Drawing: Pathum Piyumal

Human-Elephant Conflict with Reference to Mahaweli System C

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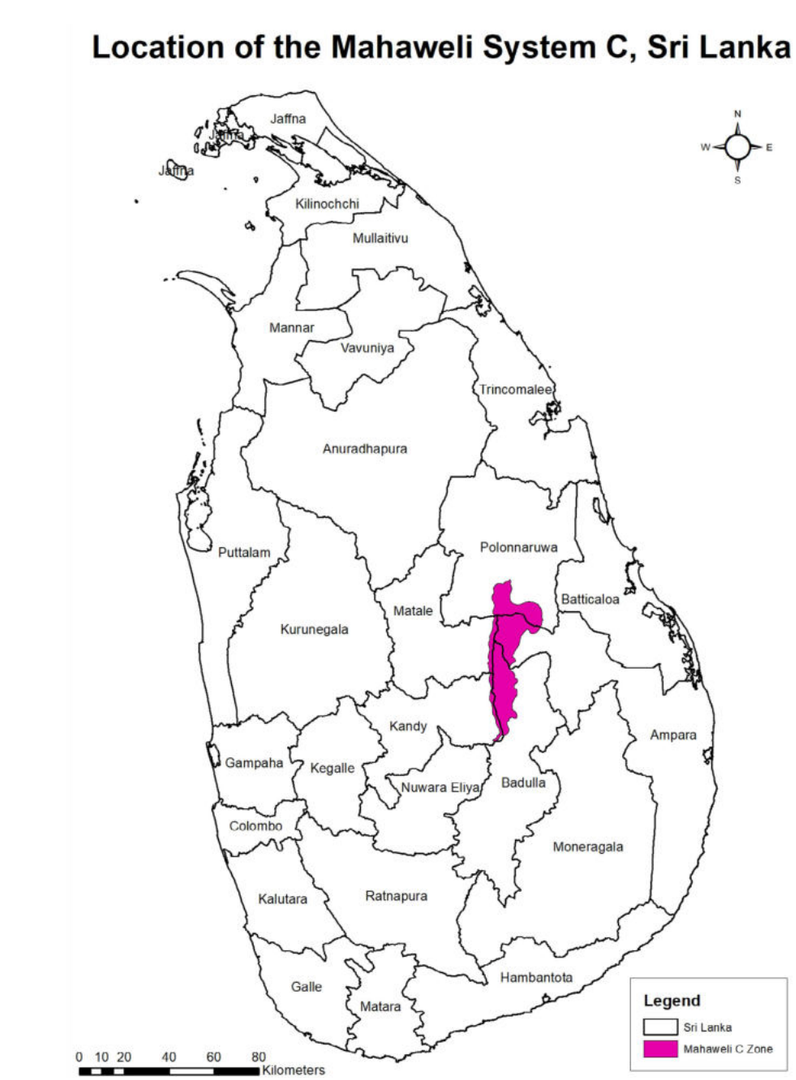
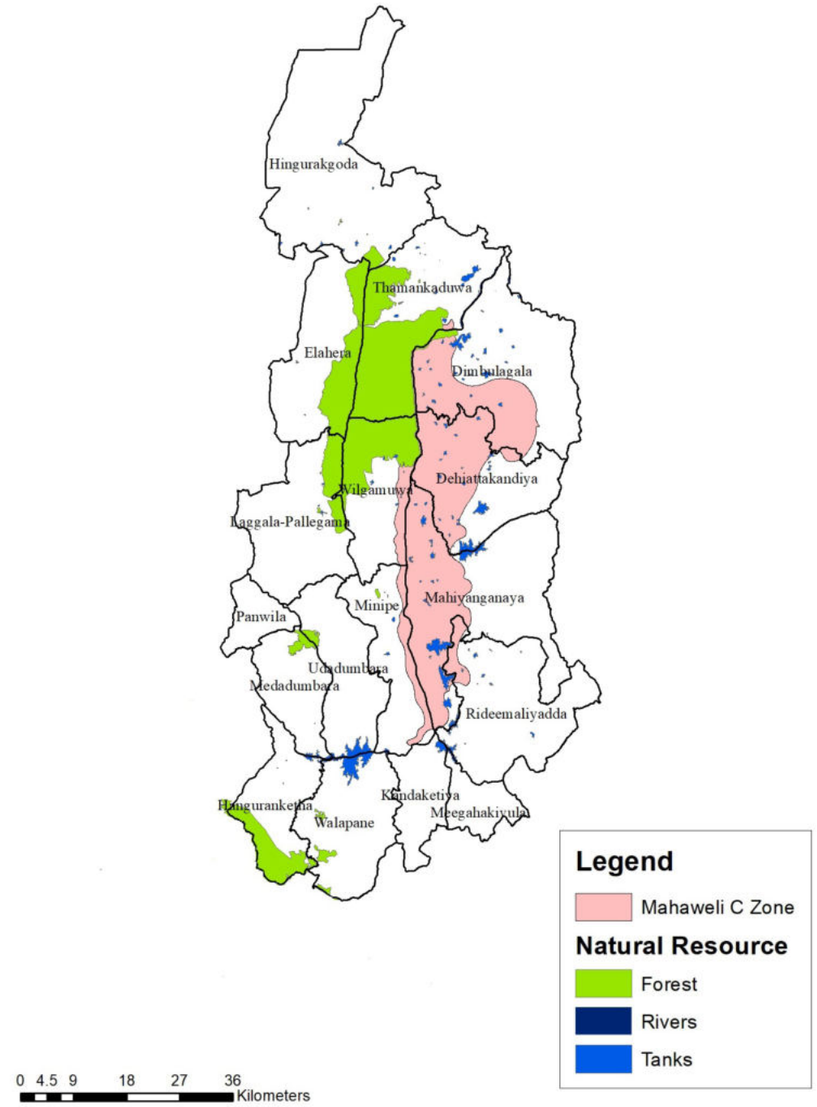
There is a strong cultural bond between the Sri Lankan people and elephants that dates back more than 5,000 years. Domesticated elephants were used in religious activities, transportation, constructions and even in warfare. Even though, there were no records of any conflicts between humans and wild elephants in the past, with the implementation of the accelerated Mahaweli project in 1978, human-elephant conflict (HEC) in dry-zone of Sri Lanka became a major issue. In Sri Lanka, the HEC can be demonstrated to be a social problem because it possesses nearly all the defining characteristics of a social problem. Consequently, this conflict has direct and indirect effects on society and the environment. Both humans and elephants have lost their freedom to live.

From an ecological perspective, elephants are considered to be a 'keystone species' in the ecosystems they inhabit, as they maintain the vegetation structure and biodiversity. They also play a role as an 'umbrella species'. Thus conservation of elephants will automatically ensure the conservation of other species that co-exist in the same habitat. However, a review of Sri Lanka's recent past demonstrates that the expanding human population and diminishing forest cover provide a systematic threat to the survival of elephants. Further, Sri Lankan governments' agrarian economic policies have contributed significantly to the destruction of elephant habitat and their ancient wilderness, as well as the escalation of human-elephant conflict.



According to the scientific literature, the seven most prevalent causal explanations for HEC were identified. It is important to note that some of these ideal categories are not mutually exclusive.

1. Colonial legacy as a historical cause
2. Poaching
3. Population growth and habitat loss
4. Crop raiding and socio-economic grievances
5. Problem elephants
6. Agriculture modernization – failed cohabita tion
7. Neoliberal conservation and social justice



Distribution Pattern of Elephants in Mahaweli System C

The Asian elephant is considered one of the world's few remaining big herbivores. The Sri Lankan elephant, *Elephas Maximus Maximus*, is the largest of the four subspecies of Asian elephants. In terms of elephant distribution in Sri Lanka, the Mahaweli wildlife region recorded the largest number of elephant sightings compared to the other five wildlife regions. 29.8% of all elephants spotted in Sri Lanka have been documented in the Mahaweli region. In the meantime, 13.1% of tuskers and 243 places where elephants were observed were recorded in the Mahaweli region. The entire Mahaweli region is within the elephant's range and habitat and has a high conservation potential. In the Mahaweli C region, the elephant reserve is quite large and mostly made up of the two forest divisions of Wasgamuwa National Park and Maduru Oya National Park.

Considering the elephant corridors in the Mahaweli, there are two elephant corridors within the Mahaweli C system, the Ulhitiya corridor, which connects Maduru Oya National Park to Wasgamuwa National Park, and the Hungamalaoya corridor, which connects Maduru Oya National Park to Flood Plain National Park. These two elephant pathways in the Mahaweli C system are currently inoperable due to human settlements and developments in these protected regions. Additionally, electric fences were installed along these elephant pathways to reduce human-elephant conflict. There is an electric fence in the Mahaweli C region. This 62-kilometre-long electric fence prevents elephant migration between Maduru Oya National Park, Wasgamuwa National Park, and Flood Plain National Park.

> An animal corridor is a relatively narrow strip of habitat which allow animals to migrate between two larger habitats. Corridors are essential for migration of animals between isolated populations, promiting incresed, genetic diversity to maintain viable populations.

Graphic design: Pathum Piyumal

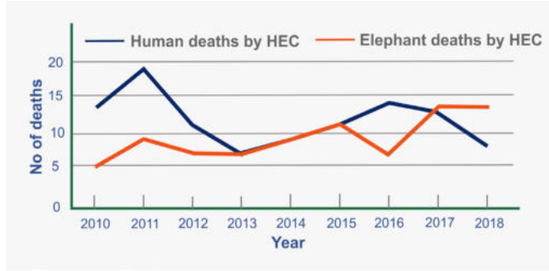
Human-Elephant Conflict (HEC) in the Mahaweli System C

Three most HEC-vulnerable patches in the Mahaweli C system have been identified through the geographical distribution analysis. These spotted areas encompass Nuwaragala, Giradurukotte, and Henanigala. The Hungamala Oya and Ulhitiya elephant routes are currently closed by electric fencing in Nuwaragala and Giradurkotte, two of the three selected sites. According to the evidence that the conflict between people and elephants is caused by the closing of elephant corridors, due to the expansion of human settlements.

Both humans and elephants are suffering due to HEC. Between 2014 and 2017, according to the Department of Wildlife Conservation, 305 humans and 971 wild elephants died due to HEC. The use of weapons, electric shocks, *Hakkapatas*, poisoning, and train accidents are some of the causes of elephant deaths. However, the leading causes of elephant mortality between 2014 and 2017 were gunshots, and use of *Hakkapatas*. Thus, between 2014 and 2017, almost 60% of wild elephants died because of direct actions by people.

Human-elephant conflict (HEC) has been a severe environmental and societal problem in the Mahaweli C region for decades. Elephant migrations into human settlement areas are becoming increasingly frequent and pose a significant threat to human lives, property, and agricultural fields. Human-elephant conflict is defined as the incursion of elephants into human communities, resulting in the destruction of human lives, property, and croplands, as well as the deaths of both parties.
When people clear the forests on a larger scale, the availability of sufficient food and water within the remaining forest regions decreases, forcing elephants to leave the jungle and raid crop-cultivated fields and cause damage to nearby properties. Once elephants began crop-raiding in a region, it would be difficult to stop them, and they would likely continue to strike periodically.

Elephants appear to be most active between 16:00 and 22:00 during the night. During these hours, elephants have been recorded raiding crops in Mahaweli C system communities. During field observations, inhabitants in Giradurukotte, Dehiattakandiya, and Nawa Madagama were transported by elephants that are typically spotted during these peak hours. So, the lack of street lamps along roads is a factor in the deaths of people caused



Source: DWC, 2018

Figure 2: Comparison of human and elephant deaths caused by the human-elephant conflict in Mahaweli system C

by elephant attacks. Figure 2, illustrates that the annual number of human deaths in the Mahaweli system C is more than the number of elephant deaths. Human and elephant mortality has escalated significantly as a result of the conflict between these two entities.

Management of HEC

When considering the management practices for mitigating HEC in the region of the Mahaweli system C should re-establish the above-mentioned two elephant pathways to facilitate elephant circulation. Currently, humans have encroached upon these two elephant corridors and use them for paddy agriculture and house gardens. The objective of management should be to preserve the corridor's function while permitting other land uses.

- Limiting human activity and food availability along and near the corridor
- Increase the most favourable food sources for elephants at the corridor's end to allow for faster elephant transit through the corridor.
- Allowing corridor width to be increased through regeneration and the protection of vegetated patches and remnants by excluding or reducing stocking rates and reducing

the frequency of hazard reduction burns.

- Enhancing the ecological value of corridors through weed and feral animal management.

In conclusion, people's irresponsible behaviour, such as approaching wild elephants when intoxicated, disturbing elephants, and excessively chasing them, is the cause of many HEC-related deaths. The majority of HEC-related human deaths are preventable if sufficient safeguards are adopted. The mass media play a significant role in bringing attention to HEC and changing public opinion. Instead of making HEC incidents seem more interesting than they are, the media should responsibly report them by explaining the real causes and circumstances that led to them.

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