Human Wildlife Conflict

Need for Calm Coexistence

INTRODUCTION

Conflicts between the human and wildlife have occurred since the dawn of humanity. They occur in all continents, in developed as well as developing countries, however the problems vary according to the particular environment and people's way of life. Human and wildlife conflict is the most deliberated topic in the recent times. Man and animals are in constant competition with each other for their survival in this environment. Due to the rapid increase in urbanization, there has been drastic depletion in the forest and grass land cover with diminishing natural resources. With expanding human population and change in land use, human – animal conflict has emerged as the major crisis point particularly in the vicinity of fragmented forests.

Continuous growth of human activities in the corridors of the forest, has posed a serious threat to the survival of many wild animals. The damage and destruction caused by a variety of animals to human property and sometimes to human life is a real and significant danger to many human communities. With the animals often being killed, captured, or otherwise harmed in retaliation, these conflicts have become one of the main threats to the continued survival of wild species.

The process of climate change is likely to exacerbate the existing loss of wildlife habitat , for instance, climate change may worsen the already persisting problem of droughts and floods. Climate Change is likely to alter the location and nature of geographical environment , thus forcing the wildlife to migrate to new areas as a way of adapting to the changes. As there are limited natural places left for wildlife to move to, this is likely to bring wildlife into more densely populated human areas and add on to existing human wildlife conflict.

Leopard attack in India, while trying to capture

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HUMAN WILDLIFE CONFLICT – ISSUES

Typology in Human Wildlife Conflicts

1. Damage of crops

Incidents of crop damage are of the most prevalent manifestation for human wildlife conflict across the world. The occurrence and frequency of crop raid by the wild animal is dependent upon a multitude of conditions such as availability, variability and type of food sources in the area, the level of human activity on a farm, and the type and maturation time of crops as compared to natural food sources. Wild animals that damage crops may also injure or kill the farm worker in retaliation. A wide variety of animals are found to be on conflict with farming activities in Karnataka. These include wide variety of birds, rodents, wild boars, bears and mainly elephants. Elephants can destroy a whole field in a single night raid. Most peasant farmers are unable to deal with the problem of elephant damage themselves. Adult male elephants are more habitual raiders than the female led herds. Certain male elephants showed a strategy of a seasonal movement that aimed at spending considerable time in the vicinity of cultivation. Every season on an average of 4 - 7% of crops are lost by the farmers residing within 500m of the protected areas, to the rampage caused by the wild animals.

Elephant Rampage in Banana, coconut farm and the aftermath

2. Livestock Depredation

Another adverse effect of the human-wildlife conflict is the killing of domestic animals by predators. The number and type of domestic animals killed by wildlife varies according to the species, the time of year, and the availability of natural prey. In places where pastoralism remains the main source of livelihood for many people, attacks on livestock is a major concern. On a national level the losses are hardly significant, but for the individual stock owner, they can be catastrophic. For a small-scale herder, losses to wildlife can mean the difference between economic independence and dire poverty. In India, interactions between the humans and the large predators are increasing as the ever increasing demand for development is resulting in occupation of forest land. Also due to demographic pressure rural people are progressively moving into the wild lands. Pastoralists are gaining access to the protected lands and villagers are farming right up to the boundaries of National Parks/ Sanctuaries containing large predators, thereby increasing the possibility of carnivore attack on the livestock and people.

Wild animals attack on livestock

3. Human Death and injuries:

Human death and injuries, although less common than crop damage, are the most severe manifestation of human – wildlife conflict. Large mammalian carnivores are responsible for numerous fatal attacks on humans and livestock. Attacks on large herbivores like elephants, Rhino also results in unfortunate loss of human life every year. Wild animals rarely deliberately attack humans since they have a natural tendency to avoid interactions with humans. In most cases deaths occur accidently while people are protecting their crops against raiding animals (usually at night); or when people accidentally come into close contact with the animals, especially on paths near water at night; or when people encounter injured animals whose normal sense of caution is impaired.

Wild animals usually tend to attack for the following reasons

- Only when they feel threatened.
- Most wild animals defend their offspring when they sense any trouble to their young ones they strike aggressively.
- When somebody intrudes into their territory in forest areas accidently or unknowingly
- When wild animals are old, sick or injured and are unable to hunt in forest.
- When an animal is caught by a surprise or otherwise frightened, their basic instinct is to attack.

4. Road kills

Highways passing through wildlife reserves, national parks and sanctuaries have adverse impact on wildlife and their habitats. These roads have been identified as the source of disturbance to the wildlife species directly (road kills) and indirectly (noise and disturbance). Road kills are significantly higher on highway stretches along rivers than those without water bodies nearby.

Wild animals killed in road accidents

5. Poaching

Poaching is nothing but unauthorized trade of wild flora and fauna. Poaching is a big business run by sophisticated, well organized and most dangerous international networks; wildlife, animal parts are trafficked much like illegal drugs and arms.

As per the wildlife (Protection) Act 1972, Poaching is a crime punishable up to 7yeasrs of rigorous imprisonment. Tigers, elephants and rhinos are particularly vulnerable. The problem is that poaching is a lucrative business. The insatiable demand for ivory has led to the annihilation of tuskers in their prime and as a result the ratio of tuskers and females has fallen to an alarming low. Similarly tigers are hunted to elimination for their skin, bones, teeth and claws which are highly valued for their use in the illegitimate market.

In India we have tradition of strong conservation laws such as the wild-

life Protection Act 1972 which was further amended in 2003 and 2006.Due to stringent enforcement of these laws in most of India the incident of poaching are under control. However intentional or unintentional hunting due to electrocution of wild animals in conflict zone continues to be a major threat.

6. Transmit diseases or disease causing parasites

Serious diseases are known to be transmitted by wildlife to domestic livestock and possibly also to humans (i.e. rabies). Scavengers and predators, such as wild dogs, jackals, lions and vultures, also play a role in disseminating pathogens by opening up, dismembering and dispersing parts of infected carcasses. Also foraging by domestic cattle in wildlife habitats results in transmission of diseases such as foot and mouth disease

WHY HUMAN WILDLIFE CONFLICT HAPPEN

The main cause of human wildlife conflict worldwide is the competition between growing human populations and wildlife for the same declining living spaces and resources. As a consequence of the increasing demand for land, food production, energy and raw materials there has been transformation in the forest ecosystems into agrarian areas and urban build up, which has led to dramatic decrease in the wildlife habitats

Certain factors contribute to the modifications of the wildlife habitats as desired below:

- **Increased fragmentation, increasing conflicts:**

The gradual loss of habitats has led to increasing conflict between the humans and wildlife. As wildlife range has become more and more fragmented and wildlife is confined into smaller pockets of suitable habitat, humans and wildlife are increasingly coming into contact and in conflict with each other. Conflicts are particularly common in reserve buffer zones where healthy wildlife populations stray from the protected area into the adjacent cultivated fields or urban dwellings.

- **Impact of human activities:**

Human activities such as animal husbandry, agriculture, development of infrastructure, tourism has contributed to dramatically modify wildlife habitats either directly or indirectly. With increase in geographical extensions of human activities, especially animal husbandry and agriculture it has become common for livestock and wild ungulates to share the same grazing fields. Also in recent years the successful recovery of the declining or near extinct species through wildlife management and protection from poaching and overexploitation has created new conflicts. Effective protection and habitat management with in the national parks has increased the population of wild animals which has resulted in straying out of the park boundaries into the local villages in search of food, water and space.

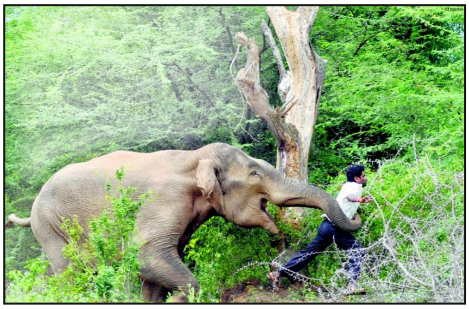
- **Natural factors:**

Droughts, bush fires, climatic changes and other unpredictable natural hazards also contributes to the decrease in suitable wildlife habitat and therefore affect the occurrence and extent of human -wildlife conflicts. Similarly, the seasonal modification of habitats due to rainfall can also have an impact on human-wildlife conflict. One of the

main consequences of the loss of habitats is the decrease in natural resources available for wildlife. The destruction of natural vegetation around protected areas and in some cases the total disappearance of buffer zones force herbivore species to feed in cultivated fields. This phenomenon is on the increase because the growth rate of cultivated areas is high at the periphery of protected areas. The decline in the numbers of natural prey is one of the major reasons why carnivores shift their diets to livestock which are easier to capture and have limited possibilities of escape.

Consequences for Humans

The aftermaths of the human-wildlife conflict are more serious in the tropics and in developing countries where livestock holdings and agriculture are an important part of rural people's livelihoods and incomes. In these regions, local people with a low standard of living are particularly at risk as they are agro-pastoralists who depend exclusively on production of livestock and income from their land.



Injuries to people mostly occur as a result of chance encounters with elephants, wild boars, tigers and leopards, usually along paths between dwellings and a water source in forest areas and also when these wild animals stray out of the park boundaries in search of food. Most of the encounters results in permanent injuries and in some cases death of humans. The dramatic consequences of these attacks go well beyond the unfortunate victim, for they have a repercussion on the whole community. The death of a family member caused by a wild animal is a traumatic experience. For a poor peasant family in a developing country, the death or injury of the bread-winner can mean the difference between a secure life for all and one of destitution where simple day-to-day survival becomes a priority. The elephant is one of the wild species that can jeopardize the livelihoods of the entire families by causing substantial damage to crops. Elephant raids can be a lot more dramatic when compared to other species which causes more insidious losses. Likewise, the loss of a family's small herd of cattle to predators or carnivores can effectively destroy that family's wealth and way of life. For rural populations, domestic animals are not only their main resource through production of manure, milk, meat, and live sales, but are also their only source of wealth. Wild animals destroying crops and large felines killing numerous domestic animals can devastate the household's food security among the rural populations.

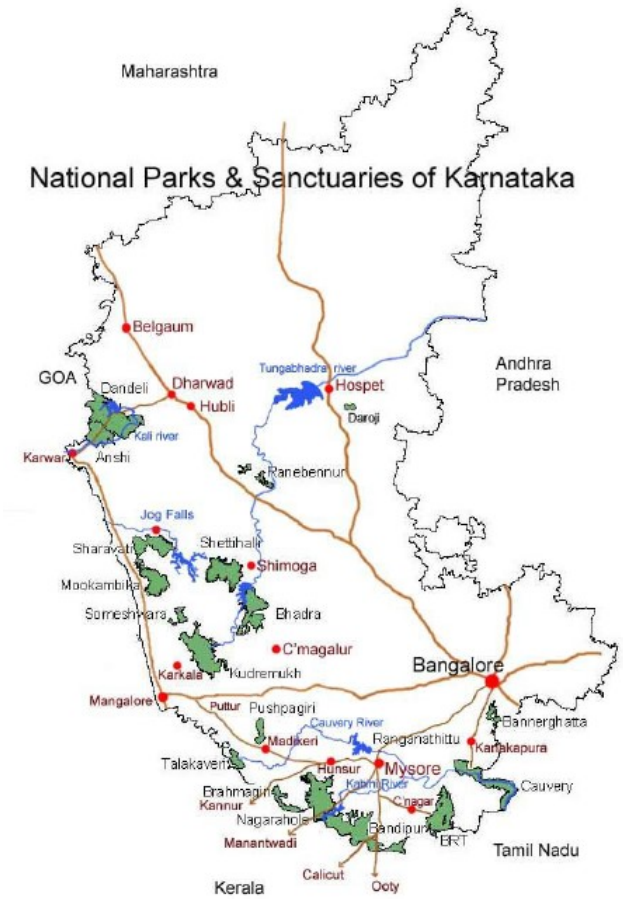
Consequences for Wildlife

The killing of wild animals in retaliation for incidents of human-wildlife conflict is a common reaction, even though the identification of the real culprit is seldom possible. This is particularly true for predators, but also for other species. Several species of larger carnivore such as tiger and leopards have been eliminated from a large part of their home ranges because of human wildlife conflict. In the present day illegal persecutions of predators, including poisoning, shooting and trapping is the greatest threat to the wildlife.

Human-wildlife conflict also has several indirect consequences. The transmission of diseases from domestic animals to wildlife, competition over grazing land, habitat fragmentation or pollution; all pose threats to the survival of wildlife populations or even the species as a whole.

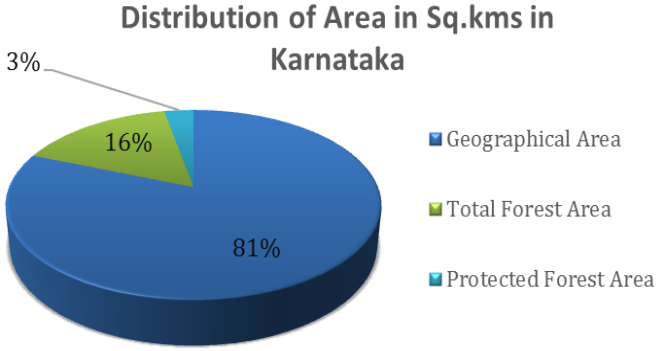
When a wild animal raids the agriculture land or kills or injures a human, the human response is to kill or remove not just the individual animal responsible, but the whole local population. This not only affects the population viability of some of the endangered species but also has a broader environmental impact on the ecosystem equilibrium and bio diversity preservation.

HUMAN WILDLIFE CONFLICT IN KARNATAKA



ABOUT KARNATAKA

The state of Karnataka has a rich diversity of flora and fauna. Karnataka has a geographical area of 191,791km^2 . It has a recorded forest area of 38720 km^2 which constitutes 20.19% of the total geographical area of the state. These forests support 25% of the elephant population and 15% of the tiger population of India. Karnataka has more tigers than any other state in India. Many regions of Karnataka are still unexplored and new species of flora and fauna are still found. The Western Ghats in the western re-



gion of Karnataka are a biodiversity hotspot.

Karnataka has 5 National Parks and 29 wildlife sanctuaries covering an area of 2,472.18km^2 and 5360.508km^2 respectively. It also has 12 conservator Reserve of area 624.8018km^2 and a community reserve of area 3.12km^2 . Thus a total of 10,153.949km^2 area constituting 3.31% of the states geographical area is the protected areas network.

Source : http://www.aranya.gov.in)

National Parks in Karnataka			
	Particulars	***Year of Notification***	***Total Area***
1	*Anshi NP*	*1975*	*250*
2	*Bandipur NP*	*1974*	*874.2*
3	*Bannerghatta NP*	*1974*	*104.27*
4	*Kudremukh NP*	*1987*	*600.32*
5	*Rajiv Gandhi (Nagarahole) NP*	*1983*	*643.39*
	Total		***2472.18***

Conservator Reserve in Karnataka			
	Particulars	***Year of Notification***	***Total Area***
1	*Bankapur Peacock Conservation Reserve (Bird)*	*2006*	*0.56*
2	*Jayamangali Black Buck Reserve*	*2007*	*3.23*
3	*Basur Amruth Mahal Kaval Conservation Reserve*	*2011*	*7.36*
4	*Hornbill Conservation Reserve*	*2011*	*52.50*
5	*Aghanashini Conservation Reserve*	*2011*	*299.52*
6	*Bedthi Coservation Reserve*	*2011*	*57.30*
7	*Shalmala Riparian Eco-system Conservation Reserve*	*2012*	*4.890*
8	*Thungabhdra Otter Conservation Reserve*	*2015*	*20.00*
9	*Puttenahalli Lake Birds Conservation Reserve*	*2015*	*0.15*
10	*Magadi Kere Conservation Reserve*	*2015*	*0.540*
11	*Kappathagudda Conservation Reserve*	*2015*	*178.72*
12	*Melapura Bee Eater Bird Conservation Reserve*	*2015*	*0.0318*
	Total		*624.8018*
Community Reserve			
1	*Kokkare Bellur Community Reserve (Bird)*	*2007*	*3.12*
	Total		*3.12*

Source : Karnataka Forest Department

Wildlife Sanctuary in Karnataka			
	Particulars	**Year of Notification**	**Total Area**
1	Adichunchunagiri WLS	1981	0.84
2	Arabithittu WLS	1985	13.5
3	Attiveri WLS	1994	2.22
4	Bhadra WLS	1974	492.46
5	Bhimgad WLS	2010	131.671
6	Biligiri Rangaswamy Temple (B.R.T.) WLS	1974	539.52
7	Brahmagiri WLS	1974	181.29
8	Cauvery WLS	1987	510.52
9	Dandeli WLS	1975	475.01
10	Daroji Bear WLS	1994	55.87
11	Ghataprabha Bird WLS	1974	29.79
12	Gudavi WLS	1989	0.73
13	Melkote Temple WLS	1974	49.82
14	Mookambika WLS	1974	247
15	Nugu WLS	1974	30.32
16	Pushpagiri WLS	1987	102.96
17	Ranebennur Black Buck WLS	1974	119
18	Ranganathittu Bird WLS	1940	0.67
19	Sharavathi Valley WLS	1974	431.23
20	Shettihalli WLS	1974	395.6
21	Someshwara WLS	1974	88.4
22	Talakaveri WLS	1987	105.01
23	Rangayyanadurga WLS	2011	77.23
24	Chincholi WLS	2011	134.88
25	Ramadevara Betta Vulture Sanctuary	2012	3.46
26	Malai Mahadeshwara WLS	2013	906.187
27	Gudekote Sloth Bear Sanctuary	2013	38.480
28	Jogimatti WLS.	2015	100.480
29	Yadahalli Chinkara WLS	2015	96.360
	Total		**5360.508**

ELEPHANT CONFLICT IN KARNATAKA

Elephant attack in Mysore, Karnataka

Karnataka has the distinction of harbouring the largest population of the Asian elephant (Elephas maximus) in India. Karnataka harbours about 5,300-6,200 wild elephants over an area of 14,500 sq. km, according to the 2010 census, that is about one-fifth of the elephant population of the country. This population is almost entirely concentrated in the protected and reserve forests of southern part of the State, within the Mysore Elephant Reserve spread over 6,463 sq. km. The elephant is distributed over the Eastern and the Western Ghats with the southern region of the state of Karnataka holding the maximum numbers at relatively high density. Presently, elephants are found in at least three dis junct populations, a small one (about 50+) in the north of the state distributed thinly in the Belgaum and Uttara Kannada districts and other forests adjoining Goa and Maharashtra, a population of about 300 elephants in the Malenad plateau (primarily Bhadra WLS and adjoining areas) in Shimoga district, and a larger one (numbering several thousand) across Chikmagalur–Kodagu–Mysore plateaus eastward through the Eastern Ghats up to Bannerghatta National Park near Bengaluru city.

Karnataka state has presently one notified Project Elephant Reserve, spread over 6463 km2, termed as Mysore Elephant Reserve (MER) that comprises 15 Forest Divisions from Bhadra in the Malenad plateau to Bandipur in the south, and from Chamarajanagar to Bannerghatta along the Eastern Ghats. The Mysore Elephant Reserve holds over 98% of the wild elephant population of the state. There are four elephant-bearing forest divisions on the south of Bhadra (Koppa, Kudremukha, Chikmagalur and Mangalore) along the Western Ghats that are not part of the MER.

Karnataka faces a very serious problem of elephant-human conflicts, relatively speaking, and

Sl.No	Year of Estimation	Estimated Elephant Population
1	1983	3,579
2	1989	4,420
3	1993	5,980
4	2002	5,848
5	2005	4,347
6	2007	4,205 (3,800 – 4,610)
7	2010	5,790 (5,350 – 6,230)
8	2012	5,945 (5000 – 6000)

Source : www.atimysore.gov.in

thus greater challenges in formulating and executing an appropriate conservation paradigm. As may be inferred from the above table that the population of elephants has steadily increased and stabilised over the last few years due to sustained conservation efforts and strict protection of the elephant population habitat by Karnataka Forest Department.

On the other hand the increase in elephant population as well as fragmentation of forests has resulted in increasing man elephant conflict. However efforts such as improved barriers, anti depredation camps, activities of eco development committees with the l9ocal communities etc has yielded good results in the recent years by

Year	Human causalities caused by elephants
2010-11	34
2011-12	14
2012-13	26
2013-14	17
2014-15 (as on 31-07-2014)	04

Source : www.atimysore.gov.in

decreasing the human casualties due to elephant raids. Elephant deaths due to poaching and electrocution have decreased in the state.

The Karnataka Elephant Task Force has constituted a zone-based approach to make recommendations for the management of elephants in the state through conservation of habitat, protection of elephants, mitigation of conflict, strengthening of administrative structures and institutions, participation of local communities in this broader scheme, and scientific monitoring. It recognizes that conservation of elephants comes at a cost, often a great one borne largely by marginalized communities of farmers and other rural people. Task Force advocates a scientifically sound yet pragmatic scheme for the long-term conservation of elephants in the state.

- **Elephant Conservation Zone:**

In this zone primarily elephant conservation takes priority over competing livelihood goals. It encompass the larger and more-intact forested habitats that hold a large elephant population comprising a substantial proportion of the elephant population of the state. The emphasis within this zone would be maintaining habitat integrity at the landscape scale through protecting and strengthening corridors, preventing elephants from moving into agricultural land and settlements both along the periphery and within enclaves, and affording maximum protection to elephants against illegal killing.

- **Elephant-human Coexistence Zone:**

Here both elephant conservation and human

SL.No	Year	Natural	Poaching	Gun Shot	Electrocution	Accident/ Other reason	Total
1	2010-11	100	01	07	13	00	121
2	2011-12	99	00	03	15	01	118
3	2012-13	181	00	04	13	01*	199
4	2013-14	135	01	01	04	00	141
5	2014-15 (as on 31-07-2014)	28	00	01	02	00	31

Source : www.atimysore.gov.in

livelihoods have to be balanced and reconciled. Elephant populations numbering in the several tens or perhaps over a hundred, either isolated or connected to the major conservation zone, but ranging over a restricted or a fragmented habitat in which conflicts are high, would qualify for experimenting with the a model of coexistence with people.

- **Elephant Removal Zone:**

In this zone human safety and livelihood take precedence over competing conservation concerns about elephants. The elephant-removal zone includes places where small or isolated groups of elephants, with questionable viability, or solitary bulls range over a predominantly human-settled landscape, and the social and economic costs to maintaining the elephants here are unacceptably

Elephant Herd in Kabini

Karnataka Elephant Task Force emphasis on Elephant management, including conservation and conflict mitigation which needs to be handled differently in different areas. Elephant management will require adoption of different approaches in different areas along with some common cross-cutting strategies. While Impending area specific mitigation strategies, there should emphasis on maintaining habitat integrity, keeping elephants within forest boundaries, and preventing poaching for ivory. Some of the other strategies that have been implemented by Karnataka Forest Department for tasking the problem are :

Elephant Proof Electric Fencing

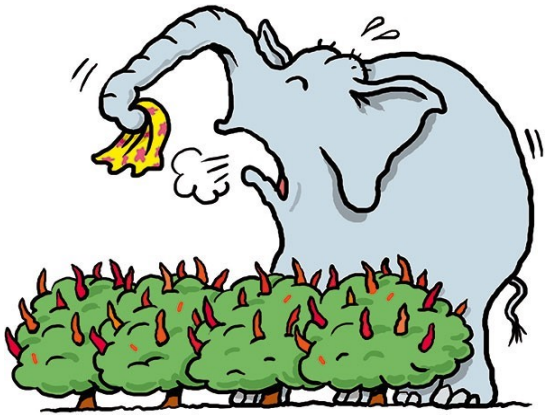
- **Electric fencing:**

An electric fence consists of wires carrying a pulsing electric charge supported by wooden posts. High-voltage intermittent pulses from the energizer send unpleasant but harmless electric shocks to animals (including humans) that come into contact with the electrified wires. The purpose of an electric fence is not so much as a physical barrier but more as a psychological one.

- **Elephant-proof trench (EPT):**

The aim of the Elephant Proof is to create a ditch that is wide and deep enough so that an elephant cannot step over it. Elephants are not able to jump it and enter to human habitat. Trenches can be used in conjunction with electric fences, a

Elephant Proof Trench



Chilli powder as repellent

combination can work well.

Other forms of barriers include loose-stone walls, earth bunds, log barricades, and moats. However, elephants can break down loose-stone walls and swim across moats.

- **Repellents:**

Repellents are used to keep elephants away by causing discomfort to the elephants. Repellents can be a form of active protection. Noise is a commonly used repellent, as most wild animals would be scared off by loud noises. The most common noise-makers employed include firecrackers, thunder flashes, vehicle horns, shouts, rifle shots, and whip-cracking.

Light is another common method used to scare away elephants. The most common practices are keeping oil lamps and fires burning along the perimeter of the plantation. lights on their own may not be very effective, it is helpful when used in conjunction with patrol squads, as it may help the guards see the elephants approaching and enables the elephants to see that the crops are being actively guarded.

- **Translocation:**

Capture of elephants for translocation involves tracking and tranquillizing the elephants , securing them with ropes and chains, and leading them to a specially modified truck, often with the help of domestic elephants. Only the relevant wildlife authority are permitted to carry out this operation. Immobilization of such a large animal is a very specialized and delicate process and the loading and transportation of the animal requires experience.

The costs involved in translocation are very high and available release sites are limited by both logistical and ecological considerations. Overall, this is a complex procedure which requires careful study and planning that takes into consideration a variety of factors such as herd size, sex ratio, and ranging patterns in both the points of capture and re-release.

- **Culling :**

Culling is the selective killing of wild animal. When it comes to human-elephant conflict, many

Translocation of Wild Elephants

people, especially those depending on their crops, see killing the problem elephants as the only way to reduce further and future crop damage. As a result, elephants are killed either by shooting or by poisoning. However, it is illegal to kill elephants unless performed or licensed by the relevant wildlife authority. So far this option has never been resorted by Karnataka Forest Department.

- **Other anti-depredation methods:**

Use of traditional methods of driving them in desired direction should also be tried out. Elephants associate the sound of wood-cutting to the presence of people and do not venture to advance in that direction. Such natural sounds were used effectively during kheddah operations by tribes to drive elephants in a desired direction.

Chilli-tobacco paste smeared on a rope has been reported as partially successful in keeping away elephants, with almost complete success reported in deterring family groups in drier regions. This is tried judiciously in dry regions of the state during the crop harvest season when raiding by elephants is typically at a peak.

Mechanical barriers that are strong enough to withstand any force can also be used.

- **Ex-gratia payments to affected farmers:**

Crop Damages, Property Loss due to

elephant raids has decreased but deaths of humans due to elephant attack has increased between 2010-11 and 2013-14. But human death due to elephant attack in the year 2014-15 is nill.

There is no one solution for all situation Neither are there easy solutions to eliminate Human Wildlife conflicts. Conflict alleviation is a two-sided equation. Both wildlife and people are in conflict. The goal is thus to enable coexistence and sharing of resources at some level. This can be best achieved by addressing both sides of the equation and finding a balance between conservation priorities and the needs of people who live alongside wildlife. Increasing tolerance levels of local communities for wildlife and adapting the human landscape are essential goals, but will always be the most difficult.

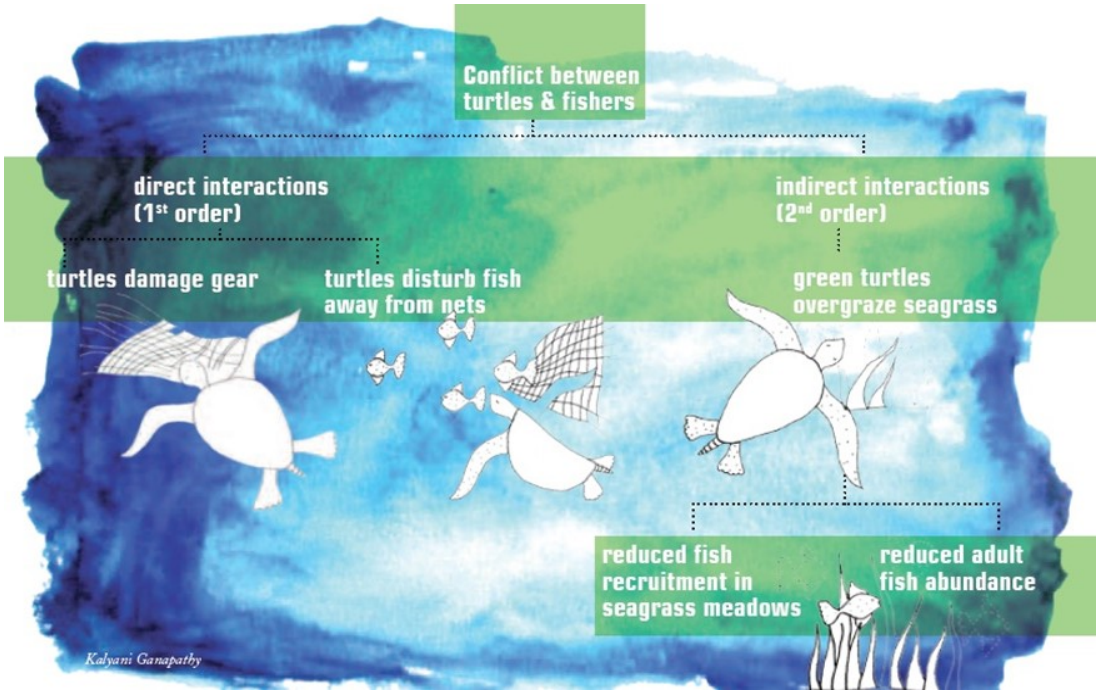
Sl.No	Particulars	2010-11		2011-12		2012-13		2013-14	
		No of Cases	Amount	No of Cases	Amount	No of Cases	Amount	No of Cases	Amount
1	Crop Damage	33555	827.099	20312	541.226	34496	958.946	19137	619.776
2	Cattle Killed	751	23.832	656	21.426	1269	42.965	832	27.998
3	Human Death	44	72.550	30	112.200	59	276.674	68	322.710
4	Permanent disabil-	5	1.949	10	5.107	36	8.790	11	5.528
5	Injury	211	22.220	158	13.390	151	18.934	157	15.539
6	Property Loss	22	1.151	53	1.420	80	2.527	64	2.258
	TOTAL	34588	948.801	21219	694.769	36091	1308.836	20269	993.809

Source : www.atimysore.gov.in

THE TURTLE WARS WITH FISHERMAN OF INDIA

Wildlife happens to intrude on human "space" mostly while searching for food, and this can result in human deaths, or destruction of human livelihood. The perception of people living close to wildlife in such conflict areas shapes the interaction between them and the wildlife.

Over the past 15 years, lagoon fisheries in the Lakshadweep Islands have been facing an unusual problem. Fishing communities on Lakshwadeep, blame their reduced fish catch on green turtles; according to them, green turtles chomp their way through the sea grass beds lining the shallow reef waters that are essential for fish to breed. This leads some in the community to clandestinely kill sea turtles and destroy their nests, leading to severe conflicts with local fishers.



Source: Current Conservation

Sea turtles are marine reptiles declared endangered as they are in the brink of extinction due to destruction of nesting beaches, predation of eggs and hatchlings (70-90%), accidental catch by gill nets and trawl nets, predation by sharks, entrapment in ship or boat propellers during migration and sand mining. Since these turtles enjoy the benefit of conservation legally, their fishing mortality is zero and their population increases exponentially as the turtles here have very few chances of predation or fishing mortality coupled with their longer lifespan. Lack of predators or fishing mortality can cause imbalance in the food web and the trophic level. This has led to the Possible consequences of sea grass overgrazing resulting in loss of habitat and biodiversity, reduction in productivity, erosion of intertidal area, siltation, creation of turbid plume of silt particles, death of corals due to sedimentation and poor molluscan diversity.

Sea Turtle

A turtle tangled in net.

Turtle burnt by humans

CONFLICT WITH OTHER CARNIVORE'S

Humans and wildlife have been under constant scrutiny in bid to fight for space available for one other for their survival and existence. Because of such opposing factor, the rise on conflict between them is inevitable because of burgeoning anthropological pressure on our Protected Areas (PA). In a country like India, which is on a huge economic expansion and one of the world's leading developing countries, the pressure on the PAs mounts exponentially. The definition of human – wildlife conflict itself indicates the same which quotes "Human-wildlife conflict occurs when the needs and behaviour of wildlife impact negatively on the goals of humans or when the goals of humans negatively impact the needs of wildlife" according to 5th Annual World Parks Congress (8–17 September 2003), Montreal. Thus, such instants cannot be put to an end forever, rather the concept of coexistence must be practiced which can benefit both humans and wildlife.

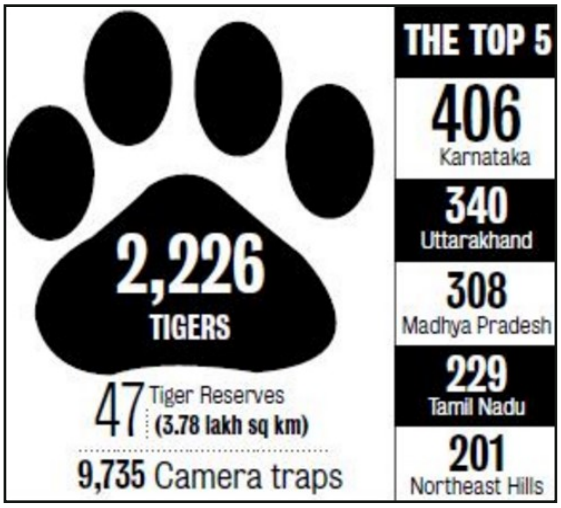
Wild animals intrude in human spaces which were former homes to these animals. Humans for their economic benefit try to utilize maximum for the minimalistic opportunity they get which can in turn bring rift between them. Constant pleas of relocation of animals fails to adhere unless of serious magnitude. Carnivores in general pose such high risks. The threat to human life, cattle and pets is one of the most discussed topic today. Karnataka has the highest population of Tigers in the world numbering up to 406 and has very highest density of Leopards in Bhadravati area of Shivamogga District and that of Sloth Bears in Tumkuru District according to the recent finding. Hence, the state faces constant threat by these animals and suitable compensation is awarded to the affected.

Tigers

Tigers are territorial animals which have home ranges between 10 sq km and 100sq km or more depending on the prey density available. They are very protective of their territories and fight themselves to death when defending. Tigers which are injured or have lost their territories often venture outside the PAs for prey. This behaviour can pose risk to humans. Since livestock and humans are easy prey, there is a tendency to attack them for their nutritional requirement. According to the NTCA SOP on Tigers, care should be taken by the local forest department staff regarding the kill. The cattle which is killed should be left alone for the tiger to return and feed on. Pressure Induced Pads (PIPs) and Camera traps should be placed in the surrounding area to track the animal movement in the area.

Animal if found injured or deformed should be immediately tranquilized or trapped in a cage and sent to the zoo for treatment. If the tiger recovers, it can be decided by the authorities to release it back to the wild or stay put at the zoo for the rest of its life term depending on its age and fitness. In addition, care should be taken by the local forest department that the cattle carcass should not be poisoned as retaliatory killing. Also, local authorities like police, media, and collector should be informed from time to time to maintain the law and order in the area. The SOPs are free available at the NTCA website for step by step information to deal with tigers which are depredating livestock, stray tigers, orphaned, abandoned and old/injured individuals.

Tiger Mortality in India–year wise (NTCA)			
Year	Natural and Other Causes	Poaching and Other Causes	Total
2010-11	25	28	53
2011-12	40	16	56
2012-13	27	46	89
2013-14	9	15	68
2014-15 (as on 25-08-2014)	4	5	50

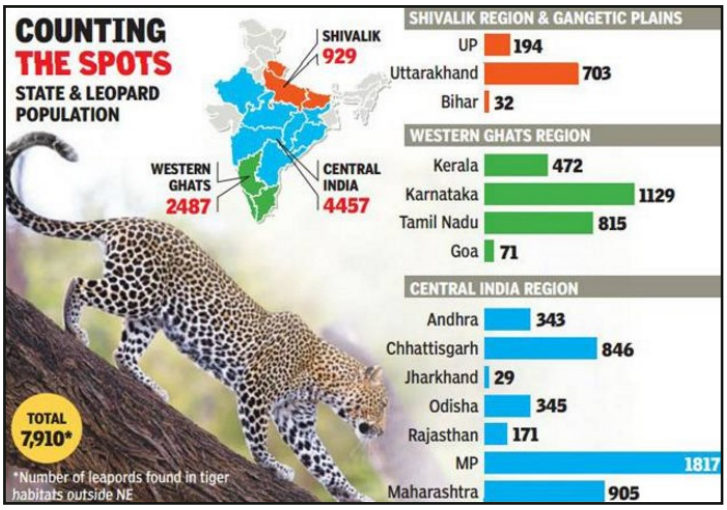


Karnataka leads country in Tiger count

Leopards

Leopards are the most elusive wildlife species in the wild which have the ability to adapt to a variety landscapes. They are so adaptable that, they are even found dwelling in urban landscapes, in outskirts of metropolitan cities of Bangalore and Mumbai and can survive on rats and other rodents for their diet. One of their favourite prey is the

domestic dog, which often fall prey to them. The never ending growth in the human population and the rise in the need of infrastructure and anthropological activities associated with it has led to a huge shrink in the home territories and thereby pose a threat to their existence in the wild. One of the most important mitigation measure is educating the masses in the locality about the possible threat which can be sparked between humans and leopards. Listed are some of the points which are the SOPs in Human - Leopard Conflict Management designed by the Ministry of Environment Forest and Climate Change. More SOP related information is listed under the MoEF and CC website.



Finally, India gets a count of its leopard numbers: 12,000-14,000

Venomous Snake

India is estimated to have the highest snakebite mortality in the world. World Health Organization (WHO) estimates place the number of bites to be 83,000 per annum with 11,000 deaths. Most of the fatalities are due to the victim not reaching the hospital in time where definite treatment can be administered. In addition, community is also not well informed about the occupational risks and simple measures which can prevent the bite. It continues to adopt harmful first aid practices such as tourniquets, cutting and suction, etc. Studies reveal that primary care doctors do not treat snakebite patients mainly due to lack of confidence. At the secondary and tertiary care level, multiple protocols are being followed for polyvalent anti-snake venom (ASV) administration, predominantly based on western textbooks.

There are about 236 species of snakes in India, most of which are nonpoisonous. Their bites, apart from causing panic reaction and local injury, do not harm the patient. However, there are 13 known species that are poisonous and of these four, namely common cobra (Naja naja), Russell's viper (Dabiola russelii), saw-scaled viper (Echis carinatus) and common krait (Bungarus caeruleus) are highly venomous and believed to be responsible for most of the poisonous bites in India. These snakes are commonly found in urban and agricultural areas as their main source of nutrition is rodents, frogs and similar smaller preys. Snakes bites are common near agricultural areas as the workers there often fail to recognize their presence and are accidentally bitten which often leads to death. Also improper footwear and care during the agricultural practices can also lead to snake bites.

First Aid

Much of the first aid currently carried out is ineffective and dangerous. The case management at the field level should include reassurance, immobilizing

the bitten limb and transporting the victim to nearest treatment facility at the earliest where definite treatment can be provided. Reassure the victim that death is not imminent and medical care is available. Control anxiety as excitement will increase heart rate and lead to spread of venom. Make the victim lie flat with bitten limb below the heart level. Remove shoes, rings, watches, jewelry and tight clothing from the bitten area as they can act as a tourniquet when swelling occurs. Immobilize the victim's bitten limb using a splint and lightly put a bandage. Be prepared to treat the shock and provide cardiopulmonary resuscitation (CPR). Get the victim to the nearest secondary or tertiary care hospital where anti venom can be provided. Do not wash the bite site with soap or any other solution to remove the venom. Do not make cuts or incisions on or near the bitten area. Do not use electrical shock. Do not freeze or apply extreme cold to the area of bite. Do not apply any kind of potentially harmful herbal or folk remedy. Do not attempt to suck out venom with your mouth remedy. Do not attempt to suck out venom with your mouth.9 Do not give the victim drink, alcohol or other drugs. Do not attempt to capture, handle or kill the snake and patients should not be taken to quacks. There has been some initial research which suggests that a "Pressure Pad" at the site of bite may be of benefit.

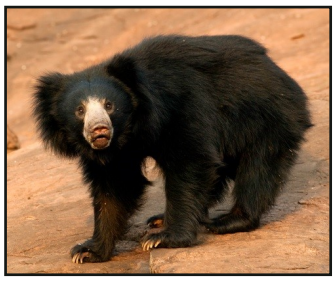
Anti-snake venom (ASV) is the mainstay of treatment. In India, polyvalent ASV, i.e. effective against all the four common species; Russell's viper, common cobra, common Krait and saw-scaled viper and no monovalent ASVs are available. There are known species such as the humpnosed pit viper (Hypnale hypnale) where polyvalent ASV is ineffective. In addition, region specific species such as Sochurek's saw-scaled viper (Echis carinatus sochureki) in Rajasthan, where the effectiveness of polyvalent ASV is questionable. ASV is produced both in liquid and lyophilized forms. There is no evidence to suggest which form is more effective. Liquid ASV requires a reliable cold chain and has 2-year shelf life. Lyophilized ASV, in powder form, has 5-year shelf life and requires only to be kept cool.

Bear

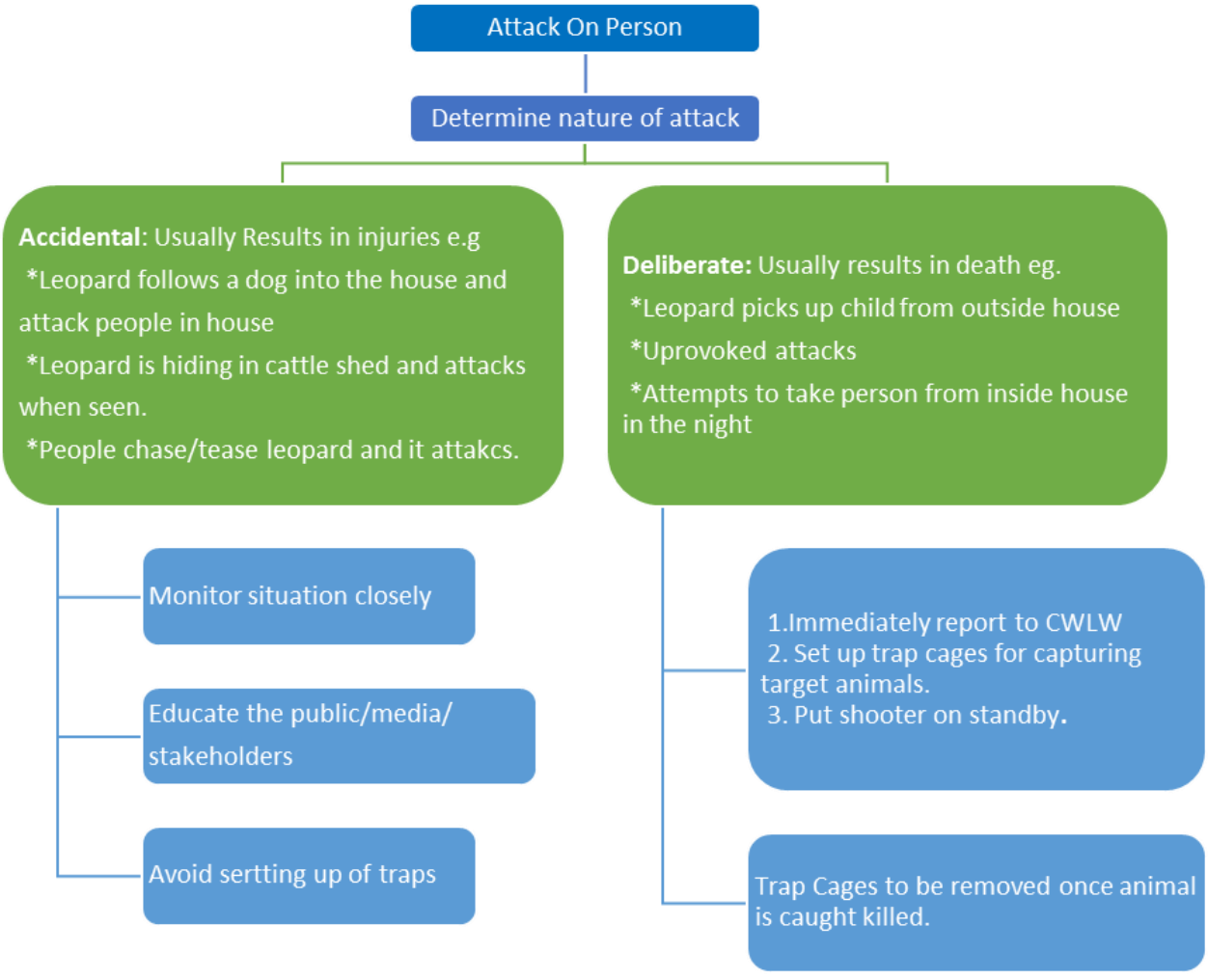
Sloth Bears are insect and fruit eating nocturnal animals found in the subcontinent. Commonly found in dry forested landscapes across India. Karnataka is presumed to hold the second largest population of Sloth Bears in India after Gujrat. A first ever Sloth Bear Census in the state is on offer to determine the number in the state. Tumkuru district holds the highest population of Sloth Bears followed by Shivamogga district according to the experts at Wildlife SOS, an NGO which works on them. In addition, Tumkuru district also reports the highest number of Bear attacks in the state. This is mainly because of the shrinking forest cover for them to dwell and increasing livestock grazing in their home range. Since some of Bears food habits is overlaps with that of the humans, such conflicts arise constantly. Most sloth bear attacks can be classified as 'defensive' attacks. When a human intrudes into its space suddenly, a bear may sense a danger to its life and respond by attacking. Attacks typically happened when the bears were resting during the day or foraging in the early evening period in dense shrub-covered areas. When people traveling through forests or tending cattle inadvertently went too close, the panicked bears attacked in self-defense.

The first thing one needs to do is to avoid getting into a situation where one may encounter a bear

suddenly is by avoiding dense shrub-covered localities, particularly in the evening and morning times when bears are likely to be active. To avoid being alone in such places at such times. In the event of an attack, if one is not able to move away or chase the bear away, it has generally been advised to protect the face, head, neck, and nape by lying on the ground face down and covering the nape with locked hands. Sloth bears do not feed on humans, and at the most they will bite and claw. If no further provocation occurs they may retreat after the initial attack. It should also be noted here that there is no strict rule about the way a bear may attack or a fail-safe guideline about how humans should react during such encounters. The behaviour of a bear may be shaped by its past encounters with humans – in short, there may be personality differences in the way bears attack or retreat in such encounters. It is to be noted that no SOP is issued by the MoEF and CC to handle such situation.



STATEMENT OF PROTOCOL ON HOW TO HANDLE THE SITUATION ACCORDING TO THE MOEF & CC WHEN ATTACKED ON HUMANS.



WHOSE RIGHT IS IT ANYWAY…!!

Human wildlife conflict is a significant problem in India. The conflict has important consequences for local populations in terms of safety and well-being, food security, for the micro and macro economy and also for the wildlife conservation. Considering the current human population growth rate, the increasing demand for natural resources and growing pressure to access land, it is clear that the human wildlife conflict is difficult to be eradicated in the near future.

A series of measures are available to prevent or mitigate human wildlife conflict. Well-designed human wildlife conflict management plans which integrate different techniques, which are adapted to the nature of the problem can be successful. Potential solutions can be selected based on their effectiveness, cost and human and social responsibility. The most sensible approach in addressing human wildlife conflict is to implement a combination of short term mitigation tools alongside long term preventive strategies. In this way immediate problems can be addressed while the rapid development of innovative approaches is fostered to address future issues and eradicate the problem in the long term.

However a headway towards conflict management can be made only when we accept that humans and wildlife will have to share space with each other. The way to a sustainable future requires the adoption of the fact that wildlife should stay in the protected areas and human dwelling should be off the limits of the wildlife dominated and protected forest areas.

♦ India Reports Nearly 30% Rise in Wild Tiger Population

Tiger numbers grow to 2,226 in 2014

Wild tigers are surging back in India according to the latest tiger estimation released by India's National Tiger Conservation Authority.

The population of wild tigers in the country increased to 2,226 in 2014 from 1,706 in 2010 (and only 1,411 in 2006), according to the new report. This growth is largely due to better management and improved protection. The Status of Tigers in India, 2014 report also underscores the importance of tigers maintaining core habitats for breeding, habitat connectivity and protection from poaching.

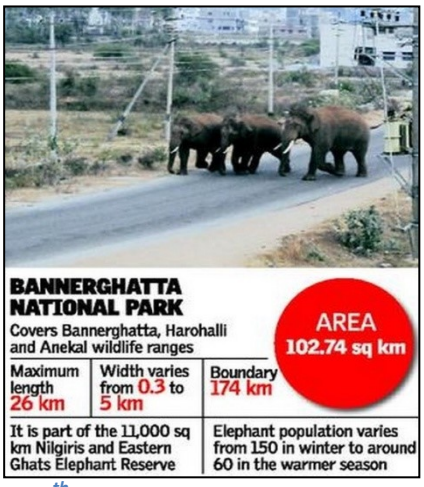
"At a time when the global tiger population is under threat, it is heartening that India's tiger numbers are increasing," said Mr. Prakash Javadekar, Honorable Minister of Environment, Forests and Climate Change. "This was not the situation a decade ago and I am proud that we have risen to the challenge and turned the situation around."

Helping tigers recover and thrive

The survey covered more than 115,800 square miles across 18 states and analysed images from thousands of camera trap locations across tiger landscapes. For the first time, areas outside tiger reserves were also included in the study. WWF was part of this unprecedented effort led by the National Tiger Conservation Authority, state Forest Departments and the Wildlife Institute of India, as well as other conservation organizations. India's outstanding result demonstrates that tigers can recover and thrive, even in densely populated countries with a focus on economic growth—as long as there is political will and the commitment to get results.

NEWS

♦ **Male elephants reason behind rise in man-animal conflict?**



The spike in man-animal conflict near Bannerghatta National Park (BNP) is being attributed to the high density of male elephants. In the latest incident, a wild elephant killed a forest watcher near Anekal on Tuesday night. Three people have died in separate attacks in the park in the past one month. "A group of eight males had come into the park from forests in Tumakur. There is a high density of males in the forest. Some of them may be in musth (when testosterone level increases by up to 60 times)," said Sunil Pawar, chief conservator of forests, BNP. With the park sharing a boundary with a contiguous forest of more than 11,000 sq km, experts believe it houses between 60 to 150 elephants.

July 16th 2015, The Hindu (Bangalore)

♦ **Elephant attack: Hosur struggles to mitigate man-animal conflict**

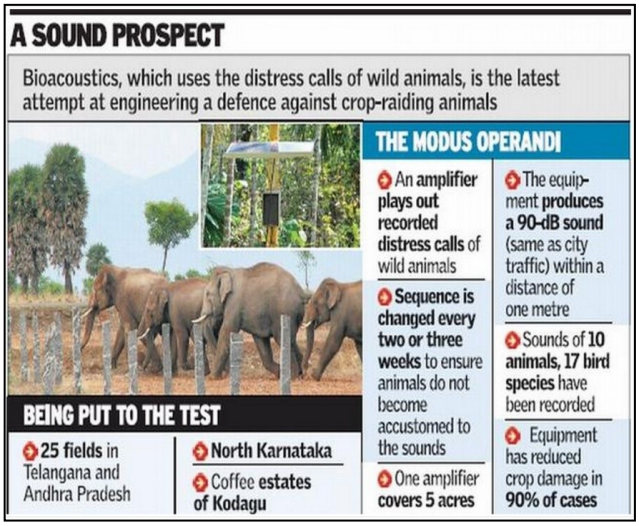
Death of woman in Jawalagiri range puts spotlight on shrinking elephant corridor.

A 38-year-old Rajammal was hurled to her death by an elephant when she was grazing cattle in the Jawalagiri range with three other women. This casualty, the second this year, has brought the focus back on the human-animal conflict in the Hosur Forest Division. Nestled in the lap of three wild life sanctuaries, the Forest division represents a fractured elephant corridor. Couched in the midst of Bannerghatta Wildlife Sanctuary in the West, Maadeshwaran Malai sanctuary in the East and Venkateshwara Sanctuary of Andhra Pradesh in the North, the elephant corridor here is hardly seamless, interspersed with revenue villages.

July 25th 2015, The Hindu (Krishnagiri)

♦ **An invisible defence against crop-raiding animals**

Physical & biological barriers are incapable as deterrents



The wailing cry of an animal in distress reverberates through arid fields. At a distance, the instincts of wild boars kick in, and they scoot in the opposite direction having been warned of danger in the fields. By the lush forest of Western Ghats, an amplifier plays out noises of monkeys, keeping away these animals from cultivated lands.
raiding animals.

With both physical and biological barriers turning out to be incapable in deterring animals from running over crops, bioacoustics — which uses the distress cries of wild animals — is the latest attempt at engineering a defence against crop-raiding animals.

July 13th 2015, The Hindu (Bangalore)

♦ **Feeding wildlife may escalate human-animal conflict: activists**

People feeding wildlife, which continues to be the bane of Bandipur, has now spread to BRT Sanctuary much to the chagrin of conservationists and wildlife activists.

A practice which can spell disaster for both the wildlife and the humans in the long run if unchecked, local activists claim that vegetable waste is being dumped inside the sanctuary.

Activist S. Shankar told The Hindu that they have photographs and videos of people travelling in KSRTC buses dumping vegetable waste in the forests. Animal feeding is regular at Gumballi Gate and on the way from Gumballi to B.R. Hills. During the DoddaJathre and similar fairs, it is common to find people stopping their vehicles inside the tiger reserve to feed animals.

June 14th 2015, The Hindu (Mysuru)

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* *http://www.envirosearch.in/*

STRATERGY FRAMEWORK FOR HUMAN WILDLIFE CONFLICT

Progress in preventing and managing conflicts will require the implementation of both short term and long term strategies. The following strategies are intended to contribute to preventing and reducing human wildlife conflicts.

Strategy 1: Establish effective leadership roles

- Forming an inter-agency group to provide provincial leadership and serve as a steering committee to review ongoing programs and address emerging issues;
- Bringing together representatives of government and nongovernment organizations with an interest in wildlife management and conflict prevention, to review and discuss human-wildlife conflicts, make recommendations and identify potential response roles;
- Building human-wildlife conflict prevention expertise.

Strategy 2: Commit to collaborative action

- Building consensus on goals for addressing human-wildlife conflicts;
- Securing both public and stakeholder support;
- Fostering partnerships for the implementation of strategies;
- Identifying clear responsibilities and roles for partners; integrating federal, provincial, and municipal activities.

Strategy 3: Develop a "Toolbox" to address immediate and long-term issues

- Developing prevention and education materials and tools aimed at reducing human-wildlife conflicts;
- Developing and promoting the adoption of best management practices for mitigating for human-wildlife conflicts;
- Reviewing and improving programs for landowners to practice resource stewardship and the conservation of wildlife, building on current initiatives;
- Exploring opportunities to improve incentive programs and to use other mechanisms to support private land stewardship;

Strategy 4: Build community-based solutions

- Encouraging local communities to initiate discussions on conflict issues;
- Engaging resource stewardship and advisory committees, representing stakeholder interests and resource professionals, to increase awareness and discuss solutions;
- Connecting landowners who wish to address wildlife issues on their land with those who can contribute to resolving those problems (e.g. extension specialists, wildlife technicians, animal control agencies, hunters, trappers, naturalists' groups).

Strategy 5: Establish a timely and practical knowledge base

- Developing "state of the resource" reporting;
- Conducting scientific studies and expanding knowledge of life history characteristics of selected wildlife species, including population dynamics, behaviour and habitat requirements;
- Updating literature and jurisdictional reviews to obtain information about the causes of and solutions to human-wildlife conflicts, building on the success of others;
- Establishing demonstration and pilot projects to find creative solutions and develop effective tools to mitigate for human-wildlife conflicts;

Strategy 6: Education to effect change

- Integrating efforts to educate the public about understanding ecological principles, their relationship with wildlife and the life histories of wildlife that reside near them;
- Incorporating information regarding human-wildlife conflicts into educational curriculum at all levels;
- Informing the public about actions by humans and wildlife that result in human-wildlife conflicts;
- Raising awareness of the public regarding the implications of their actions with respect to human-wildlife conflict;
- Acknowledging the role of resource management activities (such as regulated hunting, habitat conservation, and wildlife rehabilitation) in addressing human-wildlife conflicts.

No one in the World needs an elephant tusk but an Elephant

Say NO to

Ivory Trade

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