

## Amber Bateman

### Biography


Amber Bateman is a PhD student at The University of Western Australia and Kings Park Botanical Gardens and Parks Authority working in partnership with BHP Billiton

Barbara Rice Memorial Poster  
Session (Monday)

 Monday, November 27, 2017

 5:45 PM - 7:30 PM


 The Event Centre

 Poster presentation

studying reconstructed soil substrates in arid-zone mine site rehabilitation.

### EcoTAS abstract

Currently, one-third of the world's soils are considered degraded due to large scale landscape disturbance. To improve soil health, arid zone rehabilitation projects use inorganic amendments, such as gypsum or urea, in these degraded soils to increase soil nutrients, water retention and achieve higher seedling recruitment. Although these amendments are currently used in the agricultural and mining rehabilitation industries, limited research has been conducted to determine the impact these amendments have on the soil and seedling recruitment or to test what application rates are most effective. This research aims to assess the effectiveness of inorganic soil amendment to re-instate soil physiochemical and biological properties and, improve seedling development. In a glasshouse experiment, the effects of various rates of inorganic amendments on soil health and seedling growth was assessed across five plant species, native to the Pilbara region of Western Australia. This study found that seedlings grown in degraded soils with high doses of amendments showed improved total biomass. Analysis of soil microbial activity showed that reconstructed substrates with a high dose of gypsum and low dose of urea had a significantly higher amount of microbial activity than substrates with either a low dose or zero gypsum. Overall, responses to amendments varied across species and long-term field studies are required to further assess the use of amendments in a rehabilitation setting. The findings of this study suggest that amendments may be beneficial to both soil microbial health and plant development in the early stages of recruitment.

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Evaluating inorganic amendments in reconstructed arid-zone substrates to improve soil function and seedling development

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# EcoTAS 2017

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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