Environment Institute of Australia and New Zealand

ANET 2026

BREAKING THE BARRIERS

INNOVATING TO IMPROVE ECOLOGICAL OUTCOMES ON TRANSPORT AND OTHER LINEAR INFRASTRUCTURE

23 – 25 MARCH 2026 | BRISBANE

ANET
AUSTRALASIAN NETWORK FOR ECOLOGY & TRANSPORTATION

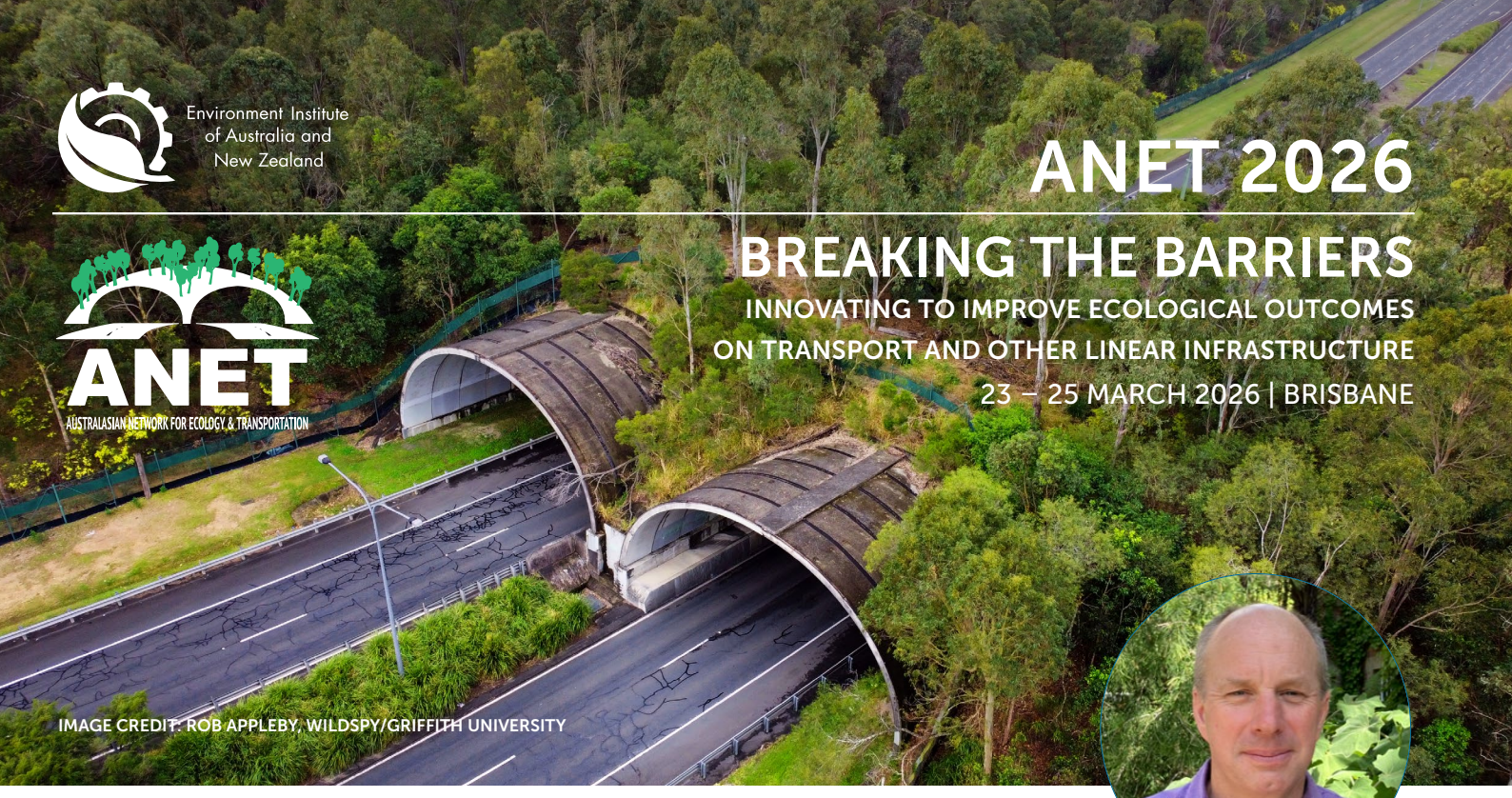

IMAGE CREDIT: ROB APPLEBY, WILDSPY/GRIFFITH UNIVERSITY

PROFESSOR NICHOLAS WILLIAMS
Ecologist

ABSTRACT

Has management of Melbourne's urban rail corridors improved biodiversity?

Metro Trains Melbourne (MTM) operates the Melbourne Metro Rail Network under contract to the Victorian Government. As part of Metro Rail 4 franchise (MR4), MTM made a commitment to protect and conserve sites of biodiversity significance along the rail corridor by developing a Biodiversity Management Plan (BMP). The BMP outlines an annual works program to maintain the ecological value of Biosites (areas of rail corridor containing significant biodiversity values) for the seven-year MR4 franchise period (Dec 2017 to Nov 2024). Upon commencement of MR4, Metro commissioned a baseline assessment of 30 biosites which informed the preparation of the BMP. The BMP includes the locations of habitat management zones within each biosite as well as relevant management techniques, and management and monitoring plans for the seven-year MR4 period. We utilised the biodiversity data collected by MTMs contractors, monitoring log books recording weed control activities as well as recent and past burn histories to assess changes in biodiversity condition since the 2018 baseline assessment. This was done for individual Biosites and the program as a whole. Analysis of the monitoring data using mixed models indicates that there has been a significant overall increase in native species richness, threatened plant abundance, in particular Dianella amoena and Pimelea spinescens, and habitat hectare score through the franchise period. The influence of determining management variables and importance of monitoring frameworks will also be discussed.

KEY TAKEAWAYS

1. Well-designed monitoring programs can provide statistically robust assessments of management obligations
2. Species richness, rare plant abundance and habitat condition of Melbourne's rail reserves has improved
3. Reintroducing burning to rail reserves is very important for biodiversity outcomes

SPEAKER BIOGRAPHY

Professor Nick Williams is an ecologist whose research focusses on urban areas because although they are the cause of many of the world's environmental problems cities also offer humanity great hope for a sustainable future. Nick has led the development of urban ecology and green infrastructure research in Australia creating cross disciplinary networks of researchers, government agencies and industry partners that have produced more than 120 scientific papers and equally influential evidence based industry guidelines and co-designed urban greening projects. His research seeks to understand the effects of urbanisation on plant, bird and insect communities and develop applied solutions such green roofs, novel habitat restoration techniques and species reintroductions to address negative impacts. Nick has a passion for restoring biodiversity through greater use of indigenous plants in all aspects of the urban landscape. This is reflected in his research, volunteer activities, and self-built rambunctious green roofs outside his office window and on the family home.