

ENVIRONMENT

Technology to the rescue of elephants

Akila Kannadasan

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On an inky black night, an elephant sets out to cross a railway track along a forest path. She has no idea of the train hurtling at a speed of over 80 km/hr towards her. The loco pilot, eyes on the nothingness ahead, suddenly notices lights along the track. The alarms in his head go off and he slows the train down. The lights mean only one thing: elephant movement on the tracks. He presses the horn several

times and the elephant disappears into the forest long before she sees the train. This is an imaginary scenario, one that will hopefully play out in the near future.

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The three elephants – a tuskless male (*makhna*), a female, and a calf – that were run over by a Chennai-bound train on November 26 near Walayar in Coimbatore did not have such a system in place to save them. M Abraham Antony, a Coimbatore-based conservation photographer, rushed to the spot as soon as he heard of the accident. “I spoke to people who lived nearby who recalled what happened,” he says. “The calf was playful and positioned itself on the track. The *makhna* stood next to it and the mother was trying to get the baby to move.”

Strategy and solutions

How can such tragedies be averted? “A lot is in the hands of the loco pilot,” points out M Ananda Kumar, a scientist at Nature Conservation Foundation, a wildlife research and conservation trust based in Mysore. “He has to be sensitised about the areas he drives through and remember to slow down at stretches along elephant habitats,” he adds. Reducing the speed of a train which has multiple bogies attached to it might not be an easy task, given that it travels across multiple landscapes and elevations.

In memoriam

- To elephants were killed when they collided sideways with the engine of Rajdhani Express near Jagiroad, Assam, on November 30. Villagers nearby paid their last tributes to the elephants by lighting incense sticks.

A solution is to employ sensors that trigger lights along train tracks. “Loco pilots respond involuntarily to lights,” points out Ananda. “A system in which lights warn them of elephant movement will help them slow down and will possibly mitigate elephant deaths on tracks,” he says, adding, “The Railways and Forest Department should work with local NGOs and people to come up with such a system.”

Ananda Kumar suggests that orange lights, for instance, be used for the purpose, in case red and green interrupt the railways’ signalling system. “We can have a one kilometre buffer for the loco pilot to get an intimation,” says Ananda. “We have engineers willing to cooperate to work on this sensor-based monitoring system that has the potential to save lives,” he explains, adding, “We cannot drive away elephants, but we can effectively use technology to reduce deaths on railway tracks. All that is needed is the right frame of mind to find a solution to the issue.”

A villager feels the tusk of a dead elephant which was hit by a train in Moinajan village in Kamrup (Metro) district of Assam | Photo Credit: **RITU RAJ KONWAR**

Two years ago, a project on similar lines was attempted at Rajaji National Park. Says Bivash Pandav, Director, Bombay Natural History Society: “The Wildlife Institute of India and Central Scientific Instruments Organisation carried out a pilot project deploying seismic sensors to warn loco pilots of elephant movement on railway tracks.” The study was successful, he points out. “The next phase of the project, that is, on how to transmit this signal to the loco pilot, is yet to be carried out,” he explains.

Ideally, says Bivash, roads and railway lines should not cut through elephant habitats. But the already existing ones cannot be undone, and measures to reduce

man-animal conflict are the need of the hour. Alongside such technology, he feels that a strong team should monitor elephant movement at sensitive areas.

Meanwhile in Coimbatore, rail fences at stretches along the track between Kanjikode and Madukkarai to prevent elephant crossing, clearing of vegetation for better visibility of loco pilots, construction of elephant ramps to facilitate safer movement, are on the cards.

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