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LEGAL PERSPECTIVE ON URBAN WILDLIFE: A ROAD TOWARDS CO-EXISTENCE

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The Biological Wealth of our World has been diminishing rapidly because of Urbanization. The extinctions that the world is facing are largely due to human activities. Our World consists of diverse species where human encroachment has led them to come out of protected areas. There has been a change in the present scenario where wildlife and humans co-exist in the same environment, leading to an increase in the human-wildlife conflicts. The conflict between them ranges from injury to loss of life which results in competing for resource. There have been laws governing wildlife and its conservation, such as The Wildlife (Protection) Act (1972) having six schedules with varied degree of protection to wildlife, Forest Act (1927) - defines the procedure to be followed to declare an area to be reserved forest, protected forest and a village forest and also what is forest offence, Forest Conservation Act (1980), The Environment Protection Act (1986), The Biological Diversity Act (2002), National Wildlife Act Plan, and National Forest Policy 1998 etc.,

But Acts, policies and plans that are present in India do not address the issue of Urban Wildlife. The Need for the hour is to protect urban wildlife and humans in co-exist environment. To control wildlife population, one must understand their habitat factors, if any of the habitat requirements are absent, that will lead them either to migrate to other area capable of providing their needs to survival or death. Some activities that can be undertaken to preserve our environment are to understand and analyze the impacts of urbanization on wildlife, and making a clear path for urban wildlife for co-exist living. Conducting educational programmes, group visits to wilderness areas, school programmes and community education can help urban community in understanding and managing changing scenarios.

When the concept of urbanization and wildlife is understood well, these give us a way to

sustainable development and preserve our wildlife species. This gives us an opportunity to make laws regarding changing scenario and equip us to govern and manage the non-humans in Indian cities and to promote security to wildlife and co-exist living. The methodology adopted in this paper is doctrinal relied both on primary and secondary data's. This paper is an attempt made by the authors to examine and understand the struggle of Wildlife in Urban cities, further to point legal lacunas in the present laws so that it will be addressed by the appropriate authority to bring in the new laws or to strengthen the existing laws to safe the wildlife.

INTRODUCTION:

The ecological wealth of our world is rapidly depleting because of urbanisation. Wildlife extinctions that the world is now facing, can be largely attributed to human activities.

According to Mitchell urbanization is a process of becoming urban, moving to cities, changing from agriculture to other pursuits common to cities.²Rapid urbanisation poses challenges for sustainable development and this in turn forces a change in the composition of the animal kingdom tremendously.

India has a rich and diverse wildlife across the country. Increasing encroachment by humans into forest lands is now becoming a threat to Indian wildlife. Wildlife refers to all the plant and animal species that survive in natural, wild areas throughout the world. A delicate balance must exist among all living things in order to sustain healthy ecosystems. Unfortunately, that balance has been thrown off by human involvement. Mammal, bird, reptile, fish, and amphibian populations have declined by 52% during the last 4 decades.¹The major causes of wildlife depletion are loss of habitat, over exploitation of natural resources, lack of food and shelter for endemic species. Invasion of alien species and co-extinction force animals to come out of protected areas, to places where they can survive by adapting themselves. The co-existence of humans and wildlife has given rise to the concept of Urban Wildlife.

The term urban means 'belonging to' or 'relating to', a town or city.

²Puja Mondal, Urbanisation: causes and effect of urbanisation in India, your article library,<http://www.yourarticlelibrary.com/india-2/urbanization-causes-and-effects-of-urbanization-in-india-766-words/4659/>

According to section 2(37) of The Wildlife (protection) Act 1972, 'wildlife' includes "any animal, bees, butterflies, crustacean, fish, moths and aquatic or land vegetation which forms part of any habitat."

URBAN WILDLIFE:

Most people are of the view that urban wildlife is limited only to house mice, pigeons and sparrows. Urban wildlife includes animals as well as suburbs. The animals can be vertebrates or non-vertebrates. Wild animals are attracted to human settlements and find it easier to adapt in these places due to the availability of food, open parks and gardens. Urban wildlife is wildlife that can adapt and thrive in urban environments. Species that migrate to urban set-ups become entirely dependent on humans for survival.

Urban environment supports wildlife that adapts well with its constantly changing conditions.

Urban wildlife in India includes monkeys, langurs, leopards, birds, elephants and so on.

For survival, animals need access to water, food, shelter and an environment that is safe and comfortable to reproduce. The place where animals and plants grow is called a habitat. A good habitat consists of all the aforesaid supporting features. Urban forest account for 12.12% of the geographical area of Delhi leading to approximately 10.7m² per inhabitant (using 2011 population data).³Density of Bangalore trees are lower when compared to other Asian cities.

INDIAN LEOPARDS IN MUMBAI:

India is one of the countries with the highest density of leopards. The Dehradun wildlife Institute of India, conducted a comprehensive study on leopards and their prey in Mumbai.

Instances of these leopards attacking people, killing both children and adults posed a threat to the residents in the area. In Maharashtra's Junnar region an 8-year period from 1993 to 2001, 33 attacks by leopards on people were recorded, averaging about 4 attacks a year.¹

Deficiencies in indoor plumbing and lack of lavatories force people to come outdoors. The

³Forest survey of India (2013)

residents used to take walk or a jog but they were mistaken to be prey. It has always been easy for the leopards to prey on dogs or feral pigs.

Many were of the view that the excessive dog population in the villages surrounding forests attracted these leopards. Cases of leopard attacks were reported everyday which only resulted in the leopards being sent to rescue centres. Sanjay Gandhi National Park received suggestions to build walls around the sanctuary, which would restrict both, the movement of leopards to the sanctuary's premises and the entry of unauthorised personnel. No wall has been constructed, nor is there fencing to keep leopards and people away. Though there were numerous claims on what happened during the early 2000's there isn't much change. Khanolkar who is interested in wildlife photography has travelled across country, capturing the images of leopards, to convince anxious citizens that it is possible to live safely alongside them and that's important for conservation .” I wanted to convey that if co-existence with predator is possible in centre of metropolis, there is no reason why it shouldn't be possible anywhere else in the world”⁴. On the brighter side, initiatives to facilitate co-existence taken up by animal activists, the forest department and other volunteers and proactive villagers has led to a drastic fall in the number of attacks.

MONKEY AND LANGUR:

Man-monkey association is as old as man's own existence. Of nearly 225 living species of non-human primates three Indian species have become urbanised. They are rhesus macaque(Macacamulatta), the bonnet macaque (Macacaradiata), and the Hanuman langur (semnopithecus entellus).¹

Encroachment by humans has resulted in them losing their habitat. These monkeys are highly adaptive and thus are nearly associated with man. In their quest for food they end up stealing food from residents, ransacking plantations or depend on garbage found around picnic spots and forest reserves. These are also the areas where conflicts arise between man and monkeys. These conflicts result in monetary losses for humans and physical injuries to both, humans and monkeys. In a survey conducted in Himachal Pradesh they documented that out of 3,243 panchayats of the state, 2,301 was affected by monkey crop damage.⁵ The monkeys living near the high ways are the reasons for accidents which eventually results in disturbance.

⁴NayanKhanolkar, Biology Professor

⁵Taprobanica, Rhesus macaque and associated problems in Himachal Pradesh- India, Vol.4 no.2, 112-116 (2012)

These monkeys have made densely populated areas and temples their homes as the availability of food is easier in such areas. And moreover, residents of these areas feed the monkeys or leave food for them, because of which they are now well adapted to processed foods.

Rhesus macaque and Hanuman langurs live near temples, where they are fed and protected as they are considered to be scared according to the Hindu mythology. This is one of the reasons why humans in those areas are tolerant towards these monkeys.

ELEPHANTS IN SOUTH AND NORTH EAST INDIA:

Human interferences with nature has also forced elephants to venture out of the wild to human settlements surrounding the forests causing discomfort to both humans and elephants.

Farmers of Tamil Nadu's Krishnagiri are tired of beating their drums, blasting old Tamil tunes from rusty loud speakers at deafening decibel levels and buying new round of firecracker for the night.¹These helpless farmers feel these methods can keep elephants away and save their lives and property.

Elephants migrate from the forests of Hosur towards Krishnagiri. During this movement, elephants require large tracks for food, spaces and shelter. The areas of Vellore, Krishnagiri, Erode and Nilgiris in Tamil Nadu are prone to man and elephant conflicts.

It is now known that using the aforesaid methods to scare away elephants is of no good and only creates more friction, ultimately resulting in the loss of life of both the elephants and humans. To avoid these situations electric fences were installed recently to keep elephants from destroying plantations. But, sadly, many elephants have died due to electrocution. With time and in the process of adapting to their changing environment, these intelligent animals have learnt to move around these fences and uprooting the trees on which they are installed.

SNAKES

The snake-human conflict is possibly one of the largest examples of human-animal conflict in India today, but it is largely ignored. Our environment consists of both venomous and non-venomous snakes. Species of snakes in our environment are King cobra, Russel's viper, Indian Krait etc. Though a large number of snake bites reported are non-venomous, the number of deaths

due to snakebites in India is high. A study of snakebite mortality in India published in 2011 found that close to 46,000 people die of snakebite every year, far higher than the official estimates from government hospitals of between 1,300 and 1,400 deaths annually.⁶

There are large number of deaths in rural communities and these deaths have paid less regard as it affects the rural poor.

Snakes are highly adaptable in nature. They are found mostly in rural India and at times in urban areas as well, they are found on the farms and occasionally enter houses as well. Due to lack of awareness and experienced doctors who know how treat these cases and administer anti venom on patients has led to a gradual increase in death rates.

Availability of medicine at the right time is also the issue. Use of anti venom also differs from species to species as potency of venom differs in snakes and as well as the region they belong from.

These problems were never addressed before but they have been given importance in recent years. There are activists who are spreading awareness on how to be cautious and minimize risk, snakebite task forces have been set up, herpetologist have also been working of enhancing and improvising snakebite treatments.

This is a conservation problem and till this gets resolved many will be harmed. Also harming these snakes will result in eliminating endangered species of snakes leading to extinction, need for the hour is a plan where we can coexist.

BIRDS

There is constant struggle even among birds for survival due to rapid urbanisation and expansion in human settlements. The constant decrement in wetlands which support breeding has resulted in fall of number of birds, decrease in number of trees as city is filling with concrete structure, birds are deprived of proper environment for survival, as the materials they use for building their

⁶Nayantara Narayanan, snake attacks in India are a real problem that no one is talking about, scroll.in (may.7,2016,3:30 PM) <https://scroll.in/article/804584/when-snakes-attack-india-has-a-huge-human-animal-conflict-problem-that-no-one-is-talking-about>

nest have become scarce in nature which results in them using plastic sheets, waste paper, wires, as nesting materials.

Birds' lifestyle have changed enormously due to human encroachments. Today we can spot hundreds of pigeons, few mynas, and hardly any sparrows. If we observe the patterns 10 years ago there were about 15-20 species of birds. Among these species only a few can adapt to rapidly changing environment and many have perished from our environment. The absence of sparrow is a dangerous sign as to how we human's are urbanising and destroying our environment.

According to study by Juan Diego Ibanez- Alamo, researcher at the university of Granada and Anderspape Moller from Paris-sub University in France done in 2002 "birds adapt their habitat and develop new survival instincts just like humans".¹

The birds which have close connection to urban life are Mynas, purple sun bird, blue rock pigeons. They have had their existence along human settlements from quite a long time.

Birds like Indian eagle, owl, Indian grey hornbill, White breasted kingfisher have also adapted to urban set up.

These birds which make their nest in dense environment, due to rapid change in environment they are forced to make cavities in buildings as their nests. The peahens which usually lay their eggs on ground are now forced to lay their eggs on roof top due to stray dog menace.

White breasted kingfishers which are found near water bodies feeding on fishes, have now adapted to city life by eating rats, lizards, and insects.

The Indian grey hornbill has adapted to the food change as they were found feeding chapatis to its chicks. Thus even birds lives are affected.

RIVER DOLPHINES

There are at least 39 species of dolphins living in ocean and in different fresh water rivers. These dolphins are found in Ganges river, South Asia and South American rivers, Amazon river. The Ganges river dolphins is now the world's second most endanger fresh water river dolphin.

River dolphin face several threats, due to fragmentation of river due to construction of dams and canals, depletion in food sources, poaching, accident killing, dolphin products and over exploitation

There are about 1,800 river dolphins left in the Indian part of the [Ganga-Brahmaputra-Meghna basin](#), down from about 4,500 as recently as 1982. There may be around 600 more left in Bangladesh, and a few in Nepal, all part of the same basin. In Bhutan, the fourth country in the basin, the Ganga dolphin has not been seen for many years.⁷

These species has been included in Schedule I of the Indian Wildlife (Protection) Act 1972, in Appendix I of the Convention on International Trade in Endangered Species (CITES), in Appendix II of the Convention on Migratory Species (CMS) and categorized as Endangered by the IUCN (International Union for Conservation of Nature).¹

PROGRAMMES

There have been laws governing wildlife and its conservation but need for the hour is programmes and Laws governing Urban wildlife. The present laws in our country are The Wildlife (Protection) Act (1972) having six schedules which varied degree of protection to wildlife, Forest Act (1927) - defines the procedure to be followed to declare an area to be reserved forest, protected forest and a village forest and also what is forest offence, Forest Conservation Act (1980), The Environment Protection Act (1986), The Biological Diversity Act (2002), National Wildlife Act Plan, and National Forest Policy 1998 etc.,

LAWS ADDRESSING URBAN WILDLIFE PROBLEMS:

1. National Environment Management Act, No-107 of 1998
2. National Management Biodiversity Act, No-10 of 2004
3. National Environment Laws Amendment Act of 2011 and 2013
4. AIS Regulations
5. Gauteng Nature Conservation Bills 2014
6. Regional Environment Framework.

⁷Joydeep Gupta, [ganga river dolphin faces extinction, chinadialogue](https://www.chinadialogue.net/article/show/single/en/5208-Ganga-river-dolphin-in-India-faces-extinction) , (Oct 11,2012),<https://www.chinadialogue.net/article/show/single/en/5208-Ganga-river-dolphin-in-India-faces-extinction>.

THE KINGS COUNTY WILDLIFE PROGRAMME:

The Program's activities include regional planning, regulation, development and enforcement, habitat management, and education and incentive programs. The Program works to integrate the needs of wildlife with the interests of the community and private landowners. This unique program can serve as a model for other local jurisdictions in their efforts to maintain wildlife diversity in their communities.⁸

Coyotes education and awareness programme, educational programmes in schools etc are few of the plans executed.

WILD LIFE MANAGEMENT

Wildlife management are the actions taken up to sustain wildlife population, to enhance wildlife habitats and benefit both wildlife and humans. Wildlife belongs to all people and this concept can be practiced most effectively by creating awareness.

Traditional Vs Alternative methods of urban wildlife management.:

1. Traditional methods

- Anthropocentric attitude of man, man seeks conquest not unity
- **Physical:** exclude, restrain, relocate, kill, alteration of environment
- **Chemical:** poisons, repellents, antifertility components
- **Biological:** interactions, parasite, diseases

2. Alternative methods

- Preserve integrity and stability and beauty of biotic community
- Proactive management strategy seeks to avoid the problem of over abundance that is exclusion, preserves natural habitat, create sustainable resource, corridor creation, reconnect natural society with human word.¹

Respecting the lives of animals has four important implications for management. First, lethal means should only be used as a last resort when non-lethal strategies can produce comparable

⁸ Kate Stenberg, PhD, A biologist's place is in city hall: The king county wildlife programme, proceedings of the 4th International symposium on Urban wildlife conservation.

results. Second, the management of human expectations and activity is emphasized since it goes to the root of most human-wildlife conflicts. Third, a much broader array of stakeholders should have a voice on public policies affecting urban wildlife. Hunters, trappers and property owners need to make room at the table for animal rights and welfare advocates, animal protectionists, environmentalists, and others. Finally, public investments in urban wildlife management should shift away from organizations that rely solely or mostly on lethal means to organizations relying on non-lethal means and public education.⁹

Wildlife management cannot be avoided because even well intentioned attempts to “leave nature alone can cause grave ecological harm”¹

Wildlife management mainly concentrates on providing water, food, space, and suitable environment for them to live and reproduce. Merely protection and prevention will not help.

Approaches to Wildlife Management:

1. Legislation and enforcement to: (a) provide protection for, or (b) regulate the harvest of certain wild life species
2. Establishment of refuges or sanctuaries to protect and provide wildlife with places to live and reproduce
3. Predator control to reduce predation on : (a) certain wildlife species, and (b) livestock
4. Artificial propagation at hatcheries or game farms of certain species of fish and wildlife for stocking select areas
5. Feeding of wildlife, especially during winter.
6. Erection of nest houses and structures for birds and squirrels, and artificial cover like brush and piles to supplement habitat management
7. Habitat management, which in suburban-urban areas, in addition to vegetation management and water manipulation, involves special architectural design, placement, and construction of buildings.¹⁰

⁹John Hadidian, Urban wildlife, Animal and society institute, <https://www.animalsandsociety.org/public-policy/public-policy-libraries/urban-wildlife/>.

¹⁰L. Leedy, Daniel & Adams, Lowell, A Guide to Urban Wildlife Management.(1984)

CHILDREN AND WILDLIFE

Children and adults should have knowledge and learn to appreciate wildlife as they are not the same as portrayed in some cartoon films or strips where they talk and act like humans. Children are often exposed to cartoons where animals have potential to think, act like humans. This misconception leaves a false impression on what real animals are like. The young generation should start associating and volunteering themselves with animal protection centres and view authentic documentaries on wildlife in order to learn about animal behaviour and sustainable development and environment protection as a whole. This will also help reduce animal cruelty.

We come across people where they pet turtles or children taking eggs from nests which would be fallen in a park. Rather than taking these eggs home they have to be placed back in its nest.

CONTROLLING ANIMAL NUISANCE

There are lot of cases where human and wildlife have conflicts as we are competing for like resources. There is a need to mitigate and take steps in order to control their interference

The term “nuisance” has more to do with human perception than any characteristics inherent to animals or their ecology¹

- Construct buildings that don't have high beams, nooks, holes to avoid unwanted birds away.
- Screen openings to prevent access to birds and squirrels
- Be sure that dustbin lids are tightly secured to prevent entry, of rats, pigs, and dogs or any other unwelcomed visitors.

CONCLUSION

We have understood the concept of urbanisation, wildlife, and urban wildlife. This gives us a broad view on problems and the management issues faced due to wildlife and human conflicts. This leads for the need to make laws regarding changing scenario which will equip us to govern and manage non humans in Indian cities by promoting urban wildlife which leads to co-exist living.