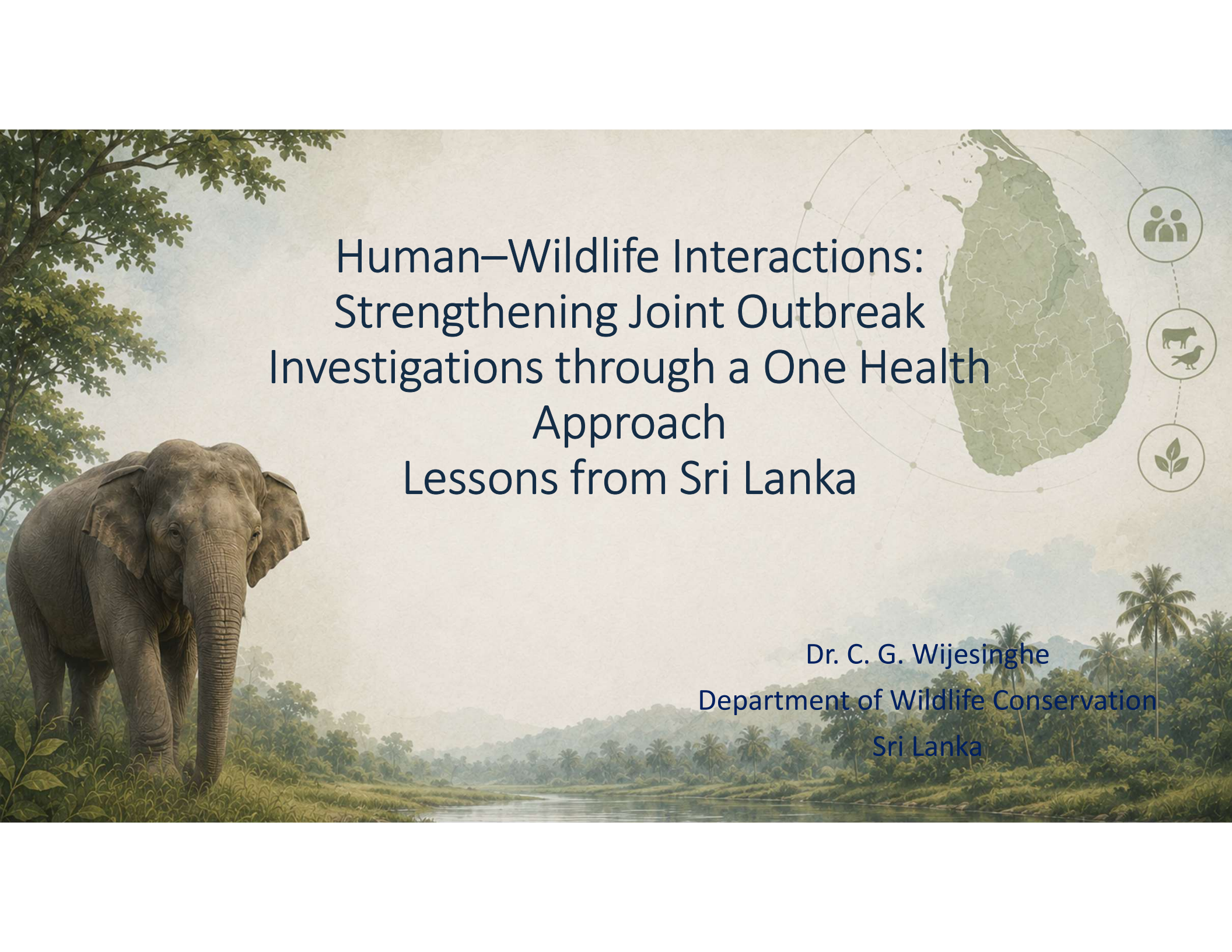




Human–Wildlife Interactions: Strengthening Joint Outbreak Investigations through a One Health Approach Lessons from Sri Lanka

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Why Human–Wildlife Interactions Matter

PEOPLE ↔ DOMESTIC ANIMALS ↔ WILDLIFE ↔ ENVIRONMENT

- Increasing contact between people, livestock and wildlife
- Shared habitats and resources
- Wildlife movement across landscapes
- Wildlife health events may provide early warning
- Wildlife is not only a potential source of disease — wildlife is also a sentinel of ecosystem health.



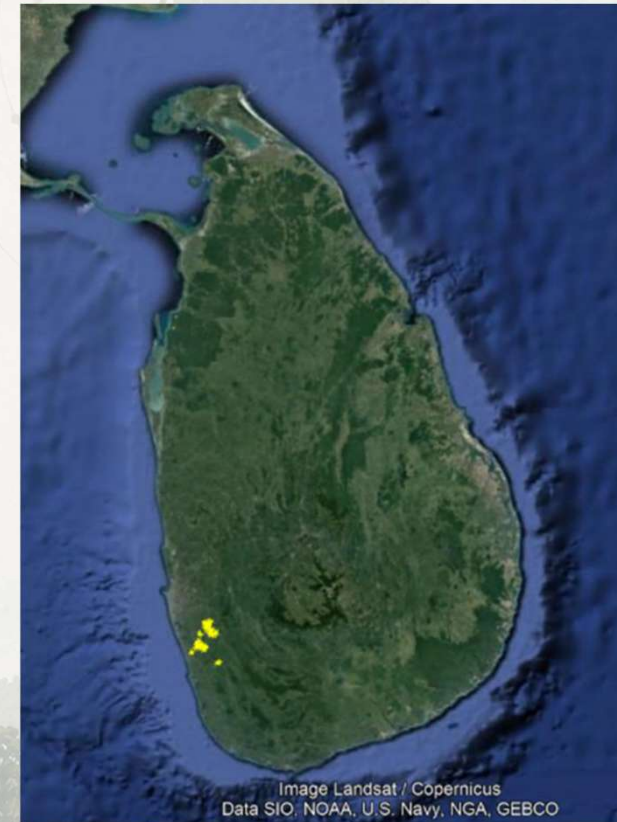
Sri Lanka: A Complex Wildlife–Human Interface

- High wildlife diversity within a relatively small island.
- Wildlife, livestock and people share landscapes and resources.
- Expansion of agriculture, settlements and infrastructure into wildlife habitats
- Frequent human–wildlife interactions at the forest–farm–settlement interface
- Wildlife movement across protected areas, agricultural lands and human settlements
- Climate and environmental changes can alter disease and exposure patterns
- Creates opportunities for pathogen transmission in multiple directions



Rabies Outbreak in Jackal - 2020

- The Outbreak: Rabies in Jackals and Other Species
- Kalutara District, Western Province, Sri Lanka
- Outbreak occurred between June and October 2020
- Transmission occurred across seven divisional areas



Rabies Outbreak in Jackal- 2020

- Multiple species were affected:
 - 25 jackals — 16 laboratory-confirmed
 - 23 dogs — 10 confirmed
 - 7 livestock
 - 2 humans — laboratory-confirmed
- Jackal-mediated bite exposures were reported in:
 - 17 humans
 - 85 dogs
 - 7 cattle



Rabies Outbreak in Jackal - 2020

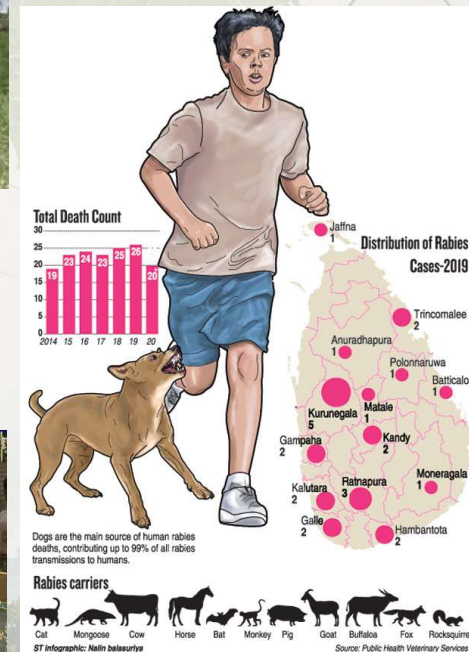
- Samples were examined at the WOAHA Reference Laboratory for Rabies, Bengaluru
- All isolates clustered within the Indian subcontinent lineage
- High genetic homology was observed across jackals, dogs and livestock
- Findings support probable transmission between domestic and sylvatic cycles
- Ecological overlap between host species provided opportunities for cross-species transmission



Rabies Outbreak in Jackal - 2020

Multisectoral response

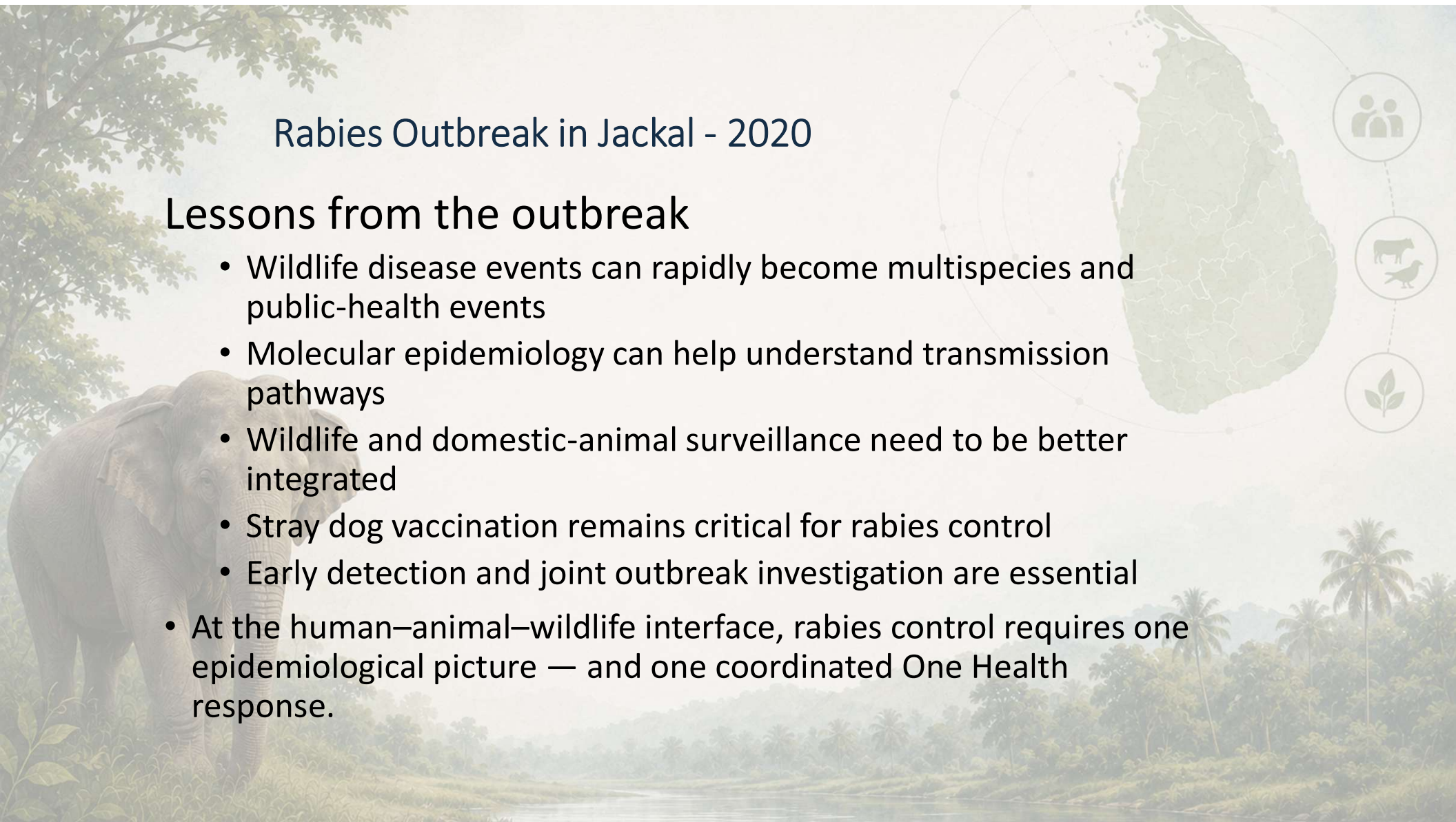
- Mass dog vaccination
- Enhanced wildlife and animal surveillance
- Contact tracing and investigation of bite exposures
- Public awareness and risk communication
- Collaboration between wildlife, veterinary, public health and laboratory sectors



Rabies Outbreak in Jackal - 2020

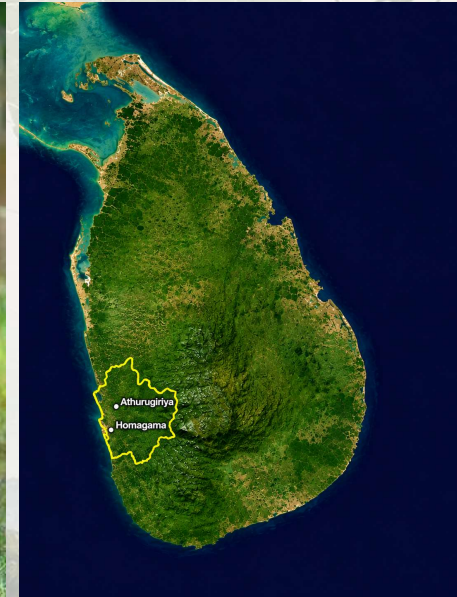
Lessons from the outbreak

- Wildlife disease events can rapidly become multispecies and public-health events
- Molecular epidemiology can help understand transmission pathways
- Wildlife and domestic-animal surveillance need to be better integrated
- Stray dog vaccination remains critical for rabies control
- Early detection and joint outbreak investigation are essential
- At the human–animal–wildlife interface, rabies control requires one epidemiological picture — and one coordinated One Health response.



Rabies in Spotted Deer - 2022

- Around 20 unusual deer deaths were reported between June–September 2022.
- Laboratory investigations were done at the Medical Research Institute (MRI), Colombo.
- Three brain samples were laboratory confirmed as rabies.
- An unusual wildlife mortality event revealed rabies transmission in a suburban deer population.



Rabies in Spotted Deer - 2022

- Spotted deer were living in close proximity to human settlements.
- The deer population had expanded into surrounding villages.
- Possible routes of infection included:
 - Wild carnivores → deer
 - Rabid stray dog/cat → deer
- Although deer-to-human transmission risk is considered very low, infected wildlife creates a potential exposure risk.
- Children were considered particularly important because of possible feeding and playing with deer.



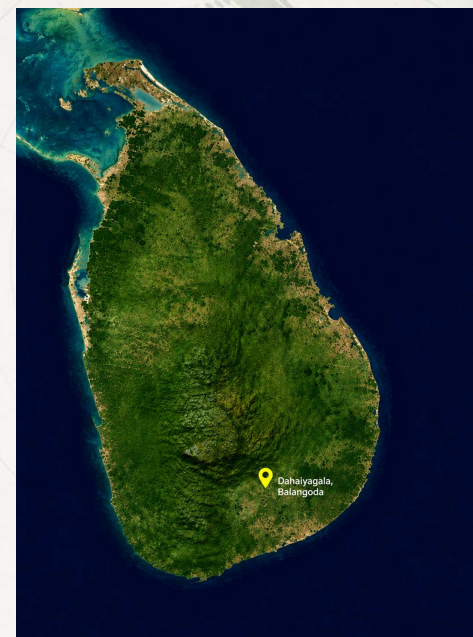
Rabies in Spotted Deer - 2022

- A coordinated One Health response was initiated
 - Department of Wildlife Conservation
 - Department of Animal Production and Health
 - Ministry of Health
 - District Secretariat
 - Laboratories – MRI, FVMAS
- Multistakeholder meetings were held to develop a collective response.
- Rabies control in the community
 - Ring vaccination of stray dogs
- Public awareness focused on:
 - Do not feed deer
 - Avoid close contact, handling and playing with deer, especially among children
- A knowledge-sharing platform was established to report further cases and coordinate interventions.



Tuberculosis in Elephants

- 03 August 2025: Pulmonary lesions suspected of tuberculosis (TB) identified during necropsy of an adult male elephant.
- Location: Dahaiyagala, Monaragala District
- Laboratory finding: *Mycobacterium* spp. detected by PCR
- Notification: Findings communicated to the Ministry of Health and Livestock Sector
- One Health significance: Highlights the need for integrated surveillance and intersectoral coordination



Suspected cases of Leprosy in Macaques

- Reported from: Athimale area, Monaragala District
- Clinical findings: Lesions affecting the hands and feet, with associated mortality
- Laboratory findings: Acid-fast bacilli detected in scrapings of the skin lesions
- Molecular testing: PCR was negative for *Mycobacterium leprae*
- Response: Targeted public awareness and continued wildlife health surveillance helped address community concerns and prevent unnecessary alarm.



Treponema pallidum in Sri Lankan Toque Macaques

- Reported in toque macaques in the Polonnaruwa and Giritale areas, with additional suspected observations in parts of Ampara, Trincomalee, and Medirigiriya.
- Lesions and fluid-excreting wounds and ulcerations were visible on the skin, genital organs, and anal regions of affected macaques.
- Wildlife authorities and Health Authorities conducted public awareness to avoid unnecessary panic in local communities and tourists.

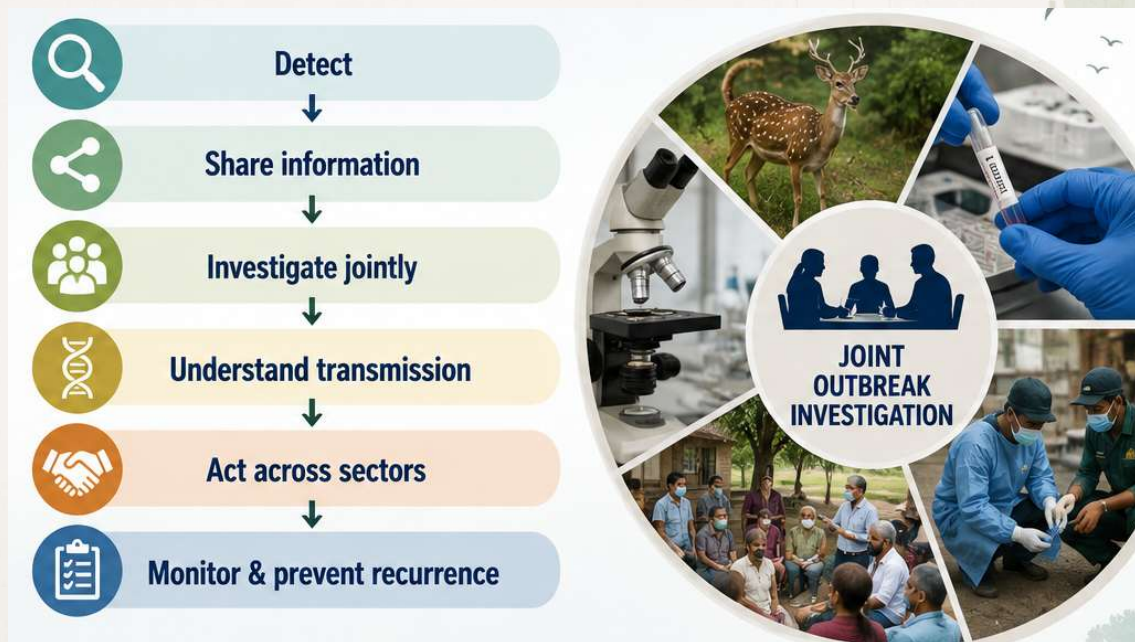


Lessons for Wildlife Health & One Health

- Wildlife disease surveillance is essential.
- Unusual wildlife mortality can provide an early warning signal.
- Systematic, multisectoral data collection is needed at local level.
- Genetic typing should be considered to help understand transmission pathways and source of infection.
- Wildlife interventions such as capture, vaccination or relocation require careful assessment of feasibility and ecological consequences.
- Effective control requires collaboration across human, animal and environmental health sectors.



Joint Outbreak Investigations through a One Health Approach



- **Wildlife Health • Veterinary Services • Public Health • Environment • Laboratories •**
- **“The earlier we connect the dots, the earlier we can stop the spread.”**



**WATCH WILDLIFE.
SHARE THE SIGNAL.
INVESTIGATE TOGETHER.
ACT AS ONE.**

A wildlife disease event is rarely only a wildlife problem.

ONE HEALTH. ONE FUTURE.

