

Editorial: Avoiding road kill



An adult male tiger T2 from **Bor Tiger Reserve** falls prey to the killer highway **NH-6 (Nagpur-Amravati Highway stretch)** that cuts the vital corridor between Bor and Melghat Tiger Reserves in Maharashtra. It is a reminder that building unsuitable roads through wildlife habitats has a terrible cost.

It has highlighted the inevitable **trade-offs** in conservation and development. Conservation groups and **National Highways Authority of India (NHAI)** have been at logger-heads. Conservationists insist upon mitigation measures such as underpasses on those sections of NH-6 that cut an **important wildlife corridor**.

The Environmental Impact of Roads

Roads are increasingly common in today's world as human development expands and people increasingly rely on vehicles for transportation on a daily basis.

The large network of roads has dramatically altered the landscape and can impact wildlife in a number of deleterious ways. In addition to causing mortality, roads can also shift population demographics and be a source of pollution into the environment.

1. Mortality & Population Declines

When animals cross roads, mortality is often the result. In fact, road mortality is the leading source of mortality to many wildlife populations. This rate of mortality can severely threaten animals and has been identified as a leading cause of decline in some populations. When a road crosses through an animal's preferred habitat, the chances increase for road mortality.

2. Habitat Fragmentation & Alteration

In addition to causing direct mortality, roads can have a number of indirect impacts such as habitat fragmentation. When roads create barriers to movement they can impact animal populations in many ways. Animals may also suffer by not being able to access particular habitats. When a road runs through a forest, it creates an edge habitat along the portion of the forest that fringes the road. Forests fragmented by edges additionally suffer changes in ecological and ecosystem process such as pollination, seed dispersal, and carbon storage. Such forests are susceptible to soil erosion and landslides, degrading soil quality, and depleting aquatic reservoirs and water catchments of rivers.

3. Pollution

Roads can also be a conduit for pollutants into the environment. Pollution from roads extends beyond just chemicals, as light and noise pollution from roads can be detrimental as well. Noise from cars can impact birds by disrupting acoustic communication and interfering with warning signals, leading to bird population declines in the proximity of roads.

When land is cleared for roads, it often facilitates the spread of invasive species.

4. Increase in illegal activities

Roads make otherwise inaccessible habitats easily reachable. Consequently, increased human settlement and fractal increases in networks of secondary roads can in turn increase illegal activities like poaching or logging, especially in regions where monitoring or enforcement is inadequate or absent.

Human wildlife Conflict in India

Human wildlife Conflict is one of the major threat to Indian wildlife, human activities such as deforestation, Habitat loss, Lack of prey and illegal roads cut through forest are threaten the safety and survival of wildlife in India.

Many wild animals have been killed due to road accidents and speeding vehicles passes through the wildlife protected area. Big animals like sloth bears, striped hyena, blue bull and small creatures such as snakes, monitor lizards and Jackal are getting endangered due to road kill. Other than road kill, wild animals have to also deal with speeding trains, human wild animal interaction and brutal and insensitive animal torture by the villagers. Few of the worst incidents in India are six elephants run over by speeding train in Odisha, speeding train kills six elephants in West Bengal.

Recently losing a charismatic tiger in its prime to a hit-and-run accident is an irony, given that it is one of the most protected species. Successive Prime Ministers have personally monitored its status. Yet, the fate of the big cat, and that of so many other animals that end up as road kill, highlights the contradictions in development policy. The Centre and the National Highways Authority of India have been repeatedly advised by the National Board for Wildlife, as well as independent researchers, to realign or modify sensitive roads.

❖ **Mitigation**

- A number of mitigation strategies have been developed to decrease the harmful impacts of roads on wildlife.
- In cases where patterns of mortality are predictable during certain times of the year, road closures or speed limit reductions during these times may decrease mortality rates.
- Decreasing traffic volume is not likely to be effective when animals avoid the physical surface of the road. In such cases, constructing alternative ways like combination of realignment and creation of long underpasses of crossing the road can be more successful.
- An assessment by the Wildlife Institute of India states that tigers in at least 26 reserves face the destructive impact of roads and traffic. The National Tiger Conservation Authority should insist on modification of existing roads to provide crossings for animals at locations identified in various studies.
- A more robust approach would be to realign the roads away from all such landscapes.
- Users can be asked to pay a small price for the protection of vital environmental features, and more areas for nature tourism can also raise revenues.
- This would ensure that tigers and other animals are not isolated, and can disperse strong genetic traits to other populations.

✚ **The road to sustainable development**

For all this to be efficiently implemented, it is important that government officials, ecologists, conservationists, and engineers have productive discussions to arrive at win-win solutions.

In one well-studied case of two populations of breeding tigers in the **Kanha-Pench corridor**, which also forms part of the sensitive central Indian belt, scientists commissioned by the Environment Ministry found that a national highway could block flow of genes between regions. The remedy suggested was a combination of realignment and creation of long underpasses for animal movement.

✚ That is the sustainable way forward, and the Centre should order the modifications without delay wherever they are needed.

✚ It would be consistent with the Wildlife Action Plan 2002-2016. Also, curbs should be imposed on traffic on existing roads passing through sanctuaries.

✚ This can be done using speed restraints and by allowing only escorted convoys, **with restrictions on private vehicular movement at night.**

We can pioneer new development models where environmental sustainability and wildlife conservation are given as much credence as economic growth. Building a culture of ecological sensitivity will allow for sustainable use of natural resources and help keep spaces for biodiversity.