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BREAKING THE BARRIERS

INNOVATING TO IMPROVE ECOLOGICAL OUTCOMES
ON TRANSPORT AND OTHER LINEAR INFRASTRUCTURE

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POSTER ABSTRACT

Fauna Escape Hatch: An Adaptive Management Approach to Fauna Infrastructure Design

Fauna exclusion fencing is installed to prevent wildlife from accessing roads, and to direct wildlife movement to safer crossing locations (i.e. under, over, or at road grade). Associated fence infrastructures such as fauna escape poles and 'jump out' ramps aim to provide opportunities for on-road animals a means of retreat. Between 2023 and 2024 Endeavour Veterinary Ecology (EVE) undertook a multi-phase research program to evaluate egress solutions designed specifically for koalas. In collaboration with Queensland Department of Transport and Main Roads, controlled Koala Egress Trials involving 85 wild koalas established clear behavioural preferences for ground-level movement and produced quantitative data that informed the design of the Fauna Escape Hatch (FEH)—a one-way, ground-level device integrated into fauna-proof fencing. In 2024 Endeavour Veterinary Ecology (EVE) partnered with the City of Moreton Bay (CMB) to field-validate this innovative roadside mitigation device. The FEH improves road safety for drivers and wildlife by providing a one-way (ground level) retreat from road corridors through fauna exclusion fencing. Sixteen FEH were installed throughout the CMB's local road network, with remotely triggered cameras recording multi-species interactions for over 12-months. Results verified the devices one-way functionality and documented behavioural responses that informed iterative design refinements. The current fauna hatch design offers an effective and efficient way for native animals to safely exit a fenced road i.e. from the pavement to habitat. By integrating empirical behavioural evidence with continuous field feedback, EVE and its partners – CMB, have developed a validated, scalable mitigation device that enhances driver safety, reduces wildlife entrapment and strengthens habitat connectivity across transport corridors.

KEY TAKEAWAYS

1. Innovation showcase: demonstrating how field trials positively influence infrastructure design & development. Evidence-led design improves wildlife safety outcomes, adaptive engineering
2. Insights from monitoring
3. Lessons from our learning – considerations for similar projects

SPEAKER BIOGRAPHY

Natasha Banville manages development and technology research projects at Endeavour Veterinary Ecology (EVE), a Queensland-based ecology and veterinary service specialising in koala population and health management. Her work focuses on bridging applied wildlife science with technology-driven conservation outcomes. Natasha leads EVE's Fauna Escape Hatch program and collaborations with local government on wildlife-friendly infrastructure. Her broader professional interests include adaptive design, ecological monitoring, and conservation innovation across urban and peri-urban landscapes.

Bernadette May is the Coordinator Green Infrastructure and Active Transport at City of Moreton Bay and the 2025 Australian Road Safety Award Winner – Local Government Program. Under Bernadette's leadership, the City of Moreton Bay has become recognised as one of the most environmentally progressive local governments in Australia and is at the forefront of fauna movement infrastructure, green infrastructure planning, design and implementation.