per cent of the total project proposals cleared, what can we expect of tiger conservation? In the month of July 2019 the Ministry of Environment, Forest and climate change has exempted 13 pending railway projects, worth Rs 19,400 crores (\$2.8 billion) and spread over 800 hectares of land, from the process of seeking forest clearances under Forest conservation Act 1980 and it is believed that these clearances could adversely impact a national park, a tiger reserve, a tiger corridor and wildlife sanctuaries across the states of Uttar Pradesh, Madhya Pradesh, Karnataka and Goa. The Forest (Conservation) Act of 1980 prohibits the use of any forest land for non-forest activities without prior approval

of the central government. The Railway Ministry has come up with a bizarre and unacceptable explanation for this, they argued that this land was owned by the railways before 1980, the year the Forest (Conservation) Act (FCA), was passed, and so the Act did not apply to this land and surprisingly our forest bureaucrats did not utter a word on this. Surprisingly in May 2019, the Ministry of Environment, Forest and Climate change issued a circular to all state Governments that the FCA, 1980, will not apply for doubling of track and gauge conversion projects, if the land is railway land and was under non-forest use prior to 1980.

TABLE SHOWING STATEWISE LINEAR INFRASTRUCTURE PROJECTS (Project cost in Rs. crore)

STATES	ROAD	RAIL	IRRIGATION
Maharashtra	18,393	4,323	2,420
Madhya Pradesh	8,076	3,396	18,703
Chhattisgarh	4,844	14,441	2,266
Jharkhand	1,479	10,757	2,268
Odisha	7,037	4,846	1,073
Telangana	1,297	0	16,390
Andhra Pradesh	2,232	1,313	1,821
Rajasthan	3,366	0	0
Total	46,724	39,078	44,941

The exemption now granted to these projects from the forest clearances process means that there will be no scrutiny or due diligence before forests are diverted for other uses. Usually, any proposal to use forest land is vetted and scrutinized by the state government, the divisional forest officer and eventually the headquarters of the central environment ministry or their regional offices, depending on the forest area to be diverted. Linear projects such as railways and highways are approved by the regional empowered committees. This

scrutiny helps understand the unintended impact on wildlife, forest cover and long-term environmental sustainability of the project. For instance, some of the 13 projects now exempted from the process pass through notified tiger reserves and national parks. There will now be no scrutiny of their impact on the movement of wildlife, or on the break-down of forests. These projects, which include doubling of tracks and gauge conversions, were approved after discussions over two years, and backtracked on the government's order from December 2017 that all forest land used by the railways for doubling or gauge conversion would be subject to forest approvals, irrespective of ownership. The ministry's circular exempting these projects from forest clearances is contrary to the Forest (Conservation) Act's provisions. Over 500 projects were cleared in India's Protected Areas and their 'Eco-Sensitive Zones' by the National Board of wildlife over the four years, between June 2014 and May 2018. In comparison, the preceding United Progressive Alliance (UPA) government had cleared 260 projects between 2009 and 2013. No more than 1.1% projects were rejected annually, on average, between June 2014 and May 2018, dropping from 11.9% under the previous UPA government between 2009 and 2013. Approved projects will impact national parks, tiger reserves and this is estimated that at least four of the 13 approved projects will fragment a national park, a tiger reserve, a tiger corridor or a wildlife sanctuary. If the 261 km Katni-Singrauli line is doubled, 33 km will pass through the Sanjay Dubri National Park in Madhya Pradesh, and will also disturb the tiger corridor connecting Bandhavgarh with the national park. In July



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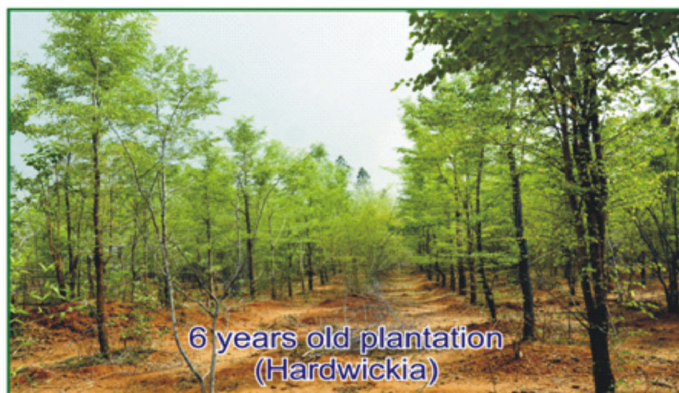
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- SCCL honoured with "Indira Gandhi Vriksha Mitra Award - 2004", "Teri Corporate Environment Award - 2004", "Golden Peacock Environment Management Award-2005" and "Golden Peacock Innovative Product/ service award -2015" and many more for it's Eco & Environmental friendly mining.
- Sri N.Sridhar I.A.S., C&MD SCCL honoured with "Asia Pacific Enterprenuer Ship Award - 2018" and "Outstanding Leadership Award - 2018".



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2017, the National Tiger Conservation Authority told the railway ministry that 250 km of railway lines, including the Katni Singrauli line, pose a high degree of threat to critical tiger habitats, according to a presentation made to the railway ministry in 2017. The doubled Hospet-Tinaighat-Vasco line will pass through Goa's Bhagwan Mahaveer Sanctuary and Karnataka's Dandeli sanctuary while the Lucknow-Pilibhit gauge conversion will increase traffic and construction inside the Pilibhit tiger reserve in Uttar Pradesh. At the root of these approvals is the Akola-Khandwa gauge conversion project. In 2017, when the Akola-Khandwa project came to the environment ministry for forest clearance, the railways said that the project did not need a fresh forest clearance since the gauge conversion would happen on land that was in their possession before 1980. The project, which involves converting the 176-km meter-gauge line into a broad-gauge line, received the approval of the environment ministry in January 2017. Of the 176 km, 18 km passed through the critical tiger habitat at Melghat tiger reserve, home to more than 50 tigers, and 40 km passed through forested areas. The project would divert 161 hectares of forest land from the tiger reserve and the estimated cost was Rs 2,000 crores (\$310 million). In December 2017, the environment ministry clarified that even if the railways owned the land, they would need to apply for forest clearance since fresh forestland was to be diverted, according to a government order. This clarification was based on the opinion of the Ministry of Law and Justice, the order said. In late 2018, the approval for the Akola project was challenged before a Central Empowered Committee (CEC) constituted by the Supreme Court, which asked the National Board of Wildlife

to review the project's clearance given its impact on a tiger reserve. The NBWL sent the proposal back in February 2019. Given the back-and-forth on forest clearances for railway land, the railway ministry referred the matter to the Attorney General of India (AG), K K Venugopal, who sided with the railway ministry. In his 11-page opinion, issued in April 2018, AG Venugopal said that the Railways Act, 1989, gives the railways the power to execute necessary works even if it alters the course of any rivers, brooks, streams or other water bodies. The opinion of the AG is not a correct statement of laws as it does not take into account breaking up of land, and every single court direction that has said that the Forest Conservation Act will apply if there is a fresh requirement of forest land.

MANAGEMENT EFFECTIVENESS

EVALUATION (MEE) REPORT 2018: However, an analysis of another report, Management Effectiveness Evaluation (MEE) of Tiger Reserves 2018, also released on the same day by the Prime Minister but nobody finds any mention of it. This report shows that at least half of India's 50 tiger reserves are facing threats from linear infrastructure like roads, highways and railway lines. At least 20% of India's total tiger reserves are also threatened by invasive plant species such as *Lantana camara*, and about 20% of the reserves have unsustainable pressure from pilgrims visiting temples inside the tiger reserves, notes the report. Some of the other threats outlined in the report evaluating tiger reserves were poaching, pressure on tiger habitat from villagers living inside tiger reserves, human-wildlife conflict, lack of forest staff, hunting of animals, hydropower projects, mining, improper garbage disposal, pollution,

and climate change. The tropical dry forest is particularly severely invaded owing to its history of anthropogenic disturbance which is known to result in high numbers of exotic species. Dry forests in southern India are also critical habitats for globally threatened species such as the tiger (*Panthera tigris*), Asian elephant (*Elephas maximus*), gaur (*Bos gaurus*) and wild dog (*Cuon alpinus*). Yet exotic plant invasions in this endangered forest ecosystem have hardly been addressed.

NO STUDY ON EXOTIC SPECIES IN INDIAN PROTECTED AREAS:

Invasive plant species in Indian protected areas have received relatively little attention until recently. This may partly be due to a historical emphasis on wildlife protection, rather than on a broader science-based approach to conservation of biodiversity and ecosystem functioning. A literature review of invasive plant species in India showed that nearly 60 % of all studies have been done since 2000, and only about 20 % of all studies are from protected areas. Studies from protected areas have largely focused on a small subset of invasive alien plants, and almost half these studies are on a single species, *Lantana camara*, probably reflecting the species' ubiquitous distribution. The spread of alien plants in India has been both ecologically and human mediated. Efforts to manage plant invasions have, in the past, been diluted by the ambivalence of managers attempting to find beneficial uses for these species. Despite growing knowledge about the harmful impacts of certain invasive plants on native species and ecosystems, their deliberate spread has continued, even till quite recently. And, despite the successful implementation of management initiatives in some protected

areas, these efforts have not expanded to other areas. The lack of a national coordinated effort for invasive species monitoring, research, and management is unfortunate as we are not able to understand its impact on the food chain in the ecosystem.

CORRIDORS ARE MISSING: The obvious function of corridors is to facilitate physical movement, which is crucial to the long term viability of animal population: feeding/foraging, seasonal migrations as well as permanent movements in case of habitats being rendered unfit (due to climate change or other anthropogenic factors) are facilitated by, and occur through, corridors. Moreover, these wildlife corridors play an important role in the breeding process of tigers by connecting large patches of tiger habitat, we ensure that there is a genetically healthy tiger population as well as space, for transient and dispersing animals to cross to new areas to establish and maintain healthy breeding populations of tigers in the wild. India has a number of wildlife corridors, but they need to be well-defined. As of today, The Wildlife (Protection) Act, 1972 ('WLPA') does have provisions for notification and management of protected areas, but hasn't addressed connectivity in any clear manner. In the scientific study, an increasing emphasis on linear infrastructure is stated as a major reason for habitat fragmentation and isolation of species. Whether it's roads, trains or power lines, the increasing human needs without sufficient consideration for wildlife protection has been detrimental not only to the forests, but also to the wildlife and human communities that live around it. The unsustainable development has only had an adverse impact on the ecological status in these areas, and that needs to be

addressed properly. Tiger and elephants' movement routes have been affected, building has taken place without any attention to the ratios of built up areas to green areas, and noise and light pollution has not been discussed. In many regions the demand for water has impacted on the water table of the region and unsustainable pressures on rivers and streams. All linear intrusions in the forest areas are a major form of disruption, and destroying the ecological integrity of that area and adversely affecting wildlife found in that area. Many of them cause irreversible damage to the area, many permanently blocking the corridors. It is clearly evident from the perspectives of WWF programme officers, environmental lawyers and conservationists, that as of now, there are no guidelines that define wildlife corridors in India. This is an area that needs attention. While human-animal conflict is inevitable, there is no denying that effective law enforcement, scientific research, and strong mitigation measures are crucial in maintaining ecological balance. These forest corridors are like umbilical cords, without which biodiversity will perish. Coal and non-coal mining, thermal power, iron, steel and cement industries pose the largest threats to forest contiguity in this landscape. Corridors linking eight tiger reserves in central India Bandhavgarh, Sanjay Dubri, Palamau, Kanha, Achanakmar, Satkosia, Simlipal and Tadoba-Andhari stand to be impacted in varying degrees if mining companies get their way. A geographic information system (GIS) analysis conducted by the Eco-informatics Lab at the Ashoka Trust for Research in Ecology and Environment (ATREE), Bengaluru, shows that mining existing forest areas will lead to the destruction of more than one million hectares of forest, of which more

than 739,000 hectares is dense forest. If the coal blocks are opened up by the government, connecting forest corridors between several of the major protected areas in central India will stand isolated. Altogether, 13 coal fields in this landscape will impact eight tiger reserves. These reserves are home to more than 250 tigers and other endangered wildlife, and connecting forest corridors are essential for their survival.

HABITAT LOSS IS PROBABLY THE GREATEST THREAT TO THE VARIETY OF LIFE ON THIS PLANET TODAY:

It is identified as a main threat to 85% of all species described in the IUCN's Red List (those species officially classified as "Threatened" and "Endangered"). Increasing food production is a major agent for the conversion of natural habitat into agricultural land. Forest loss and degradation is mostly caused by the expansion of agricultural land, intensive harvesting of timber, wood for fuel and other forest products, as well as overgrazing. The net loss in global forest area during the 1990s was about 94 million ha (equivalent to 2.4% of total forests). It is estimated that in the 1990s, almost 70% of deforested areas were converted to agricultural land. Around half of the world's original forests have disappeared, and they are still being removed at a rate 10 x higher than any possible level of re growth. As tropical forests contain at least half the Earth's species, the clearance of some 17 million hectares each year is a dramatic loss. Human impact on terrestrial and marine natural resources results in marine and coastal degradation. Population growth, urbanization, industrialization and tourism are all factors. In 1994, it was estimated that 37% of the global

population lived within 60 km of the coast. Poverty, consumption and land-use patterns contribute to the degradation of marine habitats and to the destruction of the species that rely on them to survive. The Indian government has diverted over 20,000 hectares of forest area for developmental activities such as mining, thermal power plants, dams, road, railways and irrigation projects in the past three years (2015-18) across India. According to the official data revealed by the National Democratic Alliance government in Parliament in December 2018, a total of 20,314.12 hectares of forest land (almost the size of Kolkata) was diverted in three years 2015-2018 (till December 13, 2018). During this period, the ministry had received a total of 4,552 proposals and of those 1,280 (28.11%) got approved. But the diversion of forest land for developmental projects has always been a contentious issue and in the past 10 years the opposition to diversion has increased with environmentalists repeatedly alleging that the union environment ministry only works like a rubber stamp clearing whatever projects come to it, seeking diversion of the forest land.

According to information revealed in the Parliament, Telangana topped the list with 5,137.38 hectares of forest land diverted, followed by Madhya Pradesh with 4,093.38 hectares and Odisha with 3,386.67 hectares of forest area diverted. The three states together account for over 62% (12,617.43 hectares) of the total forest land diverted during the said three-year period. The reasons for diversion of forest area varied from irrigation, hydropower, road and railway projects to defense, mining, transmission line, schools and wind power projects. Of the total forest area diverted during the said time, the

highest amount was diverted for irrigation projects, followed by mining and thermal power plants.

GENETIC POLLUTION IN INDIAN TIGERS:

India's tigers are facing extinction owing to a collapse in the variety of their mating partners and the resultant lack of genetic diversity. India is home to around 60 per cent of the world's wild tigers, and even here their numbers remain low and genetic diversity is declining rapidly making them increasingly vulnerable to extinction. Scientists have compared genetic data from modern tigers with historical tigers shot during the time of the British Raj (1858-1947: the period of British rule over India) in order to gain a historical perspective of genetic diversity. Researchers identified a very high number of DNA variants in the tigers shot during the British Raj 93 per cent of which were not present in the Indian tigers of today. This is due to loss of habitat and habitat fragmentation, meaning lower population sizes, and the prevention of tigers from dispersing as they once would have, which means their gene pool is no longer mixing across the subcontinent. This is important because tigers, like all other species, need genetic diversity to survive especially under climate change so what diversity remains needs to be managed properly so that the Indian tiger does not become inbred, and retains its capacity to adapt.

(The author is Retired PCCF of Uttar Pradesh and his E-mail I.D. is

umashankar.87@gmail.com)

TIGER VS. LION

By

K.B.R. Reddy

INTRODUCTION: On the front cover page of Vana Premi of December 2018, the Editor of the magazine published a picture of Tiger and down below the picture, it was captioned as, "*Panthera tigris* – The King of the Forest." The caption had aroused feelings of one revered reader, Dr. C.N. Rao, and in a letter to the Editor, he questioned if what he had written was correct description. The text of the letter gives an impression that there is some other carnivorous animal of the jungle presumably Lion (*Panthera leo persica*) which is worthy of being called "King of Forest". Nothing thereafter appeared in these columns. A debate or study in depth would be refreshing.

I am not a specialist in wildlife; I am however a wildlife enthusiast and read often literature on forest and wildlife, before and after retirement. During my service, I had seen tiger from a distance on three occasions and had seen Leopard (*Panthera pardus*) from close quarters. These two panthers had been killed by my superiors on two different occasions. Tiger (*Panthera tigris*) in Telugu is called *Pedda* (Big) Puli and a panther or leopard (*Panthera pardus*) is called *Chirutha* (small) Puli.

IMPORTANCE OF LION AND TIGER: Before resolving the status of Lion and Tiger, let us examine the place of the animals in the world of wildlife as also in the social fabric. Both the animals belong to the cat family. They are the symbols of strength and courage.

Some national heroes, political legends and great sportsmen in the society, who received recognition for their patriotism, bravery and valor, are lionized. Examples: Tipu Sultan is believed to be "Tiger of India" for fighting against the British, but victorious British army called themselves as "British Lion". Col. Keshari Singh

who described many man-eaters, like Jim Corbett, was known as "Tiger of Rajasthan". Sheikh Abdulla, who fought against the Raja of Kashmir, earned the title, "Lion of Kahmir" and in Urdu he is referred to as "Share-e-Kashmir". (Lion in Urdu is called "Share-e-Babar"). Late Lala Lajpat Rai, a great patriot and freedom fighter is popular as "Lion of Punjab". Tanguturi Praksam, freedom fighter and a popular leader in the erstwhile province of Madras (including Andhra Region) was known as "Andhra Kesari". Tiger Jogender Singh was a famous wrestler. Tiger Pataudi was a distinguished cricketer. Person belonging to certain communities like Sikhs and Rajputs suffix 'Singh' to their names. In some parts people add 'Sinha' to their names.

PLACES KNOWN BY LION OR TIGER: There are some places which are known by either a lion or tiger. Some places which come to my mind are: Simhadri, Simhachalam, Simhapuri (Singpur), Singaram, Narsingapuram, Narasimhulapeta. King's seat was called *Simhasan* and the main entry of the palace is known as *Simhadwaram*. Places connected with tiger are: Pulivendula, Pulichintala, Pulimadugu, Pulimamidi.

IMPOTANCE OF TIGER OR LION IN HINDU RELIGION: In Ramayan, an ancient Indian epic, describes inter relationship of forest and tiger in the following words:

Vanam hi rakshyate vyghrih-Vyaghran rakshati kananam

Forest is protected by tiger-And Tiger protects forest

Goddess Durga is shown riding a tiger. This Deity is believed to be a formidable force to destruction of evil. Lord Siva is shown wearing a tiger's skin. Idols of Tigers are shown guarding

temple (*Dwar Palaks*). Swamy Ayyappa is shown riding a tiger. In rituals performed on various occasions tiger Dance takes place in the frontline of procession.

PLACE OF LION IN NATIONAL LIFE: Lions of Asoka Pillars was adopted, after independence, as National Emblem of India. Asoka lions adorn on the shoulder badges of senior police officers and similarly on the shoulder badges of senior officers of defense personnel. Lion has an important place in the culture of Sri Lanka. Lions finds place in the National flag of Sri Lanka. Sinhala is one of the official languages of the country.

HUNTING TIGERS: During the medieval period, tigers were abounding in India and many of them were hunted down by the British and the native princes as a sport. A crazy prince arranged film shooting of a fight between a lion and a tiger in a deep pit in which the tiger is defeated. It is presumed that lions occupied different eco systems than the tiger. Tiger is vulnerable to lion. The forests of Adilabad and Warangal districts of Hyderabad State teeming with tigers and many of them fell to the guns of ruling dynasty. In an annual event during the VI Nizam Mir Mahbub Ali Khan, as the legend goes, a local land lord in Mulug area organized a *Shikar*. On Successful shooting of a tiger, the land lord was happy and took permission of the king that, if a son is born to him he would name him after the king. A son was born and the child was given the name of Mahbub Reddy.

WHO IS THE KING OF FOREST? Lion is truly a Majestic and Royal Animal. Indian tiger is no less. He is also called Royal Bengal Tiger. Yelling in anger or victory is compared to 'Lion Roar' (Simha Garjana). Tiger is not just a symbol of strength and agility. As compared to lion, the tiger enjoyed much wider significance at popular level. Lion was National Animal. Lion was dignified in Europe and Middle East with the title of "King of

Beasts" and today holds that title in Africa. There can be no doubt that the tiger has occupied the throne in East Asia.

Valmik Thapar today he is one of India's most respected wildlife experts and conservationists says "Lion is restricted to Gir forests but the tiger roams all over. It is true King of the Jungle"

Tigers assert and maintain control over their territories by continuous patrolling them. The territory is marked by what is called spray marking. This strong musky smelling fluid is mixture of urine and secretion of anal glands. Feces along with raked marks of scratching on trees are some other tools of communication. Other means of communication is roar which is blood chilling to humans and other animals.

CONCLUSION: I have endeavored to find an answer to the question, who is the king of the forest? I could not find a definite answer to it, though I knocked at many doors. The books that I referred to are: The Book of Indian Animals by S.H Prater; A Guide to Indian Mammals by Vivek Menon; The story of Indian Tiger by Kailash Sankhla. Even Google could not be of much help to me to find the correct answer. Thapar, the only expert who said, Tiger is the King of the Jungle.

I remember to have read news about 'Tigon', a cross between Tiger and Lioness. But it did not survive for long.

In a recent order of the Supreme Court, some lions had to be moved into the forests of Madhya Pradesh. I have no information of its implementation.

I feel much more can be said on the subject. For the preset I am inclined to agree with editor on the caption. I will appreciate if readers throw some more light on the subject.

(keesarabuchiram@gmail.com)
Phone: 966 609 7788)

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.		
	Sarva Sri		9.	D.Sudhakar Reddy 14-10-1966
			10.	Smt. G.A.P. Prasuna 21-10-1979
1.	A.Rasheed Khan	06-10-1937	11.	K.Appala Narasimha Chary 03-11-01961
2.	T.Krishna Murthy	07-10-1926		
3.	L.Lohith Reddy	08-10-1931		
4.	P.Subrahmanyam	08-10-1946		
5.	U.Govind Rao	08-10-1953		
6.	R.K.Rao	20-10-1935		
7.	V.Ranga Rao	20-10-1945		
8.	N.Venkataramnarsaiah	20-10-1954		
9.	C.Subba Rao	24-10-1943		
10.	B.M.Swamydas	24-10-1954		
11.	Dr.G.Narsaiah	24-10-1957		
12.	K.Jagan Mohan Rao	05-11-1941		
13.	D. Nagabhushanam	05-11-1955		

Secretary

S.No.	Name of Serving Officers	D.O.B.
1.	Smt. P. Rajeswari	21-10-1973
2.	C.P.Vinod Kumar	21-10-1963
3.	Lokesh Jaiswal	22-10-1963
4.	Y.Madhusudan Reddy	04-11-1963
5.	P.Krishnamachary	07-10-1964
6.	P.Ramesh	10-10-1959
7.	M.Ashok Kumar	13-10-1965
8.	R.D.Venkateshwarlu	13-10-1960

You don't stop running when you get old,
you get old when you stop running.

Son Gurdev Singh(80 years old) on a 100m track
with mom, Mann Kaur(103 years old).

If you think you're too old to exercise, look at
these two for inspiration.



Son, Gurdev Singh
80 years old

Mom, Maan Kaur
103 years old

WHAT AN EFFORT TO BRING WILDLIFE BACK!

By

Dr. Raghotham Rao Desai

"God created world, no doubt, but the Dutch created Netherlands — albeit with a little benediction from Almighty, as and when needed!"

Preamble: Markermeer with its rippling grey waters, once part of the Zuiderzee: an engineering wonder of the world (completed in 1932) which closed off a huge expanse of water to keep out the North Sea, and combat flooding — **one of Europe's largest freshwater lakes**, spread over 700 sq km: this large expanse of water regulating the level of water in the rest of the Netherlands — was visited in 1962 during the study-tour of Western Europe (as a part of Research-training in the field of Accelerated Cultivation of Quick-growing Tree-species" in Italy, under an FAO Scholarship in Forestry).

As we saw it, it was nothing more than a cloudy mass **devoid of aquatic life**, as **the sediment** (creating the dyke, separating it from a neighboring body of water — the IJsselmeer) **washed away** over subsequent decades **and sunk to the bottom of the lake**.

Dutch are a wonderful Nation to inhabit and develop Holland — a country where 26% of the land is below sea-level by reclaiming the land from the sea: though perhaps at a cost to the environment!

The artificial lake so created was vital in such a country, but **due to the said sedimentation, the lake's water turned cloudy** and found to negatively impact fish and bird population, as also plants and mollusks. The Forest Officers, aided by the Engineers and Scientists were of the serious view that they had to intervene.

Strategy adopted (during this century):

Five-and-half decades after the said situation, Dutch Ranger Andre Donker and his associates are hopeful that a newly created archipelago (an extensive group of islands) will surely be bringing nature back to the area via a typically ambitious engineering project for a low-lying country that has battled the sea for centuries, which can be described as one of the largest rewinding operations in Europe as the solution is a bold one: about 8 km from the port of Lelystad, artificial sand dunes have been built a new over the decades (with the help of dredgers known as Marker Wadden) — stretching over 700 ha in the lake — which are covered by sparse vegetation mostly. Five of these islets are also serving as resting places for around 30,000 **swallows** (**Hirundorustica-Hirundinidae**) — the migratory swift-flying insectivorous songbirds with forked tails — in addition to more than a hundred varieties of plants, most of which having **been brought in by windborne (winged or samaroid) seeds**. In the water there appears to be a sort of "explosion" of **plankton (small and microscopic organisms drifting or floating, consisting chiefly of diatoms, protozoan's, small crustaceans**, and the eggs & larval stages of larger animals) that guarantees a large amount of food for the birds.

In addition, **graylag goose** (a large goose with mainly grey plumage, the ancestor of the

domestic goose: **Anseranser**), **common tern** (a sea-bird related to the gulls, typically smaller and more slender, with long potential wings and a forked tail: **Sterna spp.**), several species of **waders (sandpipers, plover or other wading birds)** such as the **great egret** and the **night heron** (birds with mainly white plumage, having long plumes in the breeding season: **Egretta/Bubulcus spp.**) had also returned, testifying to the islands' success.

Conclusion: The project works for the preservation of the nature. Three wooden bird observatories, a house for the islands' guard 12 kms. of footbridges & unpaved roads have also been built on the main island, which is open to the public, while **four others are exclusively reserved for wildlife and plants — a once sterile space now returned to nature** (costing about \$ 68 million, much of it having been donated by individuals to a Dutch NGO who works for preservation of nature).

Continued from page No: 19.....

read and even teaches her rudimentary English. This exposure moulds Parvathi's personality. She discusses and learns a lot about ethics and moral science from her *Guru* and her parents as well. She finds all that she read in the books before her eyes, in the nature around her and in the people in her village. She spends most of her days with her friends roaming and playing in the nearby woods. They run among the trees and bushes like hares and climb up and down the trees swiftly as squirrels. Trees and plants are their play-mates. They coo the birds imitating their voices confuse them and giggle with joy. Singing, dancing, playing in nature's laps, Parothi grows. That Parothi had blossomed into adulthood is noticed by her parents only when young and charming Shivai of Shankaragudem approaches them with a marriage proposal.

In an annual *Jatra* in Shankaragudem, she catches the attention of Shiviah. Attracted by her charm and beauty, Shivaiah could not take his eyes off her when he saw her in the temple. After the temple rituals, he finds her in the *Jatra* and follows her. The graceful contour of her body and the bubbling, giggling nature of her conduct increase his heart beats and he craves for her company. Parvathi's coy looks tell him

that her reaction is positive towards his mute advances.

Parvathi notices that an attractive well built young man with sharp features has been looking at her for a long time. His adoring looks cause a new but happy sensation in her body. She slowly moves away from her friends and leads the young man to a secluded place behind the temple. When they are all by themselves, the young man holds her hands. Both stay in silence for a few seconds totally electrified at each others' touch and not willing to be separated. They slowly move behind the temple and sit under an *Arjuna* tree on the bank of Koneru. Speaking mostly in silence, they feel the longing for each other. It is love at first sight, a love that remained life-long for Shivai and Parvathi.

Shivaiah's parents had died during his childhood and he was raised by his uncle who also had died. On the suggestion of Parvathi, Shivaiah approaches Hariprasad, to take their relation further with her parents. He accompanied by Hariprasad visits Timmareddy and Timmakka and requests for Parvathi to be married to him. After knowing that Parvathi is also fond of Shiviah, Timmareddy and Timmakka solemnize the marriage with all traditional grandiose.

BANNERGHATTA BIOLOGICAL PARK, BENGALURU

BY

V.SANTHASEELA BABU

Prelude: During the month of August, I had been to Bengaluru on some personal work. I had the opportunity of visiting the 'Flower Show' in the 'Lal Bagh' gardens organized on the eve of Independence Day. I have shared the Flower Show photographs in our Whats App group of 1968-70 SFRC Batch. On seeing the photographs my batch mate from Maharashtra Mr. G.J. Kamble contacted me and informed that his daughter Mrs. Vanashree, IFS CCF is the Executive Director of Bannerghatta Biological Park and requested me to meet her. When I contacted Mrs. Vanashree she extended an invitation to come and visit the Bannerghatta Biological Park and sent me the contact No. of her P.R.O who would take care of our visit. Like this I had the opportunity of meeting Mrs. Vanashree, the daughter of my batch mate Mr. GJ Kamble and visiting the Bannerghatta Biological Park with my family during the 1st week of September.

Since the October issue of Vana Premi Magazine is going to be a special issue on Wildlife, I thought it would be appropriate for me to share the salient features of Bannerghatta National Park with the readers of Vana Premi.

History: The formation of Bannerghatta National Park in the midst of the forests in the valley of famous 'Champakadhama Hills' close to the city was initiated during the year 1972 as a Mini Zoo. Subsequently in 1974 the then Chief

Conservator of Forests, Sri YML Sharma, IFS, felt the need for a place where Bangaloreans can enjoy the solitude of wilderness. He initiated efforts by notification of land and was instrumental in creation of Bannerghatta National Park. Many animals were introduced in to the Park. During the year 2002 Bannerghatta Biological Park was created with 545.00 ha. Which was further extended to 731.88 ha. It may not be out of place to mention here that Mr. B.M.T. Rajeev, IFS, who contributes articles to our Vana Premi Magazine, from Karnataka, was the first Officer who was in charge of the Bannerghatta Biological Park during 2002.

Vision of the Biological Park: The vision of the Bengaluru Bannerghatta Biological Park is to create an opportunity to the citizens - especially to children of Bangalore Metropolitan City to have a Biological Recreation Center very close to the city in the midst of the forests in the valley of the famous Champakadhama hills inside the Bannerghatta National Park. To accomplish this vision, a mini zoo was created in 1972 which gradually grown into the present Biological Park by 2002. With the creation of Bannerghatta Biological Park, the vision was enlarged to meet the ever growing demands of the Bangaloreans/ tourists from outside for recreation and education of

younger generations; and also to create awareness on the importance of conservation of flora and fauna - the biodiversity of the nature for the benefit of the future generation in addition to the conservation of the gene pool of the endangered species of wild animals of the region/country

To inculcate the awareness of nature conservation, provide natural habitat to all the animals suitable for their conservation and propagation through educational program and to connect visitors and wild animals through exemplary welfare, care and best educational practice to foster public support in ex-situ conservation.

The field activities of the Biological Park are many fold as it is classified as one of the major Zoos in the State/Country with a lot of scope for scientific development. The activities prevailing in the Biological Park are Maintenance of Zoo - which exhibits varieties of birds, reptiles and mammals within the well maintained enclosures. Running and maintenance of safaris - drive of the tourists through the animals' enclosures in the vehicles i.e. Tigers, Lions, Bears and Herbivores safaris and also for breeding of endangered species of animals /ungulates; Rescue Centers to provide life time facilities to the rescued animals like Tigers, Lions and Bears from Circuses, *madharies* etc., Butterfly park; Nature camp for the people those wish to stay and study the flora and fauna in forests; tourism and facilities to visitors; feeding and health care to captive animals; with inbuilt administrative

set up to manage all the affairs of the Bannerghatta Biological Park.

Objectives:

- To compliment and strengthen the national efforts in ex-situ conservation and strengthen the conservation of the rich Bio-Diversity of the Country, particularly the fauna.
- Supporting the conservation of endangered species by giving species, which have no chance of survival in wild, a last chance of survival through coordinated breeding under ex-situ condition and raise stocks for rehabilitating them in wild as and when it is appropriate and desirable.
- To inspire amongst Zoo visitors empathy for wild animals, an understanding and awareness about the need for conservation of natural resources and for maintaining the ecological balance.
- Providing opportunities for scientific studies, Research and documentation on conservation and creation of database for sharing between authorities involved in In-Situ and Ex-Situ conservation.
- Bring awareness to the public on conservation and propagation of wildlife by conducting regular awareness and education campaigns and programs.
- Providing dedicated facilities for the rescued and orphaned wild animals by providing appropriate housing, clinical and management facilities in off-the display area.
- To serve as gene pool and germplasm reserve for future biological research on wild animals

and to extend facilities for studies on behavior and breeding of different animals.

- To provide recreational opportunity to the visiting tourists.
- To sustain the founder population and also to augment the depleting populations of endangered species in the wild.

Safaris in the Biological Park: Safari in the natural forest is expedition to observe the free-range of wild animals in their natural habitat. The visitors in the secured safari vehicles are allowed inside the safari will have the thrill of wilderness by seeing them in the midst of the forest through a keen and close observation. The Bengaluru Bannerghatta Biological Park is one of the pioneers in providing such facility to the visiting public.

The visitors will have the thrill of wilderness and wildlife with the feeling of being in the midst of the forest and wild animals. This is the main theme of the Safaris formed in the Bengaluru Bannerghatta Biological Park in the midst of the Natural forests i.e. Ragihalli Reserve Forest, 4 km away from the zoo connected by asphalted road. The route to the safari passes through the picturesque hillock 'Mattubunde' giving an opportunity to the visitors to have the inspiring and breathe holding panoramic view of the landscape of the broken chain of hillocks and valleys with lush green forests. The Park is one of the pioneers in creating and maintaining the Safari of the wild animals to see, study and enjoy the majestic predators and other animals.

One of the important flagship products is the

Safari which attracts the visitors of all kinds in thousands. The Safari is one of the most invigorating and exciting activity in Bannerghatta Biological Park. This is jointly managed and monitored by Bannerghatta Biological Park (BBP) and the Karnataka State Tourism Development Corporation (KSTDC) wherein the fee for the visitor is fixed by the BBP and the KSTDC focuses on Counter sales, Revenue collection, and physically monitoring of the 20 Mini Buses with a capacity of 30 persons for each Bus that ply in the Safari Routes. The sharing of Revenue is on the basis of 50:50 between BBP and KSTDC. Two high end AC Buses are also available for the high-end visitors. The Safari tours are lead by the Naturalists helping the visitors to understand by interpreting the Flora and Fauna. Apart from this, the BBP is also conducting tours by AC and Non-AC Jeeps, 6 seater AC Xylo and 7 seater AC Innova Vehicles for the benefit of families and small groups on payment of relevant charges.

The following are the Safaris established in the Bannerghatta Biological Park covering an area of 158.5 ha in Bannerghatta RF and Ragihalli RF:

1. Herbivore Safari.
2. Elephant Care Center.
3. Bear Safari.
4. Lion Safari
5. Tiger Safari.

Herbivore Safari: This is one of the largest segments of the Safari enclosures which has evolved from 1970s and was thrown open for

the viewing by the public in 2002. The Herbivore Safari has been barricaded with a stone wall and the additional support of Solar Fence and an Elephant Proof Trench (EPT). In the enclosure the vegetation that is required for the survival of the Herbivore population is abundantly available due to which they are flourishing very well. Species like *Bamboo*, *Anogeissus* spread all along the water bodies and the palatable grass species such as *Saccharam spontaneum*, *Symbopogan* spp., *Heteropogan* spp. etc; commonly occur which constitute the main fodder to the animals. The patches of tree species such as *Shorea telura* etc; provide good shade to the animals. The water bodies like Deepankere, Chennammankere, Gowdanakere and Seegadikunte cater to the water needs of the animals throughout the year. Besides the naturally available animals like Wild Boar, Porcupine, Pangolin etc, a few larger animals such as Gour, Sambar, Cheetal, Barking Deer, Blackbuck, and Neelgai were brought and released under the rescue and rehabilitation programme. Over the past two decades all these animals acclimatized themselves to the local environment and now their population has multiplied substantially. There are 984 animals belonging to different Herbivore species as on 31-03-2018 in this Safari.

Elephant Care Center: An area of 60 ha. supported with thick Bamboo breaks and a big water body named Sigekattekere interspersed with grass lands is earmarked for the Elephant care center. An area of 49.50 ha. is enclosed with

a secured Solar Power Fencing with gates wherever necessary where the captive Elephants are housed. An area of 0.65 ha. land for emergency Coral is constructed within the enclosure to contain and spreading the Elephants for medical and bout of uncontrollable aggression. There are 21 (9 male and 12 female) Elephants in the Elephant Care Center. Within the area of Herbivore Safari an Elephant weaning care center has been established. While the visitors move around the Safari in vehicles, they get a window view of the Elephant activity at the Center.

Bear Safari: Bear safari has been established in an area of 20.00 Ha in the Ragihalli Reserve Forest during 2002. The Safari area is provided with peripheral open moat. The outer wall of the moat is embedded with stone slabs all around in order to prevent the Sloth Bear escape or to avoid trespass of any other free range Wildlife into the Safari. This Safari is also provided with animal housing facilities in 05 blocks namely Panchavati, Chitrakuta, Kishkinda, Dr. G.K.V Block and Jambava. There are totally around 100 animal holding rooms with a facility of kitchen. The forest area is planned to be planted additionally with varieties of fruits yielding trees to create natural habitat for Bears. The facility created in the Bear Safari was left to the management of Wildlife SOS to house and maintain additional number of Bears rescued from 'Maddharis' (Kalandars) from all over India in the year 2005. Presently 77 (31 male and 46 female) Bears are housed in this facility. The

identified groups of animals are only allowed into safari on a rotational basis regularly for the benefit of visiting tourists.

Lion Safari: It is an open enclosure created in an area of 6.00 Ha of Ragihalli Reserve Forest during 1979. All around the 6.00 Ha of forest area, a tall chain link mesh with the height of around 15 feet has been erected. Further a big moat all around the chain link mesh fence has been created to avoid the tress pass of any wild animals living in the area. The animal house is provided with 11 holding rooms and all the 11 holding rooms are provided with retrieval area for the day time rest. The identified groups of animals are only allowed into Safari on a rotational basis regularly for the benefit of visiting tourists. There are 19 (10 male and 9 female) Lions housed in the Lion Safari.

Tiger Safari: The Tiger Safari area has 3 different units within itself as follows:

1. Indira Gandhi Tiger Safari, Appaiah Tiger Safari and White Tiger Safari.

The peripheral boundary has been created for all the 3 units by digging open moat and erecting chain link mesh fence. Indira Gandhi Tiger Safari has the facility of 11 holding rooms. The Appaiah Tiger Safari has the facilities of 2 animal housing complexes. Both animal houses together have 10 animal holding rooms. The White Tiger Safari has the facilities of 2 animal housing complexes. There are totally 8 animal holding rooms. All the holding houses are provided with basic facilities of water and

sanitation. The identified groups of animals are only allowed into Safari on a rotational basis regularly for the benefit of visiting tourists. There are 26 (15 male and 11 female) normal tigers and 7 (3 male and 4 female) white Tigers that are housed in Tiger Safari.

Butterfly Park: According to some estimates, there are about 20,000 different species of Butterflies in the world. Out of which it is said that 1,501 species exist in India. Butterflies have a special place in the insect world. The names such as "Flying Jewels" indicate that butterflies are considered as being beautiful, elusive and fascinating. The Park was conceptualized as one integrated center that would support education, conservation and research activities with exclusive focus on butterflies as flagship ambassadors of conservation.

The Zoo Authority of Karnataka (ZAK) with Department of Biotechnology (DoBT), Government of India, has jointly initiated the Project during the year 2003 under a special master plan. The construction work initiated in 2003 was completed during 2006 and was inaugurated on 25th November 2006 and opened to the public for visitation. It is the unique Project in the entire country and is serving as a role model in the Nation, and most of the Zoos and Parks interested to establish Butterfly Parks are using this as knowledge hub and plan to replicate.

The Park at Bannerghatta has the following major components:

A Butterfly garden to sustain local Butterfly population, a Butterfly Conservatory enclosed under polycarbonate roof, research and captive breeding laboratory, a Museum and a Curio shop.

The entire park has been established over an area 7.5 acre which has a Butterfly trail of about 1 km length. The 'Butterfly trail' established over a five acre garden leads the visitors to an innovatively designed three dome structure housing the Conservatory, Museum and the Multi-media Center. The first of these, with a transparent polycarbonate roof was designed as the 'Butterfly Conservatory' with a landscape garden. The huge dome shaped structure with 10,500 sq. feet of landscape garden would provide all possible habitat requirements including host plants and house Butterflies throughout the year. The Conservatory leads into a Museum that will provide information through dioramas with their host plants etc., which leads into audio visual dome here where a documentary movie on butterflies is projected. A study reported that there are about 48 species of butterflies in various seasons at Bengaluru Bannerghatta Biological Park. Thirty species of butterflies belong to five families viz., Papilionidae, Pieridae, Nymphalidae, Lycaenidae and Hesperidae were breeding in different seasons under captive conditions and were released into the Conservatory dome. During 2017-18, the Butterfly Park team successfully

tried 4 new species in this breeding centre viz. Common Pierrot, Common Bush Brown, Psych Butterfly and Chocolate Pansy with their respective host plants.

Zoo: In the Zoo we find the following animals.

Mammals: There are about 18 species of Mammals listed under Schedule-I and II of Wildlife Protection Act right from Black Bucks, Leopards, Himalayan Black Bears, Rhesus Monkey, Wild Dogs, Indian Grey Wolves, Four Horned Antelopes, Jungle Cats, various Macaques etc. There are about 10 species of other Mammals like Hippopotamus, Porcupines, Hog Deer, Barking Deer, Nilgai or Blue Bull, Zebras etc.

Birds: There are about 5 species of Birds listed under Schedule-I and II of Wildlife Protection Act right from Great Indian Horn bills, Indian Pea Fowls, White Pea Fowls, Spoon Bills, Khalij Pheasants and Red Jungle fowls.

Reptiles: There are about 8 species of Reptiles listed under Schedule-I and II of Wildlife Protection Act right from Long Snouted gharials, rock pythons, Indian cobras, king cobras, Russell's vipers, common Indian monitor lizards etc. About 10 species of other Reptiles like Red Sand Boa, Star Tortoises, Caiman Crocodiles, green Iguana etc; are available.

Visiting the Bannerghatta Biological Park provides the visitors an unforgettable experience with Wildlife. Congregation of so many animals in their natural habitat is very rare to be seen.

ANR TREATMENT FOR REVIVING DEGRADED FORESTS

By
M. Ram Mohan

As part of State Government's flagship program, Telanganaku Haritha Haram, state forest department has taken up the activity of reviving the degraded forests in certain areas through Assisted Natural Regeneration (ANR) treatment method. Area with 0.1 to 0.4 density vegetation having pole crop and root stock, is to be selected after preparing treatment map after thorough perambulation of the area. Degraded forests are resulted due to high intensity of biotic interference in the form of cattle pressure, human activity.

Firstly, the degraded forest area with a minimum of 50 ha. area, is to be identified and the biotic interference, cattle and human pressures, be curtailed by digging Continuous Peripheral Trench (CPT). The CPT bund is to be fortified by taking up planting with Gachchakaya, wild fruit bearing and bamboo plants or rhizome. The trench would be sown with soaked *Acacia nilotica* seeds.

The present status of vegetation is to be assessed by taking up enumeration in control plots that will remain untreated and retained as representative plots to compare and contrast with the treated area. The enumeration is useful in preparing the estimates.

Singling, coppicing, bush removal and climber cutting, etc., cultural operations are to be taken up as part of rejuvenation of degraded forests. Singling operation involves removing multiple

shoots leaving one or two healthy ones resulting in drastic reduction in competition that would help the retained shoot(s) to put good growth. Coppice would come up in coppicing species, like Teak, Nalla maddi, etc., when they are cut. Malformed trees and repeatedly hacked trees that show little or no growth will be cut, with a slant slope, to the ground level which yield multiple shoots, coppice, of which a few are retained and others removed.

Singling and coppicing are done for all tree species, primarily for economically viable, hard wood species like Teak (*Tectona grandis*), Chennangi (*Lagerstroemia parviflora*), Billudu (*Chloroxylon swietenia*), Bandaru (*Adina cordifolia*), Nalla maddi (*Terminalia alata*), Bojja (*Xylia xylocarpa*), etc., and NTFP species like, Tuniki (*Diospyrus melonoxylon*), Maredu (*Aegle marmelos*), etc. Bushes, such as Bontha theega (*Calycopteris floribunda*) and climbers which hamper or strangle the plant growth would also be cut. All these operations radically reduce the competition and pave way for enhanced growth of the retained plants.

In addition to the above operations, planting activity is also to be taken up in certain gaps which are devoid of vegetation within the degraded forest area enriching the planting stock with indigenous species, preferably wild fruit bearing plants for wildlife sake. Seed

sowing is also taken up by scraping the soil in the gaps.

A large quantity of foliage and wood material accumulate on the forest floor due to taking up of the above operations, unlike on the normal forest floor. This material decomposes gradually and becomes useful for the plants. But, as it takes longer time for decomposition and the material gets dried, the woody material becomes inflammable and prone for causing high risk fires. Hence, fire lines of 3 to 5 mt width are laid in ANR treated area by making it into small sectors which restrict the fire to a certain area and further prevent it from spreading across. Utmost care is to be taken regarding fire prevention and extinguishing, in case of fire accident. Dedicated staff, fire watchers, need to be engaged for the purpose. Lest, the very objective of the rejuvenation of the forests will be defeated in the event of fire.

Under soil and moisture conservation works, percolation tanks, check dams, rock filled dams, staggered contour trenches, staggered trenches be taken up in the ANR area. Staggered trenches are dug across the slope to arrest the soil erosion and conserve the moisture by stopping the run off during rainy season. Trenches help in percolation of water that would facilitate the ground water table improved which would in turn help the vegetation present during summer season in particular. The dug out soil mounds of the trenches are to be planted with saplings for stabilization of the mound, lest the loose soil slides gradually and fills up the dug out trench again. The root system of the saplings planted

will ensure the stabilization of the loose mound. Again, wild fruit bearing plants are preferred for the purpose.

During second year, in ANR treated area, the operation would be maintaining fire lines alone. In the subsequent year, during third year, the cultural operations that were taken up during first year, will be again taken up and fire lines will also be maintained.

‘Zero’ percent biotic interference is to be ensured for successful ANR plot. Though the CPT prevents the biotic interference by and large, it is not fool proof, as it gets cut off or silted at a few places, due to rains, that give way to the cattle to enter in. In the back drop of having high number of cattle and goat populations in the countryside, it is very difficult for the Beat Guard to keep surveillance all the time on the ANR treated area. Provision for engaging watcher for protection of the ANR treated area, one for 100 ha. area, as provided for AR Plantations, shall be given a serious thought, for preventing the cattle/goat grazing and interference by man.

The ANR treatment is considered to be a relatively very cheap method of reforestation, vis-à-vis the Artificial Regeneration (AR) treatment, for restoring large chunk of degraded forest areas, in natural way by using simple silvicultural interventions and SMC works. Plant growth will be accelerated immensely and a perceptible change in growth of the plants can be observed in a span of few months and the degraded forest can be rejuvenated into a good forest with in a few years of time.

ANTI-VENOM PLANT DRUG – FROM THE FOREST

By

K.P. Vijayalakshmi, N. Krishnakumar and S. Umesh Kanna

INTRODUCTION: Snake is one of the most important reptiles in the world. Snakebite has been a major cause of mortality across the tropical countries including Indian subcontinent. 35,000 to 50,000 people are died every year due to snakebite and it is medical emergency encountered in the tropics. There are several reasons for mortality of the peoples due to transportation facility, identification of insect / species, inadequate service etc. Against this background, this present paper deals with the plants species that are to be found in forest which have anti-venom properties. There are number of plant species found in forests are have large Ethnobotanical utility. Ethnobotany is the systematic and scientific study of traditional knowledge and customs of humans concerning plants and their religious, medical and other uses. Several medicinal plant species have been added to several recent drug formulations and preparations for fundamental health care particularly for snake bites as anti-venom properties (Upasani et al., 2018). Several literatures are available for anti-venom properties from the natural forest as well as plantations. The current paper provides a collection of information on medicinal plants that grow and can be utilized for snakebite treatment.

ANTI-VENOM TREES: The following trees are the rich sources of anti-venom properties but the usage of this as anti-venom is limited by the humans due to its some of the disadvantages like slow curing. The trees and its methods of preparation and application are furnished below table.

Botanical Name	Family	Local names	Method
<i>Ailanthus excelsa</i>	Simaroubaceae	Peeyamaram	Decoction of the leaves with the leaves of <i>Aristolochia indica</i> prepared and mixed with goats' milk to drink for treatment of snakebites
<i>Albizia lebbeck</i>	Fabaceae	Siris	Paste of bark is used
<i>Alangium salvifolium</i>	Alangiaceae	Alangi, Aankla	Approximately 15 g of bark ground + 10–12 black peppers mixed with 72 g animal fat given every 2 h to cure snakebite. Root bark decoction is given internally to treat snakebite
<i>Alstonia scholaris</i>	Apocynaceae	Saptparni	Bark decoction given orally
<i>Annona squamosa</i>	Annonaceae	Seethaphala	Unknown
<i>Anogeissus acuminata</i>	Combretaceae	Dhavra	Poultice is applied
<i>Anthocephalus cadamba</i>	Rubiaceae	Kadam	Unknown
<i>Artocarpus heterophyllus</i>	Moraceae	Kanthal	Drink 1 cup juice thrice daily
<i>Artocarpus hirsutus</i>	Moraceae	–	Bark paste made with coconut oil and applied
<i>Artocarpus integrifolia</i>	Artocarpaceae	Kothal, Theibong	Unknown
<i>Azadirachta indica</i>	Meliaceae	Vembu, Neem	Decoction/paste is prepared and given orally (7 d)

<i>Bombax ceiba</i>	Bombaceae	Ilavu, Semal, Simul	Paste of flowers/fruits/leaves is applied on the bitten spot
<i>Butea monosperma</i>	Fabaceae	Palash, Dhak, Parsa, Plash	Bark paste applied on swelling Paste of one seed in 10 mL lemon juice is given orally
<i>Calotropis gigantea</i>	Asclepiadaceae	Akanda, Erukku	Root bark is ground into paste and made into pills and given orally Leaf latex is applied externally
<i>Calotropis procera</i>	Asclepiadaceae	Rui, Rai, Aakori	Leaf latex is applied on bitten area Root is crushed and given to drink and applied externally
<i>Carica papaya</i>	Caricaceae	Papita, Amrurbhanda, Papita	Unripened fruit of <i>Carica papaya</i> is taken and the skin is removed by slicing, salt is then rubbed over it, and the fruit is then placed over the bite with sliced portions in contact with the bite and bandaged Few drops of latex are applied to snakebite wound for quick healing
<i>Cassia alata</i>	Caesalpiaceae	Senna, Seemaiyagathi	Paste of leaves is applied externally, as well as given orally
<i>Cassia fistula</i>	Caesalpiaceae	Amaltash, Dhanba, Amaltas, Sonarkhi, Kakke	The paste & decoction of root bark with black pepper is given orally Paste of stem bark applied on bitten place. Fruit pulp is used
<i>Ficus benghalensis</i>	Moraceae	Badd, Bar, Bargad	Unknown
<i>Ficus glomerata</i>	Moraceae	Medi	The stem bark paste is applied
<i>Ficus hirta</i>	Moraceae	Tamangaddu	Root crushed & rubbed
<i>Ficus racemosa</i> and	Moraceae	Gular	The stem bark is pounded with whey applied locally
<i>Ficus religiosa</i>	Moraceae	Peepal	25 g stem bark and 8–10 cloves are pounded with animal fat (pure ghee) and given 4–6 times a day
<i>Ficus tinctoria</i>	Moraceae	Tella barnika	Unknown
<i>Gloriosa superba</i>	Liliaceae	Senganthal	Root paste or tuber paste is applied externally (2–5 d)
<i>Lantana camara</i>	Verbenaceae	Unni	Decoction of roots, flower, and stem are used
<i>Jatropha gossipifolia</i>	Euphorbiaceae	Kattamanakku	Unknown
<i>Mitragyna parvifolia</i>	Rubiaceae	Neer-kadamba	Unknown

<i>Pandanus nepalensis</i>	Pandanaceae	–	Unknown
<i>Pavetta indica</i>	Rubiaceae	Therani	A leaf paste is used externally
<i>Phyllanthus acidus</i>	Euphorbiaceae	Kawlsunhlu	Decoction of roots is given
<i>Piper nigrum</i>	Piperaceae	Bolkaalu, Menasina kaalu, Maricha, Kali-mirch, Milagu	Seed powder mixed with butter is given orally against snakebite. Flower paste with ghee given orally (4 d)
<i>Prosopis cineraria</i>	Fabaceae	Khejdi, Vanni maram	Paste of bark tied on the affected area
<i>Quercus leucotrichophora</i>	Fagaceae	Banj	Unknown
<i>Rauvolfia serpentina</i>	Apocynaceae	Nagbel, Sarpagandha lairusich, Sarpagandha	Leave juice used as antidote. Roots and leaf buds crushed with milk to make into paste used both internally and externally on affected area
<i>Saraca asoca</i>	Caesalpiniaceae	Ashok, Asoka	Unknown
<i>Sterculia urens</i>	Sterculiaceae	Karaya	Unknown
<i>Strychnos nux-vomica</i>	Loganiaceae	Kajara, Etti, Visakkotai, Yeti	Root bark juice in cow's milk is externally rubbed 3–4 times a day to treat & seed powder is also used
<i>Strychnos potatorum</i>	Leguminosae	Thethamkottai	Seed powder given orally
<i>Tamarindus indica</i>	Caesalpiniaceae	Puli	Unknown
<i>Tectona grandis</i>	Verbenaceae	Sagwan	Unknown
<i>Terminalia arjuna</i>	Combretaceae	Arjun, Marutham, Vellamarthu	Bark paste applied externally (5 d)
<i>Vitex negundo</i>	Verbenaceae	Nukki, Lakkigida	Leaf paste applied over the bitten area (5 d), as well as root extract is given with warm water
<i>Vitex penduncularis</i>	Verbenaceae	Charaigorh	Decoction of the bark is given orally at 30 min intervals

(Source: Upasani et al., 2018)

CONCLUSION: The nature is a gift to the human kind due to its enormous utility to the living organisms. The nature is the main sources of pharmaceutical properties used as medicine. But the usage of natural plants as medicine in terms of pharmaceutical application is inadequacy of health system because of its late recovery, cost effectiveness and culture acceptability. In the rural populations and tribal populations, the medicinal plants act as a major source of treating snakebite and also it widely used as a remedy for home medicine. Plant extracts represent an extremely rich source of pharmacologically active compounds and possess large amount of biochemical/ pharmacological properties. Interaction of such compounds with the toxins / enzymes leads to the neutralization / inhibition of their activities. So plant remedies may be beneficial for the treatment of snakebite.

(The author is from College of Forestry, Kerala Agricultural University, Thrissur, India, Forest College and Research Institute, TNAU, India Email: vijayalakshmikp12@gmail.com)

GOOD NEWS FROM THE HEIGHTS OF NILGIRIS

By

Mayank Sharma

Amid the chaos of climate adversaries and possible havoc of declining biodiversity, the melodies of hopes have rung again from the beautiful landscapes of Western Ghats. The population of the magnificent ungulate Nilgiri tahr known locally as *Nilgiri ibex* or simply *ibex*, has risen by 132 since 2016. The sightings of the state animal of Tamilnadu in the Mukurthi National Park have risen from 568 in 2018 to 612 this year. The officials of the Tamilnadu forest department in general and that of the Mukurthi National Park in particular are overwhelmed with this achievement.

The Nilgiri tahr (*Nilgiritragus hylocrius*) is an ungulate that is endemic to the Nilgiri hills and the southern portion of the Western Ghats in the state of Tamilnadu and Kerala in the Southern India. It is the state animal of Tamilnadu. A stocky goat with short, coarse fur and a bristly mane has been a matter of interest for environmentalists around the globe. Males are larger than females and of darker color when mature. Both sexes have curved horns. Its efficacious aptness to climb the steep slopes of the Nilgiris makes it unlike with the other Goats.

Why this is important? The significance of this achievement lies in the fact that as few as 100 Nilgiri tahrs were left in the wild by the early 20th century. In the early 1950s poachers were found to be taking a heavy toll on the tahr to the point of almost wiping them out. So, the British tea company that then owned the area in question resolutely stepped in and declared the habitat of the tahr a sanctuary. Since that time their numbers have increased significantly. The WWF-India had put the figure at 3122 in 2015. With the new data from Mukurthi National

Park and Eravikulam National Park, the figure is expected to rise. Clearly with the given data, it is visible that this has been a far bigger success story than the much-hyped Tiger Conservation Project. Though the comparison must include a number of other factors like the poaching issues, vulnerability and fertility rate of the animals, the success of Nilgiri tahr conservation despite having less resources cannot be denied. According to the Red Data list of IUCN, Nilgiri tahr is an endangered species. With the ceaseless destruction of the Shola forests in the past, the tahr had faced huge habitat destruction. However, the timely revival of the Shola forests and the Nilgiri grasslands has reversed this pattern.

My experience with the animal... I got to see and touch such an iconic animal during my visit to Eravikulam National Park, Munnar under our South India Tour of my FRO training programme in Telangana State Forest Academy earlier this year. In the first sight it seemed to be just another type of goat. However, later we got to know how special animal it was. We had finally met the real queen of the "Queen of The Hills". To our surprise, the visitors were shocked seeing a group of uniformed-students herding around a petty goat. This manifested the lack of awareness among the tourists.

What next? Few are aware of the unpublicized story behind the surprising 'friendliness' of the Nilgiri tahr. It's indeed an enigma that has puzzled wildlife scientists and conservationists for long — how a species close to extinction can 'befriend' humans in the tourism zone of the Eravikulam National Park, and to the extent of allowing people to fondle them. They freely

mingle with tourists and allow themselves to be patted and photographed, with people excitedly thronging around them. It is said that **Walter Mackay**, the manager of *Rajamallay* tea estate in the 1950s, used to toot his car's horn repeatedly while driving through the sanctuary. Attracted by the familiar and reassuring sound, the herd of tahrs soon began to mob his car, quite literally, to be rewarded with handfuls of biscuits scattered by the delighted planter.

Despite this, the present-day tourists have not been attracted towards this exceptional animal. Only few visitors are actually able to recognize the species. The need is to make these tourists aware about the significance of the ibex. Apart from this, many recent reports have shown that most of the existing habitat of the Nilgiri tahr in the Western Ghats will become unsuitable as

global warming intensifies. The man-made destruction of the open montane grassland habitat of the Western Ghats montane rain forests is another potential threat that is lurking around the corner. Hence, a robust, long-term and multidimensional policy is needed to be formed and executed.

The highly endangered Nilgiri tahr has undoubtedly been the catalyst that has spurred widespread awareness of the urgent need to protect biodiversity in this hot-spot in the Western Ghats. However, the possible threat hovering over the very existence of this catalyst is real. We as humans have this responsibility to be the protector. The ultimate question is, "Do we have the Will?" (The author is a trainee Forest Range Officer TSFA, Dulapally, Hyderabad and his E-mail ID is mksfire@gmail.com)

NEWS AND NOTES

Vanishing wildlife: 22 species have gone extinct in India: Four species of fauna and 18 species of flora have gone extinct in India in the past few centuries, according to wildlife survey organizations.

The data was tabled earlier this month in the Lok Sabha by the Ministry of Environment, Forest and Climate Change.

A.A. Mao, Director of the Botanical Survey of India (BSI) said India is home to 11.5% of all floras in the world. According to the International Union for Conservation Of Nature, a new study has shown that since 1750, more than double the number of plants have disappeared from the wild than birds, mammals and amphibians combined.

As per information given by the BSI, 18 species of plants — four non-flowering and 14 flowering — have gone extinct. The notable among them are *Lastreopsis wattii*, a fern in Manipur discovered by George Watt in 1882 and three species from the genus *Ophiorrhiza* (*Ophiorrhiza*

brunonis, *Ophiorrhiza caudate* and *Ophiorrhiza radican*), all discovered from peninsular India. *Corypha taliera* Roxb, a palm species discovered in Myanmar and the Bengal region by William Roxburgh is also extinct.

Among mammals, the cheetah (*Acionyx jubatus*) and the Sumatran rhinoceros (*Dicerorhinus sumatrensis*) are considered extinct in India.

The pink-headed duck (*Rhodonessa caryophyllaceai*) is feared extinct since 1950 and the Himalayan quail (*Ophrysia supercilios*) was last reported in 1876.

Kailash Chandra, Director of ZSI, said that the four animals can be found in other parts of the world. India has about 6.49% of all the fauna species in the world, he said.

Factors like "competition, predation, natural selection, and human induced factors like hunting, habitat degradation" are some of the important reasons that have led to these extinctions, the Ministry said.

LEGAL NOTES

Wildlife (V.B. Dasan, WLI) vs Ashok Kumar, Nand Kumar & Naresh Kumar

On 06.07.2010, Police Inspector Vivek Tyagi received confidential and credible information relating to an offence being committed by Ashok Kumar & 2 others and the matter required immediate attention. The Inspector formed a raiding party and rushed to a place near Birla Mandir. As per the information given to the police an Indica car bearing Registration No HR-55 DT-6580 arrived. On searching the car, it was found that three persons traveling in it were carrying a baby leopard skin for which they had no permit for keeping the skin in their possession. A case was registered and the property, comprising the car as well as the skin was seized. On 07.07.2010, WLI Delhi was called to the Police Station for identifying the skin. The WLI identified the skin to be of a panther and it measured 10 x 35 cm.

The case was investigated and the charge sheet was laid in the court of The Additional Chief Metropolitan Magistrate at Tis Hazari Court, Delhi. The case was taken on file in CC No. 301845/2016. The prosecution examined five witnesses PW1 to PW4, who are police officers and are material witnesses. PW5, V.B Dasan, (W.L.I.) was the complainant who filed the charge sheet in the court.

The evidence of PW1 H.C Pradeep Kumar is the most important who stated that on 06.07.2010 at about 11 am, he under the leadership of inspector Vivek Tyagi proceeded to Birla Mandir and recovered the skin of the leopard. The next day WLI V.B. Dasan was called to the police station for identification of the skin

as well record its size. The evidence of all other police officers corroborates the evidence of PW1.

The evidence V.B. Dasan is to the effect that he was called to the police station and he identified the skin which measured 10x35 cm. On 7-7-2010 he received the record from the police and filed the complaint in the court having jurisdiction over the accused. He identified the case property in the court.

After pre- charge evidence, charge was framed against accused Naresh Kumar, Ashok Kumar and Nanda Kumar. The allegation was that they were found keeping in their possession and dealing in one baby leopard skin. They failed to show any valid license or document for keeping the said leopard skin. All accused accepted not guilty and claimed to be tried.

All the witnesses who deposed in pre-charge evidence were called for, for post-charge evidence. They adopted their testimony recorded earlier. The witnesses were cross examined by the defense counsel. After completion of the post charge evidence, statements of accused recorded under section 313 read with 281 of Cr. P.C. The accused denied all allegations and stated that they are falsely implicated in the case. They submitted that they do not want to lead any defense evidence. However in compliance of the orders of the learned Sessions Judge further statement of accused was recorded and all incriminating evidence with respect to their possession of leopard skin were put to them. Accused Nanda

Kumar also led defense evidence under section 315 of Cr. P.C he examined himself and two experts from Wildlife Institute Dr. S.P. Goel and C.P. Sharma

He said that he had been falsely implicated in a case of 2010. He was in the business of socks as a road side vendor in *Karole Bagh*. One car came and he was asked to get into the car he said initially he refused but later he gave in. He was driven to police station Lodhi Colony. He was not told for what reason was taken to the police station. He met his co-accused in the court. In the cross examination he said that he had not made any complaint to any authority.

The other two defense witnesses Viz. Dr. S.P. Goel and Chandra Prakash Sharma said they are experts in examinations of Wildlife items including trophies they described the different methods of identification of wild life including morphological examination, hair characteristic and DNA methods. They explained further morphological means commonly deployed for species identification that includes stripe patterns, block pattern, spots, colors, horns etc... The APP submitted to the Court that under Section 134 of the Evidence Act, number of witnesses who were examined should not declare and it is the quality of witnesses which should be considered

Sri Pawan Singh Rajawat, Addl. CMM (Spl. Acts), Central *Tis Hazari* Court Delhi who tried the case, framed the following points for determination

keeping in view the arguments and objections of either side.

Whether non joining of independent public witnesses have proved fatal to the prosecution. It was held that police witnesses are as trustworthy and credible as any independent witness. There is no principle of law that without corroboration their testimony cannot be relied upon

On the point of reliability of the testimony of police officers, unless any motive is established the evidence of official witnesses cannot be questioned.

The evidence of pw 5, a wildlife professional, can be relied upon as he is fairly experienced in dealing with wildlife matters and no further expert's evidence is needed.

The scope and meaning of Section 57 on presumption of onus of proof shifting to the accused is explained.

In the circumstances, it was held that the accused persons have contravened provisions of Sections 49 & 49 (B) punishable under section 51 of the Act. Accordingly all three accused persons are held guilty and are convicted for the offence under sections 49 & 49 (B) and sentenced to undergo imprisonment for two years and to pay a fine of Rs.5,000 each. The case property is confiscated under section 39. The arguments were held on 03.04.2018 and the judgment was pronounced on 11.04.2018

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K.B.R

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