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TRUMPET

PROJECT ELEPHANT DIVISION
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE 2020



Project Elephant Division & Elephant Cell

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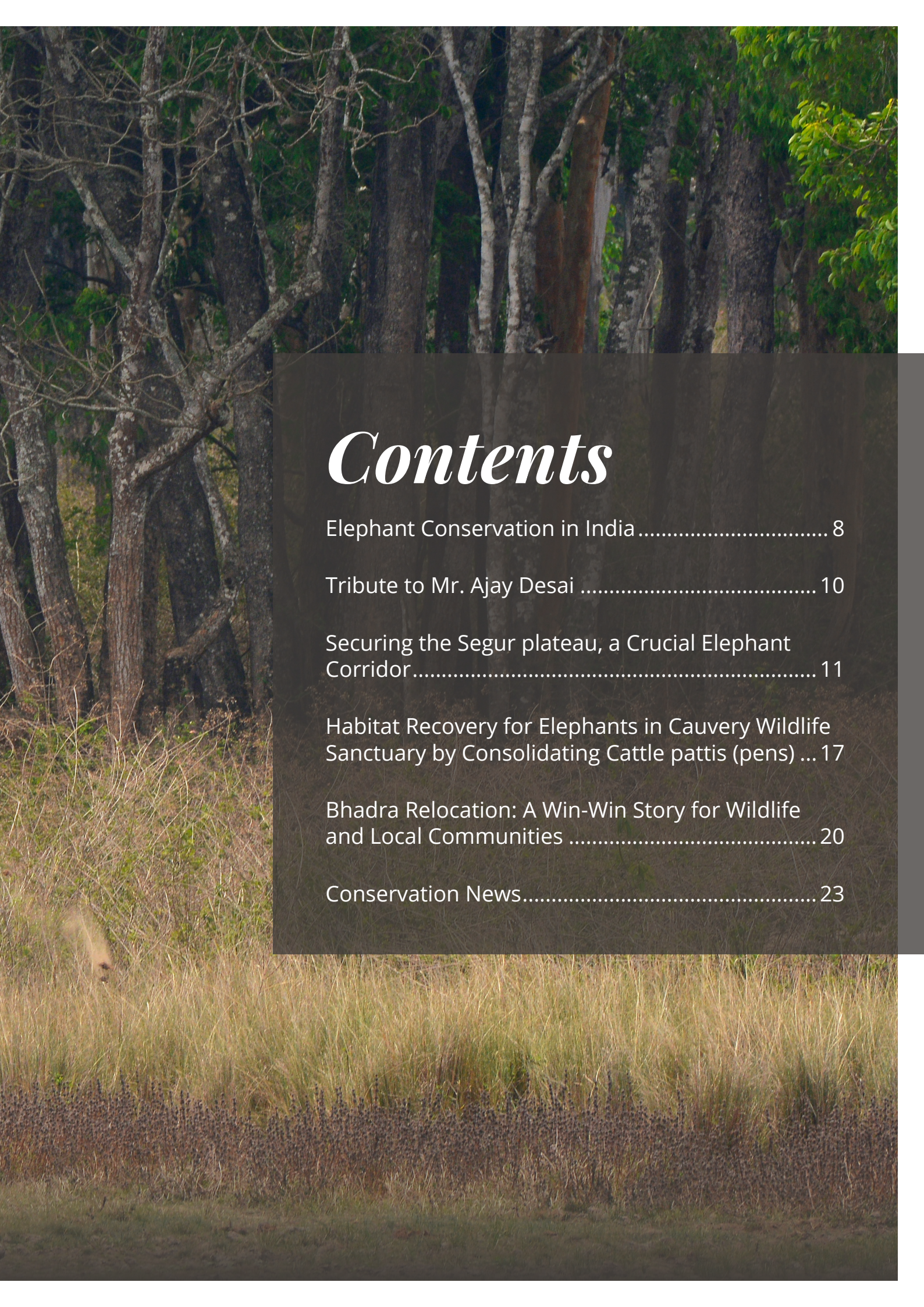
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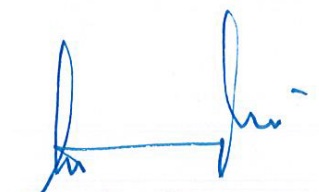
MESSAGE

Elephant is the key species for conserving the biodiversity of ecosystems. India, while supporting two-third of global elephant population is committed to lead the Asian countries in conserving the largest megaherbivore of the planet. At the most recent count in 2017, India has around 30,000 elephants in the wild distributed in 22 states. The distribution and number of elephants is increasing in the face of growing human population and increasing developmental activities. With the largest bastion of Asian elephant population, Project Elephant Division of Govt. of India, since 1992, has undertaken several initiatives for fostering elephant conservation in the country.

This Ministry has always looked upon conservationists, wildlife experts, forest officials for better understanding of the species ecology to make appropriate policy interventions for conservation and management of the species. However, the sudden demise of Mr. Ajai Desai, a member of the Gajah Task Force, Asian Elephant Specialist Group and the National Elephant Action Plans among others, has shaken the conservation community and left a void that is difficult to fill in.

This issue of "Trumpet" quarterly newsletter covers the protection and monitoring efforts to conserve elephants, securement of elephant corridors, habitat recovery and successful measures adopted to mitigate human elephant conflict. It also outlines the activities undertaken by the Elephant Cell in drafting of the National Elephant Action Plan, a visionary document outlining strategies and plans to conserve elephants in India.

I applaud the efforts of the team of Project Elephant Division and Elephant Cell in bringing out this issue and I hope that this will facilitate the dissemination of information of the ongoing activities on elephant conservation being undertaken across the country.



(Soumitra Dasgupta)



Elephant Conservation in India

By Brijendra Swaroop, IGF & Director, Project Elephant

The elephant is the largest terrestrial mammal that evolved nearly 60 million years ago. IUCN estimates that there are between 38,000- 51,000 wild Asian Elephants, as compared to more than 6,00,000 African Elephants. This makes the population of the Asian Elephant a mere 6-8% of their African counterparts. In India, the Asian elephant was once widely distributed throughout the country, including in states like Punjab and Gujarat. Although no census or estimates of the wild population exist, it is said that in the early 17th century the Moghul Emperor Jehangir had 40,000 captive elephants within the territories of the Mughal empire and Bengal.

Currently, elephants are distributed in four regions, in south, north, central and north-east India. It occurs in 22 of the 29 states in the country and is showing an increasing trend across its distributional range. Its population in 2012 was estimated to be in the range from 27,785 to 31,368, whereas in 2017 the population was estimated to be 29,964 (Table 1). The highest population of elephant is recorded in the South in Karnataka followed by Assam in the North-East. The habitat generalists, their habitat ranges from wet tropical evergreen forests to semi-arid thorn and scrub forests. However, highest densities of the elephant population are found in tropical deciduous forests. Elephants are 'mega-herbivores' that require vast tracts of forests, rich in food and water to survive.

of "Project Elephant" in 1992. This scheme was intended to preserve habitat and establish elephant corridors, address human-elephant conflict issues, monitor elephant population and improve the welfare and management of captive elephants. At present 30 Elephant Reserves have been established throughout the elephants' traditional range and covering a total area of 65,507.42 km².

The Asian Elephant has been given the highest level of protection in India by its inclusion in Schedule 1 of the Indian Wildlife (Protection) Act 1972. They are also included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In 2019, with the efforts put in by the Indian Government, the Indian elephants have now been included in the Appendix I of the Convention of Migratory Species (CMS).

Despite these conservation measures, the survival of the Asian Elephant continues to be threatened by fragmentation and degradation of natural habitat, poaching for ivory and human-elephant conflict. In the face of these challenges, the Indian Government is equally committed to conserve the species against all odds. Looking up at the need of the hour, this Ministry is now gearing up for the population estimation of the species for 2022 using sound scientific methods to recognise and take effective actions against the site specific threats that loom over the existence of the mega herbivore.

Concern for the threat to the elephant led to the formation



Table 1: Population of wild elephants as reported by States

REGION	STATE	ELEPHANT POPULATION					
		1993	1997	2002	2007	2012	2017
North-East	Arunachal Pradesh	2102	1800	1607	1690	890	1614
	Assam	5524	5312	5246	5281	5620	5719
	Meghalaya	2872	1840	1868	1811	1811*	1754
	Nagaland	178	158	145	152	212	446
	Mizoram	15	22	33	12	-	7
	Manipur	50	30	12	-	-	9
	Tripura	100	70	40	59	59	102
	West Bengal (North)	186	250	292	300-350	647	488
Total for North-East		11027	9482	9243	9305-9355	9239	10139
East	West Bengal (South)	14	26	36	25	#	194
	Jharkhand	550	618	772	624	688	679
	Odisha	1750	1800	1841	1862	1930	1976
	Chhattisgarh	-	-	-	122	247	247
	Bihar	-	-	-	-	-	25
	Madhya Pradesh	-	-	-	-	-	7
Total for East		2314	2444	2649	2633	2865	3128
North	Uttarakhand	828	1130	1582	1346	1346*	1839
	Uttar Pradesh	47	70	85	380	291	232
	Haryana	-	-	-	-	-	7
	Himachal Pradesh	-	-	-	-	-	7
Total for North		875	1200	1667	1726	1637	2085
South	Tamil Nadu	2307	2971	3052	3867	4015	2761
	Karnataka	5500	6088	5838	4035	5648-6488	6049
	Kerala	3500	3600	3850	6068	5942-6422	5706
	Andhra Pradesh	46	57	74	28	41	65
	Maharashtra	-	-	-	7	4	6
	A&N Nicobar Islands	-	-	-	-	-	25
Total for South		11353	12716	12814	14005	15650-16970	14612
GRAND TOTAL		25569	25842	26373	27669-27719	29391-30711	29964

* Meghalaya and Uttarakhand has not conducted elephant census after 2007. Therefore, the figure of 2007 has been maintained for 2012 as well.

The figure for North and South Bengals are combined.

Source: MoEF&CC



Tribute to Mr. Ajay Desai

(24th July 1957 – 20 November 2020)

Hailing from Bagalkot district of Karnataka, Mr. Ajay Desai completed his post graduate in Marine Biology from Karnataka University. Mr. Desai started his career with the Bombay Natural History Society (BNHS) as a researcher and went on to spend many years focusing on studying elephant herding and track formation across the Indian reserves of Mudumalai in Tamil Nadu. A wildlife conservationist and an elephant expert he worked extensively on the behaviour, ecology and human – elephant conflicts across India, Laos, Cambodia, Indonesia, Vietnam and Sri Lanka.

Lovingly known as the “Elephant man” of India, he spent decades in the research of species specific behaviour of Asiatic elephants. He was a pioneer in the study of elephant movements using radio collar focusing on studying wildlife conflicts with human habitations. Based on scientific research, he argued that deforestation and destruction of wildlife habitations were forcing elephants to come to villages and towns seeking food and water. He advocated a holistic approach towards conserving nature and wildlife, along with forest areas.

A was the member of the Gajah Task Force (2010), Member and Co Chair of the Asian Elephant Specialist Group of IUCN (2005-15), a two term member of the State Wildlife Board of Karnataka, part of Supreme Court constituted Committee on Sigur elephant corridor, member of the Karnataka High Court constituted elephant Task Force and the Technical Committee of the National Elephant Action Plan of MoEF&CC. A firm believer of holistic approach towards conserving nature and wildlife, he worked for wildlife conservation to his last breath. His significant contribution to wildlife conservation will always be missed.

Securing the Segur plateau, a Crucial Elephant Corridor

D. Boominathan, N. Mohanraj, Sanket Bhale, M. Santhanaraman and Ajay A Desai

Introduction

Out of India's total elephant population, as much as 44% is found in Southern region.¹ The Brahmagiri-Nilgiris-Eastern Ghats landscape in South India, spanning over 12000 km² is home to over 8,000 Asian elephants, this is the single largest population of Asian elephants in a contiguous habitat in the world. No other country, let alone a landscape, supports such a large population, making this landscape truly unique in the world. However, there is the threat of this large landscape fragmenting into smaller habitat patches (and sub-populations). Although several corridors have been identified in this landscape, the Segur and Kallar corridors are two key elephant corridors that connect major populations of elephants in this landscape. The Segur Corridor forms a crucial link between the Protected Area (PA) networks and associated Reserve Forests (RFs) on the eastern side and the western side of Elephant Range 7 (Nilgiris Eastern Ghats) (Fig.1). The Kallar corridor is a fragile link between Elephant Range 7 and Elephant Range 8 (South Nilgiris). This article focuses only on the Segur corridor, and not the Kallar corridor.

Humans have converted most of the natural habitats for their own use and in the process have rendered those natural spaces into small and isolated patches within a sea of human use areas. Such fragmentation not only reduces habitat size but it also breaks the landscape metapopulation into smaller and genetically less viable populations. Recent studies indicate that the minimum viable population (Nc) should be 1300⁺² and even as high as 5000³ adults to ensure long-term persistence

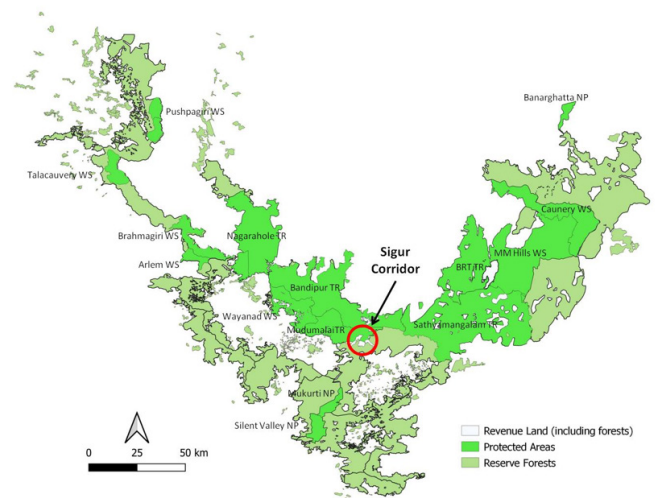


Figure 1. Map showing Segur Elephant Corridor in the Brahmagiri-Nilgiri Eastern Ghats landscape

for elephants. Probably the only population that meets these requirements is the Nilgiris-Eastern Ghats elephant population.

Fragmentation also leads to increased human-elephant conflict when their seasonal movement paths and access to seasonal ranges (resources) are cut off due to breaking of corridors.

Wildlife Corridors are indispensable for wide ranging animals like elephants, whose annual home ranges in excess of 600 km² have been recorded in studies using radio-collars (Bombay Natural History Society⁴ and WWF-

1 Synchronized elephant population estimation India, Project Elephant division, Ministry of Environment, Forest and Climate Change, Government of India (2017)

2 Brook, B. W., Traill, L. W. & Bradshaw, C. J. Minimum viable population sizes and global extinction risk are unrelated. *Ecol. Lett.* 9(4), 375–382 (2006)

3 Traill, L. W., Brook, B. W., Frankham, R. R. & Bradshaw, C. J. Pragmatic population viability targets in a rapidly changing world. *Biol. Conserv.* 143(1), 28–34 (2010)

4 Baskaran N., M. Balasubramanian, S. Swaminathan and A.A. Desai, 1995. Ranging behaviour of elephants and its implication for the management of Nilgiri Biosphere Reserve, India. In: *Proceedings of the International Seminar on the Conservation of the Asian Elephant*. Eds. Daniel, J.C. and H. Datye. 1995. Bombay Natural History Society, Bombay.

India). They are truly a landscape species; individual home ranges (clans and males) have stretched across all three states, covering multiple divisions.

Location and description

The Segur corridor is located on the eastern boundary of Mudumalai Tiger Reserve and provides connectivity for elephants to move between Mudumalai TR and Nilgiris North Forest Division. This Segur corridor is not just a transit route but it is also a foraging area. Hence, we see seasonal movement through the areas and daily movement within the area for extended periods for foraging and dispersal of young males through this area (Figure 2).

To the north of the Segur corridor is the Moyar Gorge which forms the eastern boundary between Mudumalai Tiger Reserve and Bandipur Tiger Reserve. This gorge is deep (300m) and steep and forms nearly 29km long east-west barrier which elephants cannot cross. On its eastern end the Moyar Gorge opens out into a gradually widening valley (Moyar Valley) into which elephants can get down using two main routes. This valley connects to the Sathyamangalam Tiger Reserve on the northeastern side and to Coimbatore Forest Division and Mannarkad Forest Division on the southwestern side (via the Kallar corridor). To the south are the steep slopes leading up to the Ooty

Plateau. Elephants by and large cannot negotiate these steep slopes as those turn to sheer cliffs as the elevation increases.

The Segur plateau receives about 600mm to 700mm of rainfall per annum. Being a rain shadow area, the vegetation comprises vast stretches of thorn forests and scrub jungle. This vegetation is also degraded by cattle grazing. However, the foothills and lower slopes of the mountains leading to the Ooty Plateau, have very good vegetation ranging from semi-evergreen to dry deciduous forest, due to better rainfall. Thus the best habitat for elephants is along the foothills and it gets poor as one progresses northwards due to reduced rain and rising anthropogenic pressures. Additionally, due to inter basin transfer of water for hydroelectric power generation, the two perennial rivers Segurhalla and Kedarhalla, have now become seasonal streams limiting water availability on the Segur Plateau. The foothill forests continue to have water in the form of rocky pools and greater moisture that is available there.

Free movement of elephants is hindered due to the north-south alignment of the villages in this area. The Moyar village lies at the edge of the Moyar Gorge and about 4km south is the Masinagudi village which is connected with the Singara Village at the foothills and that has penstock pipes running up to the Ooty Plateau. There is a water

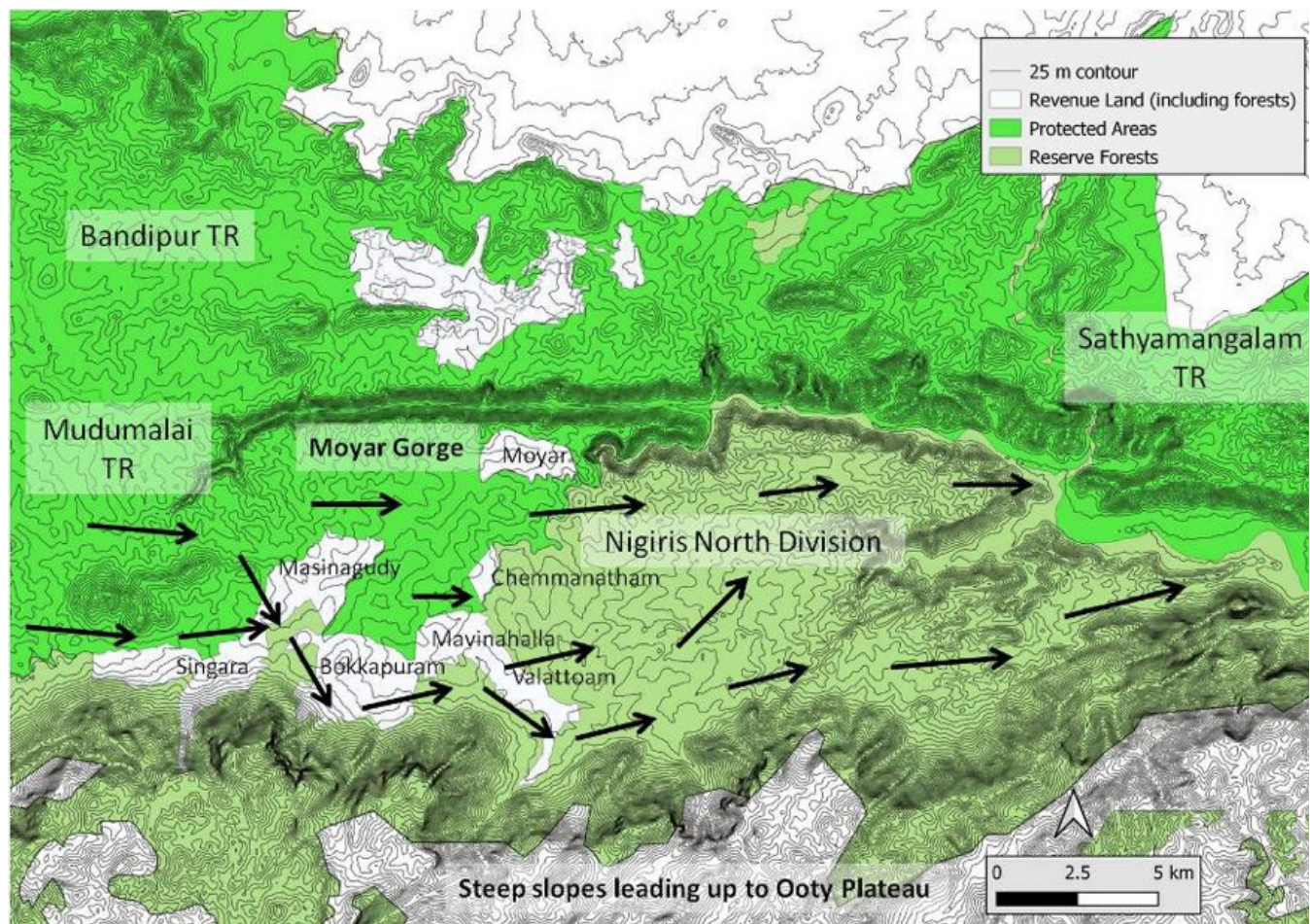


Figure 2: Segur corridor: Arrows show the movement paths of elephants through this corridor (movement is both ways). The area to the north of Moyar Gorge in Bandipur TR is also an east-west corridor for elephants in Bandipur but it mainly very dry thorn forest. Fewer elephants move through here.



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canal extending from Masinagudi to Moyar, and the Forest Department has ensured that this linear infrastructure does not become a barrier by not allowing concrete lining of the canal at all points where elephants traditionally cross it. However, the poorer habitat in this area results in only some elephant clans using it. In addition, the villages also stretch along the foothills from Singara to Bokkapuram, Mavinahalla and Vazhaithottam thus posing a challenge to elephants moving or foraging along the preferred foothills area.

History of elephant occurrence

Human population in this area was very sparse, throughout history. The British colonizers tried to establish agricultural communities in the late nineteenth century but failed. Even the labourers who were brought in to build the hydroelectric power plants in the early 1950s did not stay and moved away after the construction. It was only in the 1970s that human population started growing slowly and during 1990-2001 and beyond it increased significantly (see Figure 3 below). There were two reasons for this, first was the upgrading of the hydroelectric power plant in the early 1990s and the second was the growing tourism

industry. Both these ushered in rapid human population growth and development.

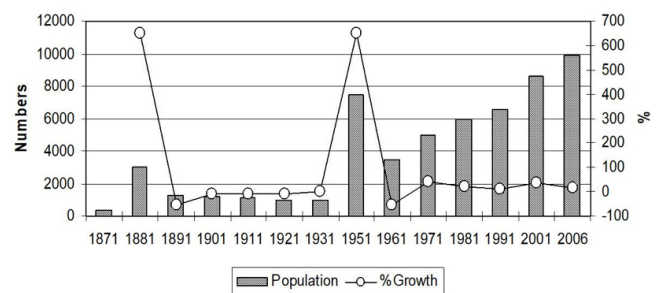


Figure 3. Human population in Segur plateau⁵

ERC Davidar conducted the first study in 1970s with the support of the Asian Elephant Specialist Group (AsESG) of the International Union for the Conservation of Nature (IUCN) Species Survival Commission (SSC). Its objective was to investigate the impediments to elephant movement in the Nilgiri Hills, in the Western Ghats of India. The work of securing the revenue lands were taken up by the Nilgiri Wildlife Association, who identified the revenue lands that has been highlighted by ERC Davidar's study.⁶

⁵ RESOURCE USE, CULTURE AND ECOLOGICAL CHANGE: A CASE STUDY OF THE NILGIRI HILLS OF SOUTHERN INDIA, A Thesis Submitted in the Faculty of Science BY R. PRABHAKAR

⁶ ERC Davidar 1972. Investigation of elephant migratory paths in the Nilgiri Hills, report given to BNHS and Forest Department (as cited in the expert committee report of Tamil Nadu Forest Department)

This was followed up through a study by the Bombay Natural History Society which published a paper on corridors based on ranging of individually identified elephants⁷ and a follow up study based on radio-collared elephants which also identified several wildlife corridors.⁸

This was followed with a number of studies carried out by various organizations and individual researchers which highlighted the degradation of the area due to over-grazing and fuel wood removal. S. Sankaramurthy, conducted a study on behalf of WWF India, in which the revenue lands and patta lands that were essential for the movement of elephants were identified.⁹

Wildlife in the corridor

The corridor with its vegetation ranging from semi-evergreen in the hill slopes to dry thorn forest and scrub has rich biodiversity. The corridor area is also home to carnivores like tigers, leopards, and dholes and omnivores like sloth bears. Most herbivores in the landscape use the corridor area. In addition to elephants, gaur, sambar,

chital, barking deer, four-horned antelope and wild pig are seen in the area. As the corridor area is at the junction of major vegetation types, particularly the thorn forest, it plays host of species which are not well represented in the main PA network, like hyena, jackal (now rare) and four-horned antelope. Loss of this corridor will adversely affect most species as factors that impact elephants will also impact other species using this area.

Development and damages to the corridor forests

The plateau was rapidly developing into a quick weekend getaway for people from adjoining urban centers. This boom in tourism resulted in many of the critical areas identified by Davidar and BNHS developing into tourism resorts after 1990. The major problem was the conversion of lands classified under the Tamil Nadu Preservation of Private Forest Act into resorts and holiday homes, and a vast majority of those were with electric fences. Under this Act conversion to non-forest use is not permitted. These

7 Desai, A.A. 1991. The home range of elephants and its implication for management of the Mudumalai Wildlife Sanctuary, Tamil Nadu. J. Bombay nat. Hist. Soc. 1991: 88 (2) 145 - 156

8 Baskaran N., M. Balasubramanian, S. Swaminathan and A.A. Desai, 1995. Ranging behaviour of elephants and its implication for the management of Nilgiri Biosphere Reserve, India. In: Proceedings of the International Seminar on the Conservation of the Asian Elephant. Eds. Daniel, J.C. and H. Datye. 1995. Bombay Natural History Society, Bombay.

9 Report of the expert committee formed in pursuance of the direction of the Hon'ble High Court in W.P.No. 10098/2008, 2762 & 2839 of 2009.





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developments are blocking free movement of wildlife. A total of 44 private resorts were identified in Segur plateau as having been developed on private forest land. The frequency of vehicular movement has also increased over the years. As a result, the free movement of elephants is affected. The study by ERC Davidar, indicated that various obstructions resulted in the elephants moving up in the hill reaching Sholur. The Forest Department has recorded some cases of elephant deaths due to falling off the steep slopes.

Legal intervention

Secretary of Nilgiris Wildlife and Environment Association had flagged the issue first and published an article about the Corridors of Elephants in Segur and the threats the landscape was facing. Thereafter, a Public interest litigation was filed in Supreme Court by A. Rangarajan in the year 1996 to remove the encroachments in the elephant corridors across the country and Nilgiris in particular.

'Elephant' G. Rajendran, Managing Trustee, In Defence of Environment and Animals, filed a writ petition in Madras High Court in 2008 to keep the corridor free of encroachments and disturbances for free movement of elephants and other animals.

An Expert Committee was constituted in 2009 as directed by the Hon'ble Madras High Court to investigate and

produce the report on the Segur corridor, under the chairmanship of Principal Chief Conservator of Forests and Chief Wildlife Warden, Tamil Nadu. The committee carried out a field assessment and gathered information by meeting experts, forest officials serving and retired, tribal community representatives and NGO representatives. The Committee submitted the report in 2009 with clear conclusion and recommendations.

The Hon'ble Court directed to publish the final map of the corridor in newspapers and invite for objections if any, from people living within the corridor. Between 2008 and 2010, a number of petitions were filed by resort owners and arguments and hearing were going on.

Government of Tamil Nadu accepted the report submitted by the Expert Committee and issued a Government Order (GO) declaring the area identified in the expert committee report as an Elephant Corridor and the Madras High Court in the year 2011 delivered its verdict by upholding the validity of the said GO.

Following this, the resort owners appealed in the Supreme Court of India against the said order of Madras High Court. However, the Hon'ble Supreme Court of India passed interim order directing to seal all the illegal resorts and to remove all electric and barbed wire fencing in Segur elephant Corridor. The main case is still pending in Supreme Court.



Documented Positive outcomes

- When in the course of hearing, a dispute arose as to whether the Bokkapuram foothills is a corridor or not as few land / resort owners claimed that the Bokkapuram village is not a corridor. To counter this claim, a relocation report of two Tuskers which were captured and released in Bandipur under the scientific supervision of WWF India was placed on record in the proceedings. The said report recorded the movement of one of these two Tuskers which moved through this area using the path of resident elephants as recorded by the radio collar fixed to that elephant. The animal was found passing through the corridors in Bokkapuram village, thus the argument that Bokkapuram is not a corridor was rejected by Court and its inclusion in Corridor was upheld.
- The Expert Committee also recommended handing over of the revenue lands in the corridor to the Forest Department apart from removal of barriers like electric fencing, banning of baiting animals for sighting by tourists, and to use of only LPG for cooking purposes.
- The Court has passed order stopping further development of resorts and action to be taken against illegal resorts and new constructions.

This work was a culmination of efforts of researchers, academic institutes, Forest Department, Revenue

Department, NGOs, legal experts and concerned individuals. It paves the way for such cooperative association, which are certainly needed in such large cases.

The Road ahead

The case of Segur elephant corridor sets a precedent for securing and conserving elephant corridors across the country. Though much breakthrough has been made towards conserving the ecologically sensitive area for the use of elephants, the corridor is not yet entirely free from impediments and securing it is still a work in progress. There is much more to be done for long-term and sustained conservation of the area.

Conservation efforts in the area have had positive outcomes which include a healthy tiger population in the Nilgiris North Division and the adjoining Mudumalai Tiger Reserve. Securing Segur in the long run will not only help elephants but large carnivores and their prey base as well.

As it is seen in the Segur corridor case, most elephant corridors across the country comprise reserve forests, Government revenue lands and private lands. Currently, there is no legislation to protect corridors for elephants. A comprehensive legislation to regulate land use pattern in terms of developmental activities and agricultural practices and bringing the forested revenue lands under the management of forest department in identified corridors would be a long term solution towards securing elephant corridors.

Habitat Recovery for Elephants in Cauvery Wildlife Sanctuary by Consolidating Cattle pattis (pens)

K. V. Vasanath Reddy, IFS

Important landscape for conservation

Cauvery Wildlife Sanctuary is one of the large Protected Areas in Karnataka, spread over an area of 1,027.51 sq. km. Once the land trudged by Kenneth Anderson after the marauding leopard of Sangam, then by the brigands like Veerappan until 2000s, the area is now in the safe hands of strong management. This forest was Veerappan's territory who had his operations in smuggling sandalwood, ivory and other forest produce. Cauvery Wildlife Sanctuary is well connected with Bannerghatta National Park to the Northeast, Malai Mahadeshwara Wildlife Sanctuary and BRT Tiger Reserve to the Southwest. It forms important part of the dry-deciduous forests of Karnataka and is also a part of Mysore Elephant Reserve. Shimsha, Arkavathy and Cauvery rivers flow through the Sanctuary. It is an important landscape for the conservation of tiger, co-predators, elephants and prey. It is an ideal habitat for endangered population of four horned antelope, endemic Grizzled Giant Squirrel, Mahsheer fish, Soft shelled turtles, Fishing eagles and Otters. The River Cauvery had been known for anglers of the world for its 'Mighty Mahseer' (*Barbus tor* sp). Records of over 100 pounds of fishes were once caught until the ban on angling. With over 260 species of birds, charmed by calls of resident Grey-headed fish eagles, hoots of Brown fish owls, squeals of River terns and flocks of cormorants, black storks, Kingfishers, waders and excellent diversity of birds of prey, Cauvery WLS is a paradise for birders. A Brown-headed Gull or even the most spectacular of the Bee-eaters, the European Bee-eater are some of the notable records from Cauvery Wildlife Sanctuary.



Inspection by Vasanth Reddy IFS

Cattle pens (pattis) had negative impact on the wildlife

In 2012, the major challenge in Cauvery Wildlife Sanctuary was the habitat degradation because of the presence of cattle pens (Doddi in Kannada). There were 22-25 such pens which had population of cattle ranging from 300 to 500 cattle in each of the pens. Cattle used to stay in the forests all through the year, grazing and browsing in the jungle, degrading the entire ecosystem. The major purpose of such pens is commercial and they were reared for meat, which had demand in adjacent areas. Many such pens were located along the Cauvery River which affected the movement of elephants to gain access to water. This became a severe problem during summer months when river was the only source of water. Livestock competed with wild herbivores such as the elephant for food, water and space. Livestock also potentially transmitted diseases to elephants including anthrax, foot and mouth, hemorrhagic septicemia, etc. High livestock numbers also led to overgrazing, erosion and impoverishment of the soil leading to proliferation of unpalatable species. The damaged ecosystem provided less food for elephants. The competition for resources (food and water) is amplified in landscapes such as Cauvery and MM Hills Wildlife Sanctuaries. This landscape acts as a connecting link between Western and Eastern Ghats. Here due to environmental conditions resources are naturally scarce. Hence competition was severe during the prolonged dry periods in the landscape. Presence of livestock herders also led to human-elephant conflict as the herders were also under the risk of injury and death from elephants. The elephants used to avoid such areas and move to adjacent farmlands for feeding which led to severe human – elephant conflict in the fringe villages. Scientific studies have also shown that livestock grazing encourages invasive floral species such as Lantana, Parthenium and others. Studies by M D Madhusudan in Bandipur Tiger Reserve also demonstrated that elephants avoided areas that were grazed by livestock depicting temporary loss of grazing grounds for elephants. Many a times livestock herders also set forest fires to encourage new flush of grass for livestock grazing. Such fires had severe long-term impact on elephant habitat. Some livestock herders were also known to poach wildlife. Also they used to poison the kill when carnivores attacked the livestock.

More cattle in the Sanctuary than wildlife

There was a situation where there were more cattle inside the Sanctuary than wildlife. Then the decision was taken by the Forest authorities to remove such cattle pens. There was much opposition and protest to such action. Field staff had number of meetings with local people, politicians and tried to convince people. But all efforts were in vain. Finally, all the 25 cattle pens were removed



Adult elephant in a temporary water hole in Cauvery Wildlife Sanctuary



Removal of cattle pattis and burning the debris



Degraded forest area because of cattle pens



Elephants in Cauvery Wildlife Sanctuary



Desilting of water hole



Germination of bamboo in the degraded cattle pen areas

forcefully from the Cauvery-MM hills landscape in the year 2012-14. Cattle pens in Kurimande Doddi, Indiganatta Area, Panchlane, Halambadi, Kurimande doddi, Datkada doddi, Bannane doddi, Konanagundi doddi, Kolkote doddi etc. were forcefully removed. Field officers such as Sri. Mahammad Mansur, Sri. Madhusudan, Sri. Lokesh, Sri. Prakash, all RFOs and Sri. Nagaraj ACF and other field staff of the Sanctuary succeeded in removing these cattle pens against all odds.

Elephant protection and habitat improvement activities taken up

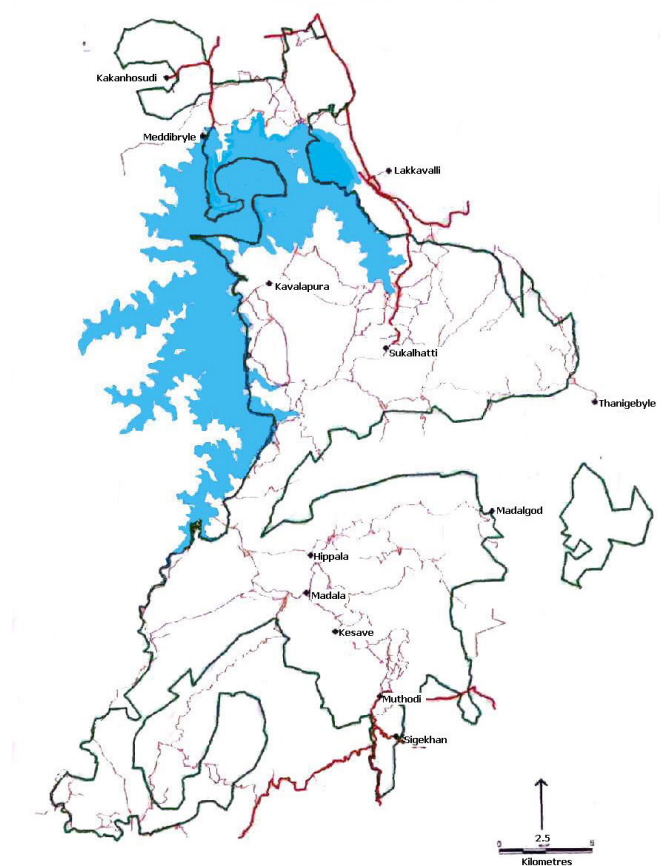
In the meantime, the State Government reorganised the Sanctuary by adding additional forest areas from adjacent Kollegal, Mandya and Ramanagara territorial Divisions. Additional field staff with extended forest areas strengthened the protection. These degraded areas were managed on watershed basis to facilitate the growth of vegetation. Soil and moisture conservation measures were taken up. Contour trenches were made and bamboo and grass seeds were sown to increase the availability of green fodder to herbivores including elephants. Habitat improvement works such as temporary ponds, desilting of water tanks, broadcasting of local grass seeds were taken up. In addition, efforts were made to mitigate man – animal conflict by taking multi-pronged approach of solar fencing and elephant proof trench. 35 anti-poaching camps were established in the Sanctuary. Local people and old poachers were involved in anti-poaching camps as protection watchers. Local poachers and the interstate poachers operating from Tamil Nadu were arrested and action was taken to establish anti-poaching camps in sensitive areas. The elephants were poached for tusks even after the death of dreaded forest brigand Veerappan. Information network was strengthened and action was initiated in all such wildlife poaching cases. Bamboo and local grasses and shrubs established in these areas that helped the elephant population. In general, vegetation of the landscape improved over the years, followed by herbivores and then carnivores moved to the Sanctuary from the adjacent Protected Areas. Presence of 520 elephants was observed during the annual estimation of elephant population in 2014-15. Removal of cattle pens, wildlife protection from poachers, fire protection, habitat improvement, mitigation of man-animal conflict over the years led to high density of elephants and other wild animals in the Sanctuary. The Sanctuary is home for large population of elephants. Now it provides the contiguous landscape for large mammals in the forests of Karnataka and Tamilnadu.

Bhadra Relocation: A Win-Win Story for Wildlife and Local Communities

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Human–elephant conflict can impose substantial costs to local communities living alongside elephant habitats. The costs include loss of crops, property, lives and livelihoods. Additionally, there are hidden costs like living in constant fear and loss of opportunities. Addressing human–elephant conflict is thus essential to win the support of local communities for elephant conservation. Many remote villages that lie within elephant habitat as enclaves support high levels of conflict. Most of these villages have been established in river valleys and low-lying areas that are conducive for agriculture. Ironically, these low-lying areas with adequate drainage are important for elephants and other large herbivores too and therefore, conflicts are unavoidable. Due to recurrent conflicts with wildlife, remoteness and harsh living conditions, many communities living inside elephant and tiger habitats find resettlement an attractive option. Such strategic resettlement can immensely benefit elephants as well as local communities. Relocation of villages from Bhadra tiger reserve in Karnataka is hailed as a huge success by village communities themselves.

Nevertheless, relocation of people from any place is a very sensitive and emotional process. Especially when the whole village is being relocated. Bhadra Relocation is no exception. Bhadra lies in the coffee district of Chickmagalur district in the Western Ghats. During 1974, 492 km² Bhadra Wildlife Sanctuary was notified in Chikmagalur district. With the construction of Bhadra dam at Lakkavalli across River Bhadra, the villages like Hebbe, Madla and Hipla were cut off from the towns. Considering the woes of local communities, the Government of Karnataka mooted the plan to resettle villages outside the reserve. During the year 1996, the forest department and district authorities surveyed the villages and prepared a basic document including all the land-holding details and the budget required for resettlement.



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The relocation involves a two-step process where one's land is acquired first and the household is resettled in a different site with all basic facilities. Revenue department insisted that one-fourth of the acquisition cost to be deposited before initiating the process of acquisition as per the land acquisition Act. An agreement was made between Government of India and the Karnataka



Government, wherein, the centre would release the cost of acquisition and the state would bear rehabilitation cost. Accordingly, the centre released an amount of Rs. 1.68 crores, which went to state exchequer. I took charge of Bhadra Wildlife Division during the year 1998, and worked earnestly and persistently to get the funds transferred to District Commissioner, Chikmagalur to initiate the process of acquisition. Consequently, Rs. 1.68 crores from Govt. of India and Rs. 50.0 lakhs from the State Govt. was deposited to District Commissioner, Chickmagalur on Mach 31st 1999, following which a notification was issued for acquisition of the lands of Hebhe and Madla Villages.

Relocation is a process involving human lives and their sentiments. Therefore, the process needs to be dealt with human touch. More than what we give, how we give determines the success of the project. One must understand that we cannot compensate for the emotional attachment they have with their place where they have

seen their forefathers life and their memories. However, it is important to make people aware of the greater livelihood benefits that relocation could accrue. After initiating the process of acquisition, local communities were involved to finalise rehabilitation package, which was very generous. I followed it up closely with the government and with support from senior officers of the Forest Department, we got the rehabilitation package approved by High Power Committee in March, 2001. We understood that there was some level of apprehension among villages towards relocation, fearing they will be abandoned by the government. We allayed their fears by being very transparent and genuine.

Now that Relocation package was in place and the people were ready to move, it was important to expedite the implementation of the package. Normally the acquisition amount paid to the families through the Govt., treasuries could result in delays. To avoid this, the District





Commissioner instructed the land acquisition officer (Asst-Commissioner) to disburse the amount of acquisition through crossed cheques to the beneficiaries. Alongside, the lands identified for Rehabilitation was surveyed and a comprehensive plan was made for accommodating all the families. The plots were distributed to all the families through lottery system in a transparent manner. The identification of the families living inside the Bhadra Tiger Reserve was done with the help of a local NGO, and then it was discussed with all the villagers openly. The implementation of the project was done on a war footing despite facing some degree of bureaucratic hurdles. There were many lessons to learn from the Bhadra relocation experience:

1. We should have human touch in the planning and execution
2. Positive attitude and perseverance are crucial for successful implementation
3. Team work is the key to achieve success. Successful village relocation process involves coordination with different Govt. departments (state and central) and other stakeholders. Clear communication, proper documentation and personal involvement are essential qualities for those involved in the process.
4. We should go the extra mile in helping the families. Since not everything can be put down in rules, there will be situations, where you have to think differently and help them.
5. We should not unduly bother about who gets the credit for the success of the project. After all, relocation process is a team work.
6. At every stage transparency needs to be maintained. All the families received their compensation amount to the tune of Rs. 50 lakhs without any hassles at their door step. Even the rehabilitation benefits were given at their door step with honour, compassion and dignity. This has really helped maintaining clean image to the project.
7. It is important to try and dovetail other facilities available from the government to downtrodden families in a more constructive way. We were able to build 203 houses to landless families in a span of 3 months.
8. Helping farmers with the local farming techniques and other strategies by bringing in experts in those fields can increase the confidence of resettled families to start their new lives in a new place.
9. Lastly, we need dedicated officers and staff to implement these kind of projects. We need to work beyond the call of our duty to make the project a success.

The Bhadra relocation project has been a great teacher for me personally. It has taught me to look at people living in the forests with empathy. It has totally transformed my thinking about conservation. Conservation efforts without involving the people living in those forests is doomed to fail miserably. It has reinforced in me the confidence that anything which we want to implement is possible, provided we take the effort to listen to the problems of local people and try to solve them.



Conservation News

National Elephant Action Plan

Elephant Cell of Project Elephant Division has embarked upon the preparation of the National Elephant Action Plan for an effective planning towards improved management and conservation of our National Heritage Animal. The Action Plan will have a clear vision and goal, objectives, strategy, action plan, timeline and also indicate the resources required to implement the proposed activities and possible agencies. The National Elephant Action Plan will act as guiding and planning document for India and help provide a long term road map for planning the conservation action and help generate resources for implementing the proposed actions.

To kick start the process, a Technical Committee has been constituted by MoEF&CC to draft the Action Plan. Seeking suggestions and inputs from various stakeholders, four regional consultative workshops were conducted in September, 2020. The Drafting Committee is currently drafting the Action based on the feedbacks received in the regional consultations.

Trans-Boundary Conservation of Elephants between India and Bangladesh

Following the three dialogues between India and Bangladesh Forest Departments for trans-boundary elephant conservation elephants both in India and Bangladesh, the Cabinet of both the countries agreed to the Protocol on "Transboundary Conservation of Elephants between India and Bangladesh". The Protocol signed by the representatives of both the countries on 17th December, 2020 by Mr. Ziaul Hasan NDC, Secretary, Ministry of Environment, Forests and Climate Change, Bangladesh and Mr. Vikram Kumar Doraiswamy, Indian High Commissioner to Bangladesh on behalf of their respective countries. The protocol was part of the total of seven agreements / memoranda of understanding / protocols that were signed on the occasion of the Virtual Summit held at the prime ministerial level of Bangladesh and India. This protocol aims to further strengthen the fraternal ties and is a road for future collaboration to facilitate the movement of elephants and conserve the transboundary habitat of elephants across the borders.





