

Katinka Ruthrof

Biography

Katinka is a research scientist at the Botanic Gardens and Parks Authority, and Murdoch University, in Perth, Western Australia. Her fields of interest include restoration of degraded systems, climate change impacts on forest and woodland communities, and fire ecology.

EcoTAS abstract

There is a growing realisation that the use of degraded habitats for agricultural production is becoming an increasingly practical and economically viable alternative target or state to clearing pristine environments, which are optimally managed and conserved for the protection of

Agro Ecology

 Monday, November 27, 2017

 11:00 AM - 1:00 PM

 Cypress #2

 Oral presentation

biodiversity and ecosystem services. Given their synergies in terms of availability of labour, machinery, and the need for food and animal feed, the two major industries of mining and agriculture should collaborate. Although there are many advantages for agricultural production following mining, substrates often have abiotic and biotic challenges for plant growth, including poor fertility, heavy metals, and a lack of beneficial soil microbes. A nutrient trial was established to investigate methods of increasing plant biomass and health in a post-phosphate mining environment using a well-known legume as a model species, *Lablab purpureus* L. Sweet. We found that the addition of potassium (K) significantly increased plant biomass, enhanced root growth, and enhanced mycorrhizal fungal colonisation rates. Potassium amendment was also associated with significantly lower heavy metal levels in plant material. We hypothesise that heavy metals were either diluted in larger biomass or healthy, non K-limited plants can select against heavy metal uptake. Clearly, K is the critical nutrient for legumes in post-phosphate mine sites for enhancing biomass and health. These results have global ramifications for successful transitioning from mining to agriculture (in terms of food security, food safety and sustainable employment for stakeholders, and information for land-use policy makers), but also for restoration of native vegetation in ex-mined sites.

 **Ruthrof K**^{1,2}, Fontaine J², Hopkins A³, McHenry M², Howieson J², O'Hara G², Hardy G²

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Overcoming challenges in the transition from mining to agriculture



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Kiri (Reihana) Spraggs

EcoTAS abstract

The widespread degradation of water quality and quantity and its state of mauri, is a significant issue for Māori. This issue is represented by widespread degradation of

Open session (1)

📅 Monday, November 27, 2017

🕒 3:45 PM - 5:45 PM

📍 Sugarloaf Room

🗣️ Oral presentation