

Urgent Action Needed!

National Highway through Sathyamangalam Wildlife Sanctuary is a death trap for animals

Locations suggested for speed control to reduce wildlife road kills



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Effective speed control measures to reduce wildlife road kills needed immediately as per locations suggested

Summary :

The National Highway (NH209) passing through Sathyamangalam Wildlife Sanctuary poses a grave threat to wildlife.

The extent of the road within the sanctuary is about 28km. The existing speed control measures on this stretch are very sparse and inadequate.

We did a rapid survey of the entire stretch of the road and identified crucial locations where Rumble-Strips can be commissioned.

In total, we identified 20 locations within the 28km stretch of the road that runs through the Sanctuary for the installation of Rumble-Strips.

The stretch of the road from the outskirts of Hasanur village to the Karnataka-TamilNadu border in Pununjuru is very vulnerable to road-kills of wildlife. This stretch is mostly flat and, consequently, over-speeding by vehicles is common. To make matters worse, this stretch of road is juxtaposed with Arakadavu stream, a major water source for wildlife during the dry season, with very high wildlife movement.

We believe that well marked 'Rumble-Strips' will be far more effective for speed control than either 'Speed-Humps' or movable metal barricades.

Introduction

National Highway NH 209 bisecting Sathyamangalam Wildlife Sanctuary in Tamil Nadu is a 'death trap' for wildlife large and small. If urgent mitigation measures are not put in place, thousands of animals including endangered species will continue to die needlessly. This report, based on careful observation, suggests exact locations where speed control measures are absolutely essential.

Sathyamangalam Forest Division (SFD) is one of the most important sites in south India for landscape-level, long-term conservation of endangered mega fauna such as tigers and elephants. Besides large mammals, the mosaic of diverse vegetation types of SFD supports rich biodiversity and also serves as an important catchment area for numerous streams that foster major rivers such as the *Bhavani* and *Moyar*, which provide succor to the parched plains of Erode and Karur Districts. Considering the potential of SFD in biodiversity conservation, the state government notified a portion of the division, comprising the lower plains, as a

wildlife sanctuary during 2008 (Anon, 2008). Subsequently, the extent of the sanctuary was increased.



Sathyamangalam Wildlife Sanctuary (SWLS) is wedged in the middle of an important tiger landscape in the country, bounded by Mudumalai, Bandipur and Biligirirangan Hills Temple Tiger Reserves. Jhala *et al.*, (2011) have suggested that SWLS holds a sizeable breeding tiger population. Therefore, to fortify tiger conservation efforts in the landscape, SWLS was notified as a Tiger Reserve during the year 2013 (Anon1, 2013). Sathyamangalam is also part of Elephant Reserve-7 (Rangarajan *et al.*, 2010) that straddles both Eastern and Western Ghats and supports the largest population of Asian elephants in the world (Sukumar, 2003).

One of the major threats that seriously undermines conservation efforts in SWLS is the National Highway (NH 209) that runs through the heart of the sanctuary (and tiger reserve). This highway connects the cities of Mysore in Karnataka and Coimbatore in Tamil Nadu. Both Mysore and Coimbatore are experiencing massive urbanization and, as a consequence, the road traffic on this highway has increased manifold during the last few years.

Roads: A major threat to biodiversity

A large body of empirical work across the world clearly demonstrates the perilous impacts of major roads on biodiversity (see Laurance *et al.*, 2009 for review). Major roads passing through forests cause irreversible physical disturbances to the forest, and act as barriers to flora and fauna, curtailing free physical movement and even genetic flow. Roads also have other undesirable deleterious consequences to forest ecology such as weed proliferation, biotic pressure due to littering and others. One of the serious direct threats posed by roads to conservation is wildlife mortality as a result of collisions with speeding vehicles.

Numerous studies from India have demonstrated the ill effects of major roads on survival prospects of wildlife belonging to various taxonomical orders (Das *et al.*, 2007; Seshadri *et al.*, 2009, Baskaran and Boominathan, 2010). It is increasingly recognized that road kills even overwhelm the effects of poaching in driving many wildlife species to extinction. Incessant traffic through wildlife habitats can also adversely modify animal behavior as demonstrated in a study on elephants in Mudumalai National Park (Vidya & Thuppil, 2010).

Realizing the perilous impact of roads on conservation, there is renewed emphasis, especially in developed countries, on design and realignment of roads to reduce wildlife road kills. In recognition of the growing threats that roads and other linear intrusions pose to wildlife conservation in India, the National Board for Wildlife (NBWL), under the Ministry of Environment and Forests (MoEF) prepared a comprehensive background paper and guidelines regarding commissioning, maintaining and realigning linear intrusions such as the roads in wildlife areas (Raman *et al.*, 2011; MoEF, 2011). Furthermore, the emphasis for securing wildlife from adverse impacts of roads was clearly articulated in the National Wildlife Action Plan – 2002-2016.

Perilous highway passing through Sathyamangalam Wildlife Sanctuary

National Highway 209 cuts through the core of Sathyamangalam Wildlife Sanctuary for about ~28kms, between Puthuvadvalli and Pununjur at the Tamil Nadu-Karnataka interstate boundary (*Map-1*). The altitude at which the road passes through the sanctuary ranges from 400m to 1100m.



Map-1: Sathyamangalam wildlife division. National Highway 209 passing through the division

Although systematic data on wildlife road-kills for Sathyamagalam do not exist, our empirical evidence from working in the landscape for the last five years clearly indicates that road-kills of wildlife in the reserve are high, and on the rise in the wake of increased traffic and speed of vehicles. During a one-day assessment in 2012, Sathyamangalam Environment and Wildlife Association (SEWA), a local conservation NGO, found 2800 vehicles passing through NH209. They observed that the traffic was uniformly heavy throughout the day (SEWA, 2012). It is rational to assume that the number of vehicles plying through this stretch will only increase with time.

Existing mitigating measures:

During 2012, in order to inspect road-widening in MDR M180 (connecting Hasanur and Kollegal) that passes through Sathyamangalam wildlife sanctuary, the Central Empowered

Committee (CEC) constituted by the Hon'ble Supreme Court visited the sanctuary along with divisional forest officials including the Conservator of Forests, Erode Circle and District Forest Officer, Sathyamangalam Wildlife Sanctuary. The CEC members expressed their concern about the threat posed by the National Highway to the wildlife of Sathyamangalam forests. The members, including the chairperson, suggested that some urgent mitigation measures were required on NH209.

In response to the suggestions of the CEC, and taking stock of increased road kills on the highway, the Tamil Nadu Forest Department installed few mobile barricades on some stretches (only in the plains) of NH 209 where frequent road kills had been reported.

However, these mobile barricades did not do much to slow down vehicles and, too often, they were moved apart by frequent road users. Even heavy motor vehicles such as trucks and buses were able to speed through the barricades. The barricades seem to be effective only when two or more vehicles approach from either side. Therefore, permanent speed breakers, in the form of Rumble-Strips, which are more effective than Speed Humps, are absolutely essential, until such time that vehicle overpasses can be constructed over critical stretches of the Highway where wildlife crossings are most frequent.

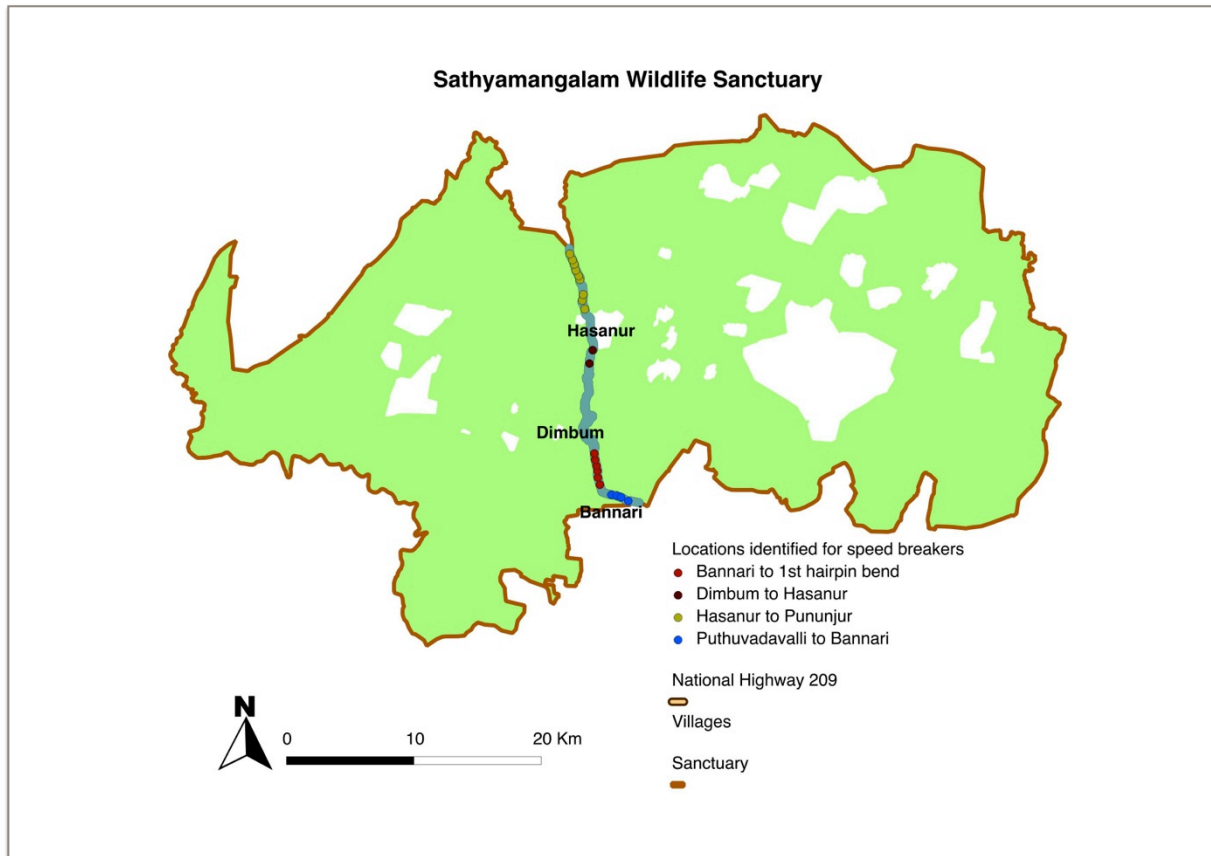


Pic-2: Remains of Small Indian Civet, a nocturnal carnivore, killed on NH209 passing through Sathyamangalam Wildlife Sanctuary

Suggested locations for mitigation measures:

Based on our rapid qualitative assessment of the entire stretch of road from Pudukadalli gate to Punujur inter-state border during November 2014, we recommend installation of Rumble-Strips at specific locations identified for the purpose. We divided the entire stretch of NH 209 passing through the division into five in order to provide stretch-wise GPS locations for installing **Rumble-Strips**.

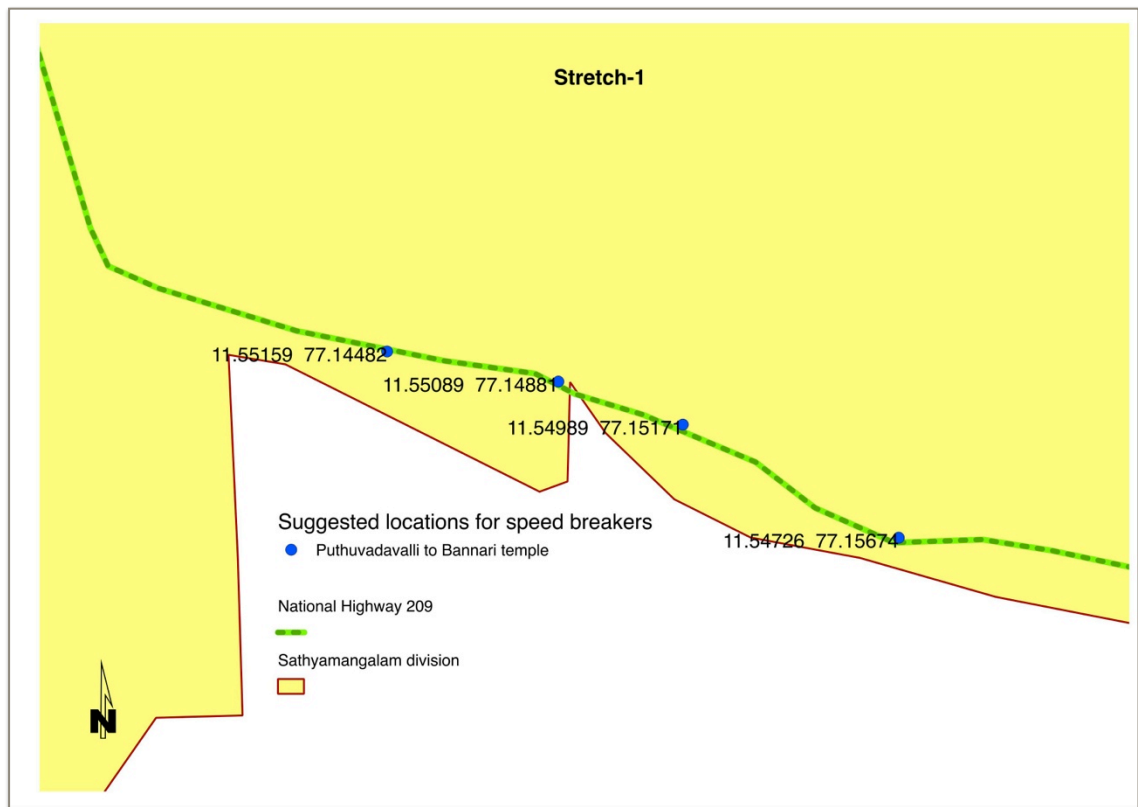
The stretch-wise GPS locations are provided in maps 3, 4, 5 and 6:



Map-2: Sathyamangalam wildlife division. National Highway 209 passing through the division

1) Puthuvadavalli to Bannari temple:

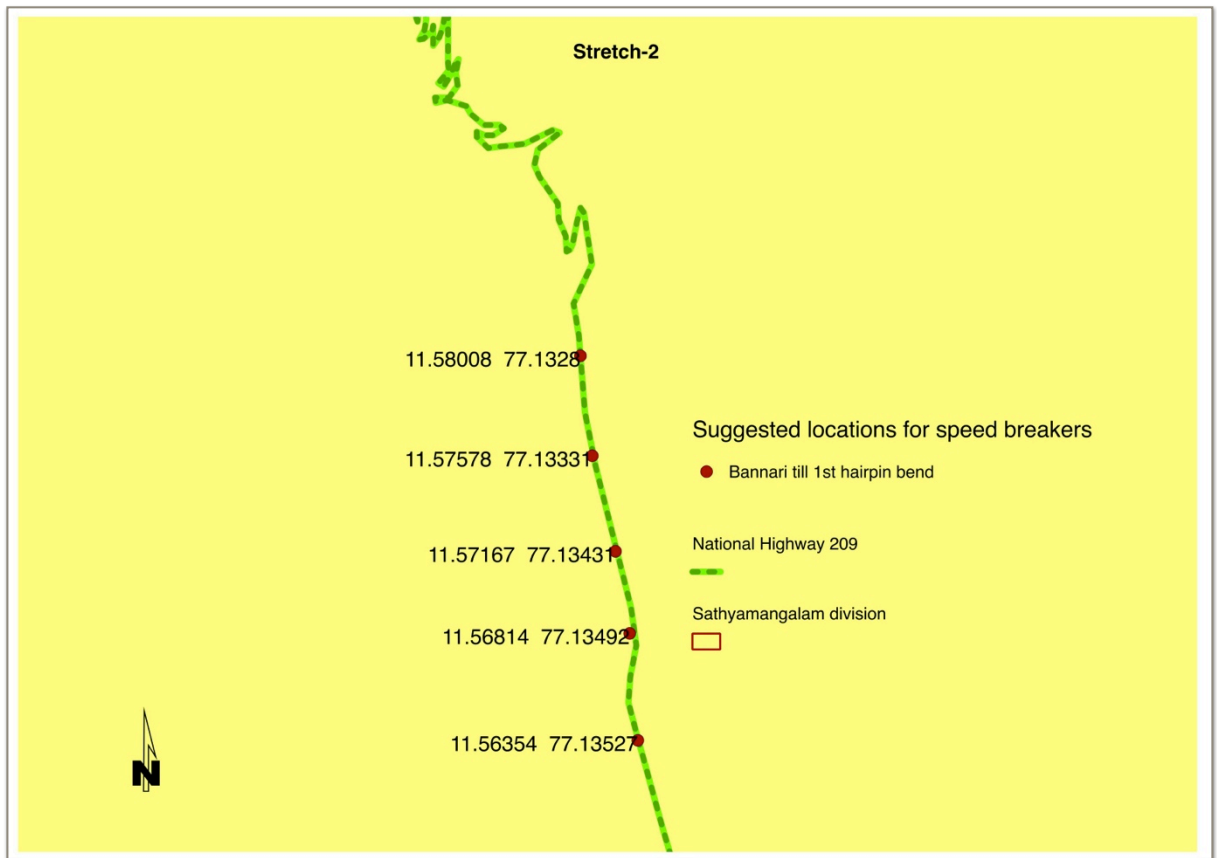
- The vegetation type in this stretch is largely scrub with dense undergrowth
- The stretch of the road is mostly straight and flat. Therefore, the speed of the vehicles is very high
- Traffic is usually high during the day and increases significantly during night
- **At this juncture we recommend speed breakers only in the stretch between Puthukuyyanur road diversion till Bannari temple.**
- Elephant and chital use this stretch of road intensively as there is a perennial source of water close to the Forest Department's ecological farm, which is close to the road.
- The exact locations where Rumble-Strip speed breakers may be installed are provided in Map:3



Map-3: Suggested speed breaker locations in the stretch between Puthuvadavalli and Bannari temple

2) Bannari temple to beginning of ghat section (near 1st hairpin bend):

- The vegetation type in this stretch is largely scrub with dense undergrowth
- It is a crucial stretch of forest that is intensively used by wild animals
- The road is located very close to Bannari-Sujjilkuttai elephant corridor (WTI, 2005) and elephants use this stretch very intensively for their movement in the larger landscape (Ramakrishnan & Ramkumar, 2007)
- This stretch of the road is mostly straight and flat. Therefore, the speed of the vehicles is very high
- Over the years, numerous road kills have happened in this stretch
- Forest department has placed barricades in four locations in this stretch of the road. We observed that barricades did not help slow down vehicles
- The exact locations where Rumble-Strip speed breakers may be installed are provided in Map-4



Map-4: Suggested speed breaker locations in the stretch between Bannari up to 1st hairpin bend



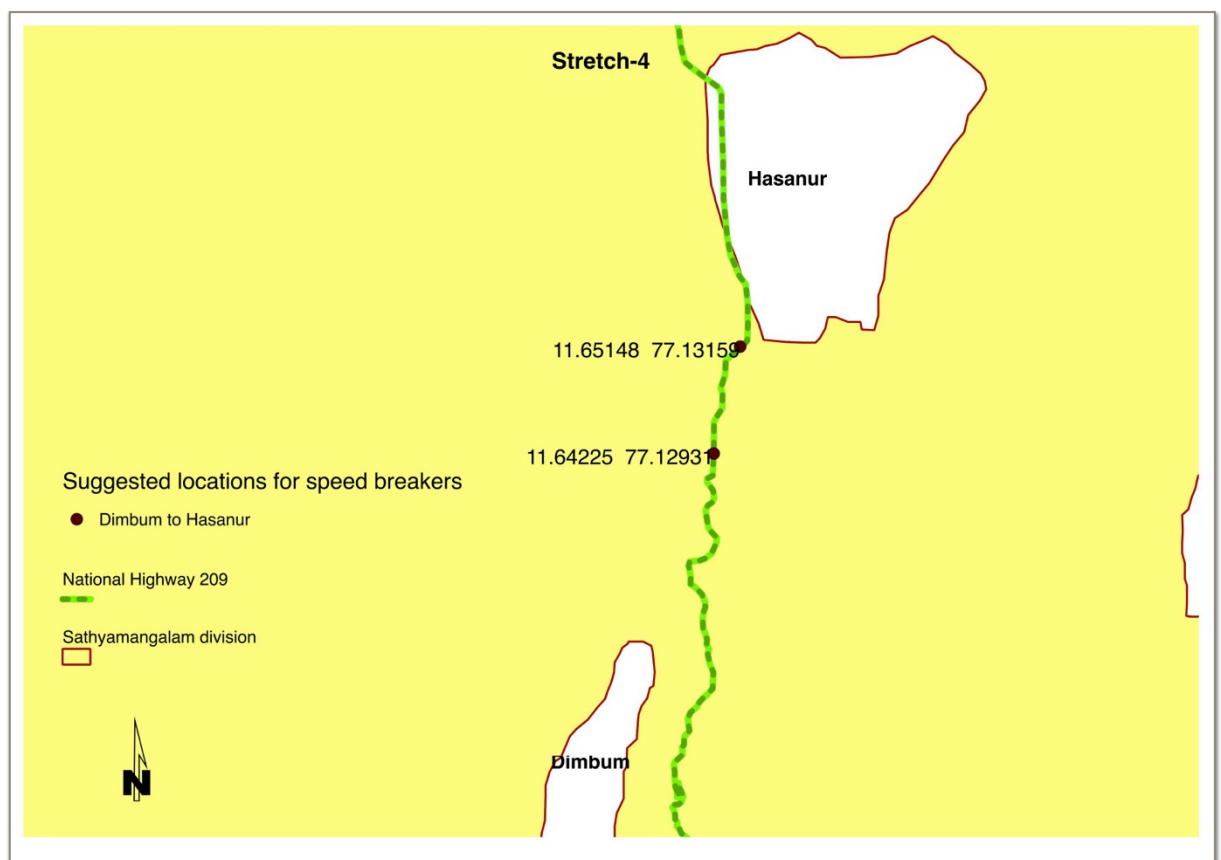
Pic-3: A sloth bear that was run over by an unknown vehicle during the year 2011

3) Ghat section from 1st hairpin bend till Dimbam

- ☐ The vegetation type in this stretch ranges from scrub in the plains to dry deciduous as we ascend.
- ☐ There are 27 hairpin bends in this stretch of road
- ☐ The gradient itself imposes constraints on the speed of the vehicles
- ☐ Though road kills in the entire stretch are not uncommon, detailed assessment is required for suggesting speed control measures in this stretch. **Therefore, we are not recommending any speed control measures in this stretch at this juncture.**

4) Dimbam to Hasanur check post (close to District Forest Office)

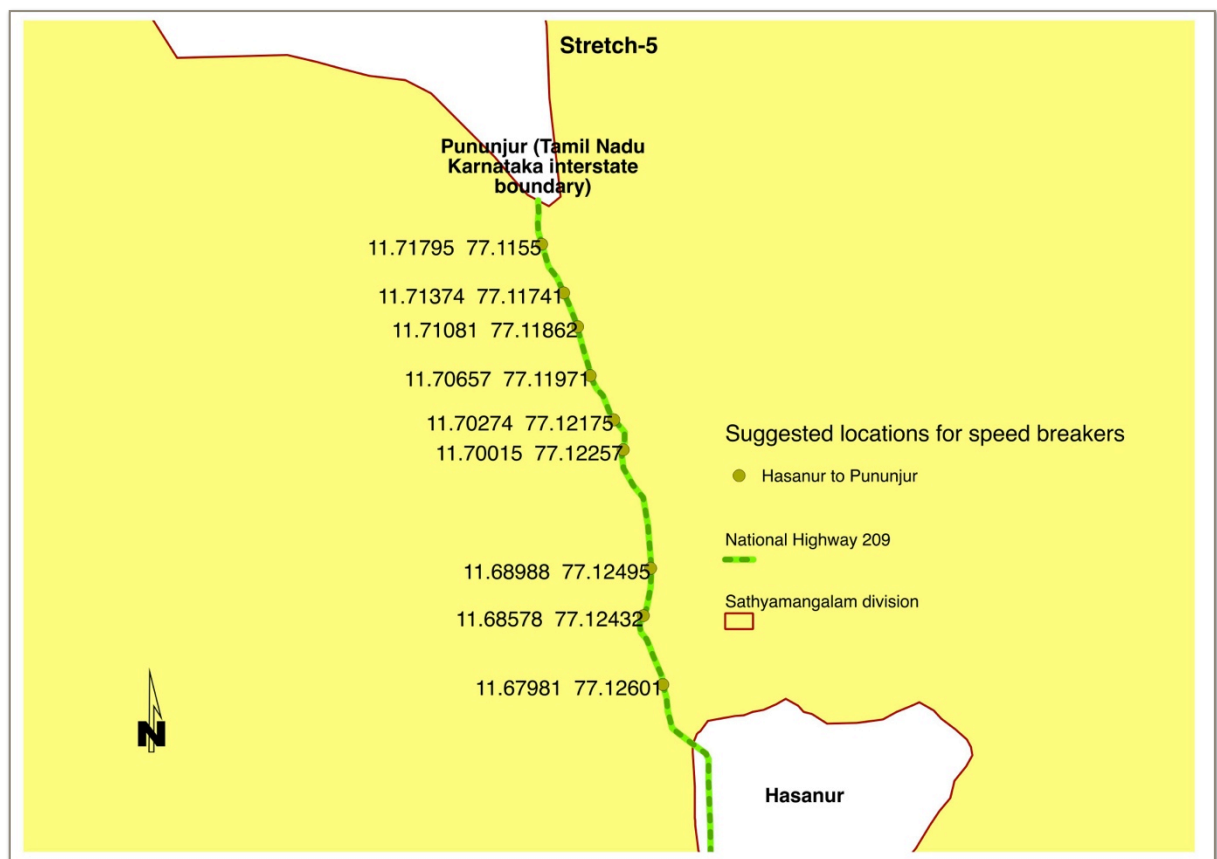
- ☐ The vegetation type in this stretch is mixed deciduous forests with rank growth of invasive plants like *Lantana camara* in the understorey. There is profuse growth of bamboo (*Bambusa arundinacea*) on either side of the road
- ☐ Elephants use this stretch very intensively all through the year. Numerous elephant trails criss-cross the road
- ☐ Some stretches of road are flat and straight where vehicles ply at enormous speed.
- ☐ Because of dense vegetation on either side of the road, visibility of animals grazing alongside the road is often obscured. This is even more so during misty weather conditions
- ☐ The exact locations where speed breakers may be commissioned are provided in map:5



Map-5: Speed breaker locations in the stretch between Dimbam and Hasanur

5) Hasanur to Pununjur inter-state boundary:

- The vegetation type in this stretch is mixed deciduous forests with thick growth of invasive plants like *Lantana camara* in the understorey. There is profuse growth of bamboo (*Bambusa arundinacea*) on either side of the road.
- There are lot of grassy meadows on either side of the road that wild herbivores such as chital and gaur intensively use.
- **Arakadavu halla, a large stream that is usually perennial flows very close to the road in the entire stretch. This stream is a major source of water for wildlife, and hence wild animals use this stretch very intensively. Numerous gullies that drain into Arakadavu halla bisect through the road. The stream becomes a nerve center of activity for wild animals especially during dry season.**
- This stretch of the road is mostly flat, narrow and straight and hence vehicles ply at enormous speed
- Because of dense vegetation on either side of the road, visibility of animals grazing alongside the road is often obscured. This is particularly so during misty weather conditions
- It is pertinent to note that an adult elephant was mowed down in this stretch by a speeding bus (Pic:3)
- The exact locations where speed breakers may be commissioned are provided in map:6



Map-6: Suggested speed breaker locations in the stretch between Hasanur and Pununjur (inter-state boundary)

Further suggestions:

1) Anecdotal evidence suggests that road kill incidences are particularly high during the night. We have recorded road kills of numerous nocturnal creatures such as civets, owls, many species of snakes and others. Drawing from the directions of hon'ble High Court of various states and even the Supreme Court with regard to other Protected Areas, the long-lasting remedy for the wildlife of Sathyamangalam Wildlife Sanctuary would be **suspension of traffic during night hours.**

2) Prominent sign boards showing reduced speed limits, boards and road markings alerting drivers about impending speed breakers, and pictures of road-kills in selected locations, as done in Mudumalai National Park, can help. It is pertinent to note that the Forest Department has already taken up some of this, although more needs to be done.



Pic-5 (top) & Pic-6 (bottom): Common langur and baby palm civet killed by speeding vehicles

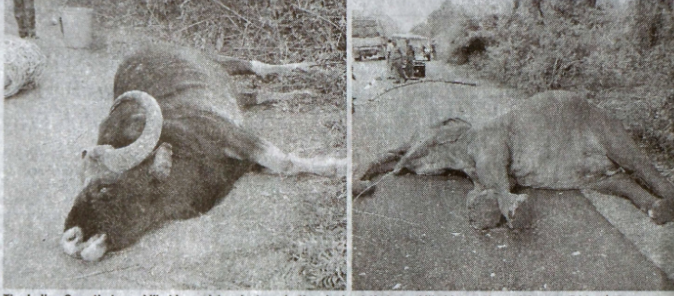


Pic-7, 8 (top) and 9 (bottom): Bonnet monkey, Chameleon and Spotted dove killed by speeding vehicles



Some news reports on road kills in Sathyamangalam Wildlife Sanctuary

Animal Killings on NH Put Forest Dept in a Fix



The Indian Gaur that was killed in a mishap last week; the elephant that was killed in another mishap on Friday | Express

Express News Service

Coimbatore: The fauna-rich Sathyamangalam forest has witnessed two casualties in the past one week. Two Schedule-1 animals - a 20-year-old female wild elephant and an Indian Gaur, have been killed on the Hassanur-Mysore National Highway 209 after being hit by speeding heavy vehicles.

The elephant was mowed down by a Karnataka State Road Transport Corporation (KSRTC) bus which was bound for Mysore from Coimbatore. The elephant was hidden from view as it was behind the bamboo bushes and was crossing the road to reach a pond.

Earlier in an accident on January 21, an Indian Gaur succumbed to injuries after it was hit by a speeding Bolero jeep at the Hassanur-Thalavadi route around the same region.

Environmentalists say these are not isolated cases in the Sathyamangalam forest in Erode, once a den of brigand Veerappan, is a habitat to scores of gaurs and elephants.

"Around two months ago, a leopard was killed in an accident. At least four mammals including a Gray Langur had met a gory end in recent times. These deaths are alarming and could be taken as a warning signal to a dangerous trend as soon there are plans to convert the Sathyamangalam forest into a tiger reserve," a wild life activist said.

As per Wildlife Protection Act, 1972, any incidents involving Schedule-1 animals should be booked by the Forest Department and the offender should be remanded in custody.

No private justice is permitted by the officials under the law for Schedule-1 ani-

mals, irrespective of the place of the incident. Moreover, compounding the case by imposing spot fine to the offender is also not permitted by law.

However, according to sources, cases have not been booked for both the above-mentioned incidents. "For the first incident involving the death of an adult gaur, no case was booked and the accused was not arrested. In the incident involving the elephant, too nothing has moved yet. This clearly violates the Wildlife Protection Act, 1972, putting wildlife of the region at a great risk," said a wildlife conservationist on the condition of anonymity.

Wildlife activist N Lakshminarayanan of Wildlife Conservation Society says, "The incidents reinstate the urgent need to install speed controllers on this Highway. NHAI cannot continue being

apathetic of increasing gruesome deaths on the road, threatening the very existence of wildlife of the region. Since most of the road kills take place during the night, it is imperative to stop road traffic at least for a few hours during the night."

However, when contacted, Sathyamangalam District Forest Officer N Satheesh said, "Both the cases do not violate the Wildlife Protection Act. In the case of the gaur's death the animal had rammed into the Bolero meeting its unfortunate end. Even the bus which hit the elephant was being driven with the permissible speed limit. The animal was hidden from the visibility range behind the bamboo shoots. The carcass remains would have been scattered around the spot if the bus would have been over-speeding. However, nothing of that sort was found here," he said.

வாகனம் மோதி 2 மான்கள் பலி

சத்தியமங்கலம், டிச. 6: சத்தியமங்கலம் - கோவை நெடுஞ் சாலையில் விண்ணப்பள்ளி அருகே அரசு மறுவாழ்வு இல்லம் முன்பு 2 புள்ளி மான்கள், அடையாளம் தெரியாத வாகனம் மோதி இறந்து கிடந்தன. இது குறித்து அப்பகுதி மக்கள் பவானிசாகர் சரகர் பெர்னாட்டிற்குத் தகவல் கொடுத்தனர். இதனையடுத்து வனவர் நடராஜ், வன காப்பாளர் கருப்புசாமி, வேட்டை தடுப்பு காவலர் செந்தில், புங்கம்பள்ளி கால்நடை மருத்துவர் சரவணகுமார் ஆகியோர் விசாரித்து சென்று பார்வையிட்டனர். 2 மான்களும் பிரேத பரிசோதனை செய்யப்பட்டு, அதே பகுதியில் உடல்கள் அடக்கம் செய்யப்பட்டன. மோதிய வாகனத்தை வனத்துறையினர் தேடி வருகின்றனர்.



சத்தியமங்கலம் அருகே விண்ணப்பள்ளி அரசு மறுவாழ்வு இல்லம் அருகில் அடையாளம் தெரியாத வாகனம் மோதி இறந்த மான்கள்.

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References:

- Baskaran, N., & Bhoominathan, D. (2010). Road Kill of Animals by Highway Traffic in the Tropical Forests of Mudumalai Tiger Reserve, Southern India. *Journal of Threatened Taxa*, 2(753-759).
- Das, A., Ahmed, M. F., Lahkar, B. P., & Sharma, P. (2007). A Preliminary Report Of Reptilian Mortality On Road Due To Vehicular Movements Near Kaziranga National Park, Assam , India. *Zoos Print Journal*, 22(April), 2742–2744.
- Jhala, Y. V., Qureshi, Q., Gopal, R., & Sinha, P. R. (2010). *Status of tigers , co-predators and prey in India , 2010*.
- Laurance, W. F., Goosem, M., & Laurance, S. G. W. (2009). Impacts of roads and linear clearings on tropical forests. *Trends in Ecology & Evolution*, 24(12), 659–69.
- Menon, V., Tiwari, S. K., Easa, P. S., & Sukumar, R. (2005). *Right of Passage: Elephant corridors of India*.
- National Board for Wildlife, M. (2011). *Guidelines for linear infrastructure intrusions in natural areas : roads and powerlines*.
- Ramakrishnan, B., & Ramkumar, K. (2007). *Land acquisition perspectives of vital elephant corridors in Coimbatore and Sathyamangalam Forest Divisions, Tamil Nadu, South India*.
- Raman, T. R. S. (2011). *Framing ecologically sound policy on linear intrusions affecting wildlife habitats: Background paper for the National Board for Wildlife*.
- Rangarajan, M., Desai, A., Sukumar, R., Easa, P. S., Menon, V., Vincent, S., Prasad, A. N. (2010). *Gajah: Securing the future for elephants in India*.
- Seshadri, K. S., Yadav, A., & Gururaja, K. V. (2009). Road kills of amphibians in different land use areas from Sharavathi river basin, central Western Ghats , India. *Journal of Threatened Taxa*, 1–5
- Sathyamangalam Wildlife and Environment Association (2012): Representation letter
- Sukumar, R. (2003). *The Living Elephants*. Oxford University Press
- TamilNadu, Government. Declaration of Sathyamangalam as wildlife sanctuary under Wildlife (Protection) Act, 1972 (2008).
- TamilNadu, Government. Declaration of Sathyamangalam Wildlife Sanctuary as a Tiger Reserve as per Wildlife (Protection) Act, 1972 (2013).
- Vidya, T. N. C., & Thuppil, V. (2010). Immediate behavioural responses of humans and Asian elephants in the context of road traffic in southern India. *Biological Conservation*, 143(8), 1891–1900.