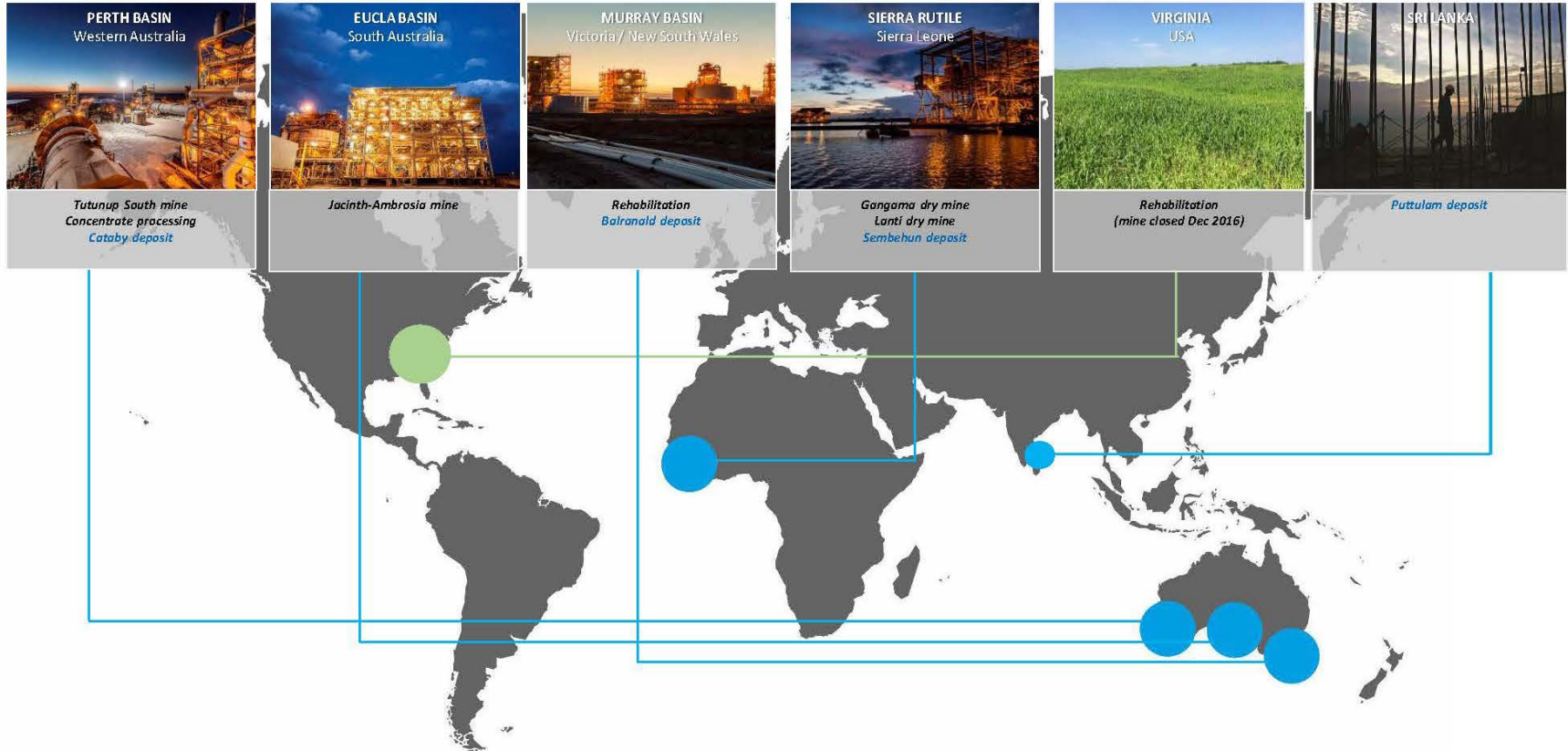


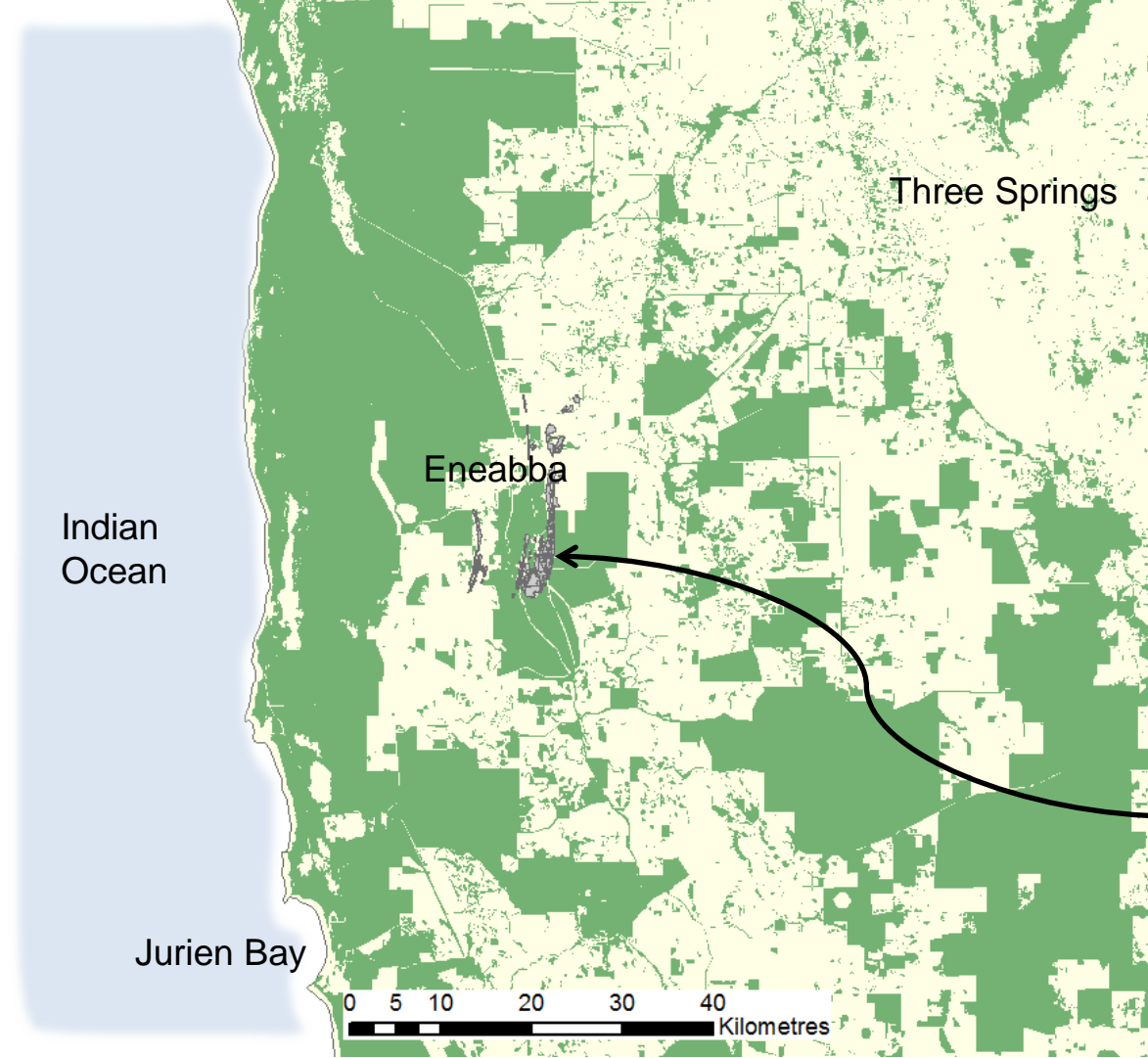
Revegetation Practice Improvements in Kwongan of the Mid West



Mark Dobrowolski
Iluka Resources Limited

Iluka Resources operates mineral sands mines and processing facilities across a range of environments around the world





At Eneabba in WA's Mid West, Iluka has revegetated 1,700 ha of kwongan vegetation over the last 40 years

- Remnant vegetation
- Cleared for agriculture
- Mined area
~1,700 ha revegetated to kwongan
~600 ha planned for kwongan



Undisturbed kwongan vegetation contained 234–494 canopy-borne seeds/m² and 140–174 topsoil seeds/m²

In revegetation sites, germinable seed came from mulch (89%), topsoil (9%) and broadcast seed (2%)

The historic practice of harvesting and spreading native mulch provided serotinous seed, organic matter, niches and surface stabilisation









2015



2015



2015



2016



2016



2016



2016



2016



2017



2017



DIVISION S-6—SOIL AND WATER MANAGEMENT AND CONSERVATION

Water Infiltration Control: a Channel System Concept¹

R. M. DIXON AND A. E. PETERSON²

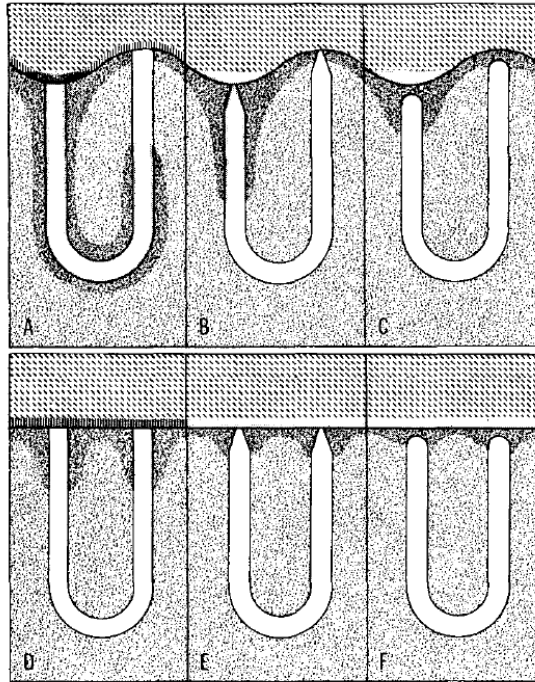


Fig. 2—Idealized channel system states representing six combinations of soil surface roughness and openness. States A, B, and C represent rough surfaces with open, constricted and closed water intake and air exhaust orifices; states D, E, and F represent smooth surfaces with open, constricted and closed orifices.

AEI MODEL FOR RESTORING VEGETATION

1. DESERTIFICATION



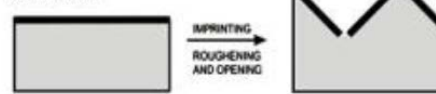
A process that denudes, smooths, and seals the air-earth interface (AEI) to inhibit infiltration and revegetation processes.

2. INFILTRATION



A process that exchanges rainwater and soil air across the AEI. Infiltration is rapid across a rough-open AEI and slow across a smooth-closed AEI.

3. IMPRINTATION



A process that roughens and opens a smooth-closed AEI to accelerate infiltration, revegetation and desertification reversal.

4. REVEGETATION



A process, beginning with seed germination and seedling establishment, that needs, creates and maintains a rough-open AEI to reverse desertification and rebuild topsoil.



Dr. Bob Dixon

imprinting.org



2017

2017



2017



2017



2017



2017



2017



2017



2017



2017



2017



2017

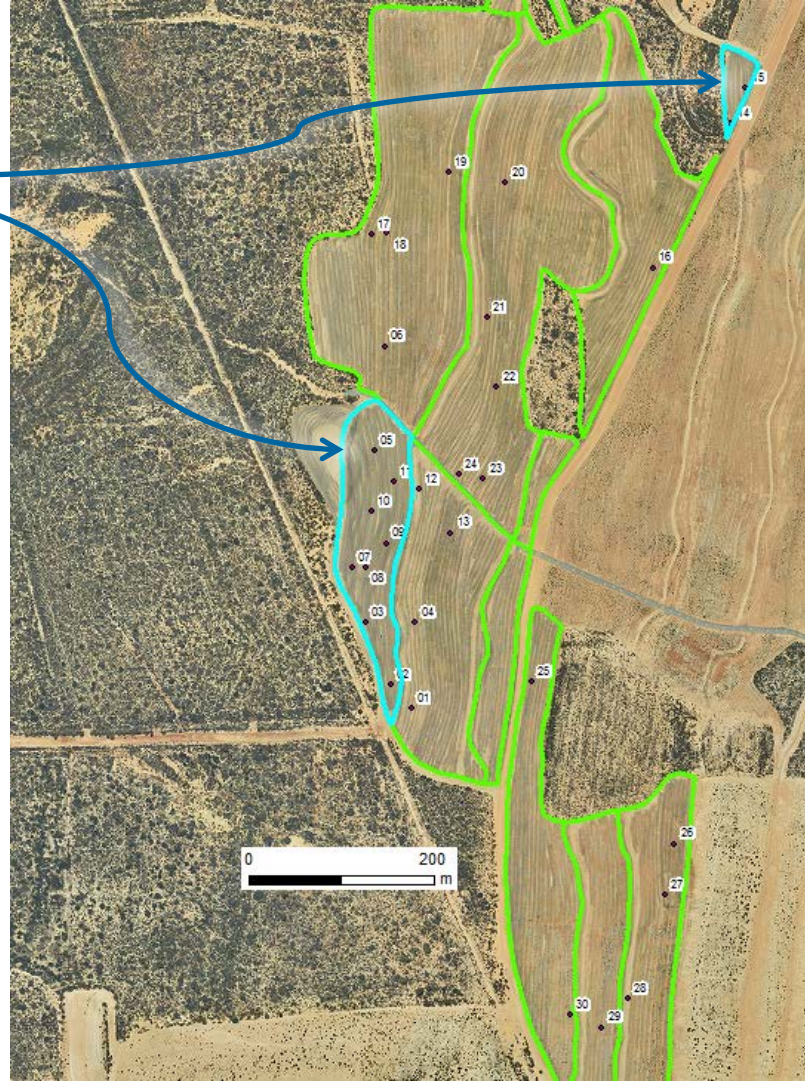


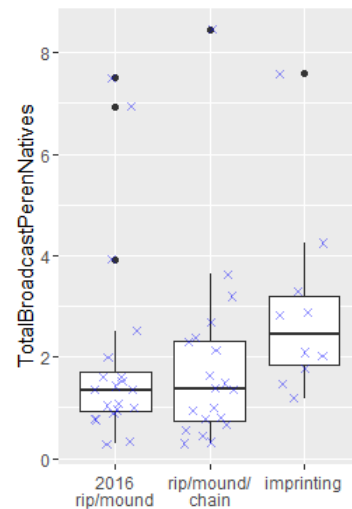
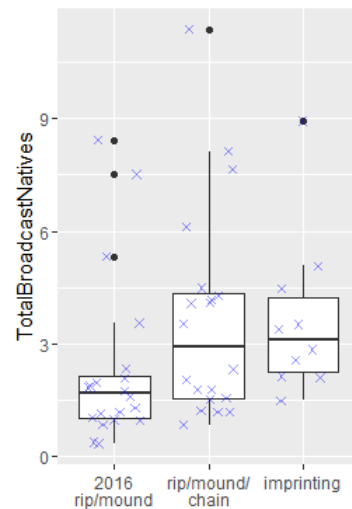
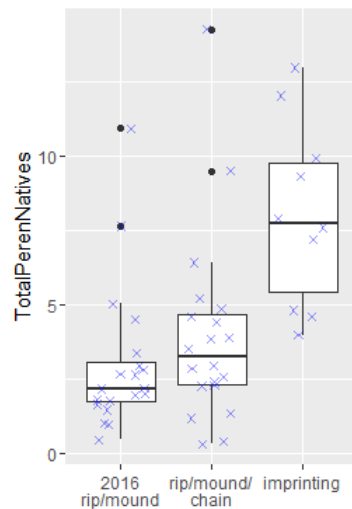
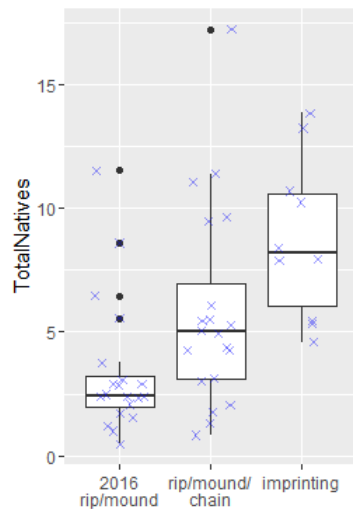
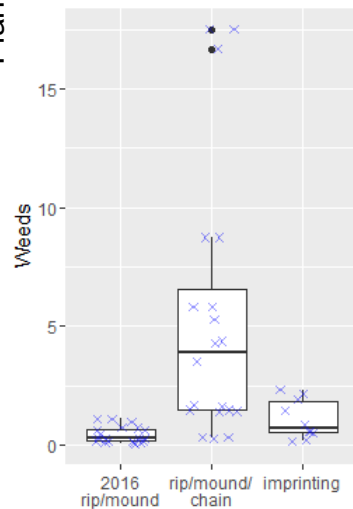
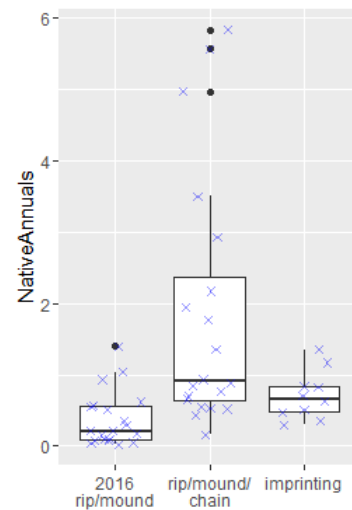
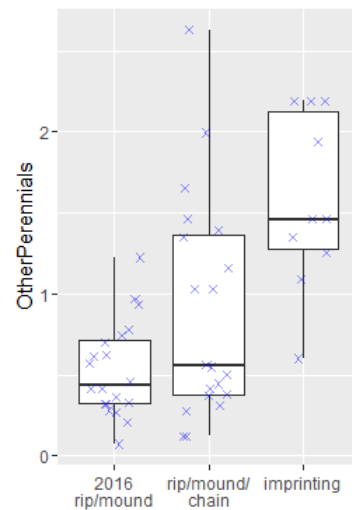
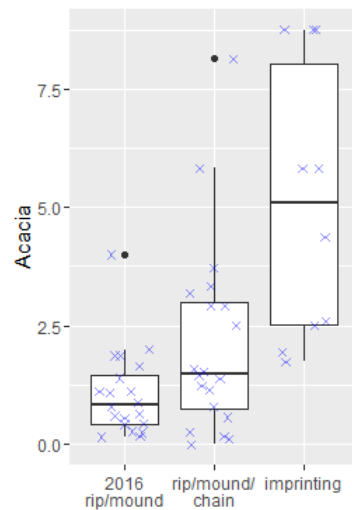
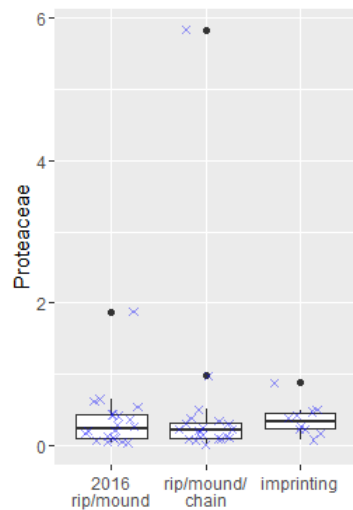
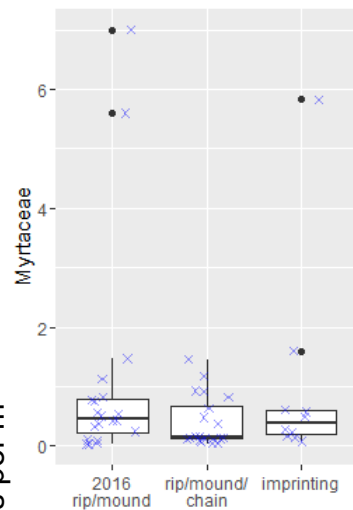
2018

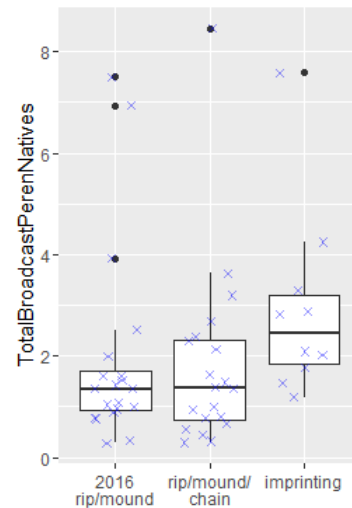
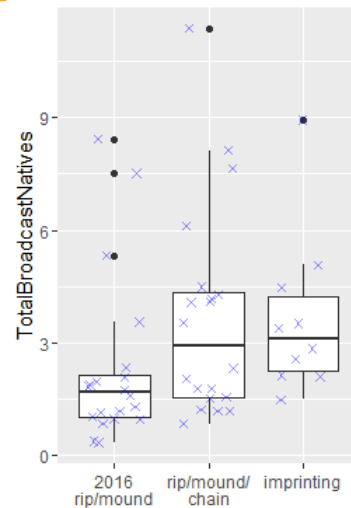
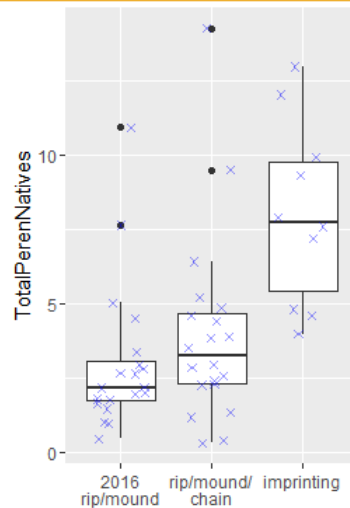
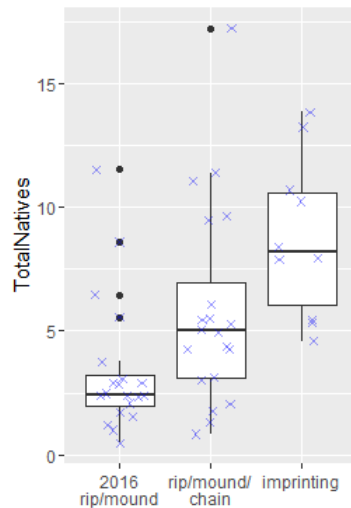
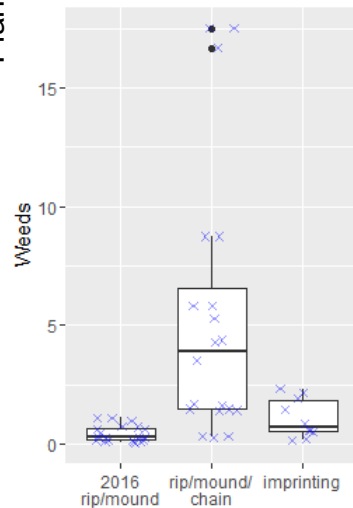
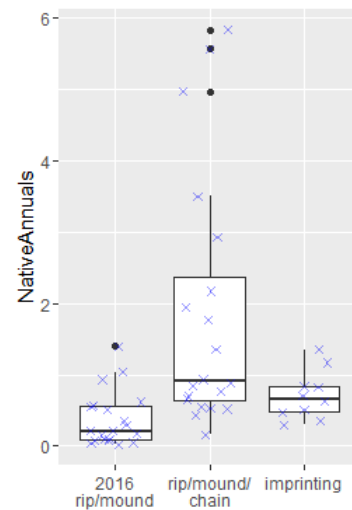
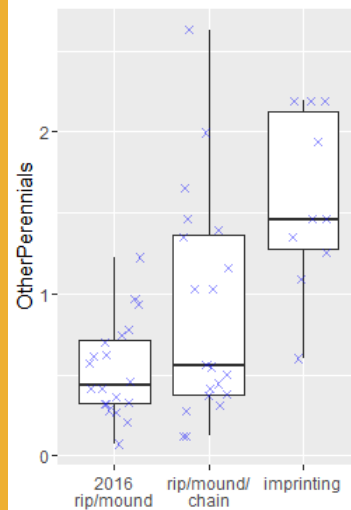
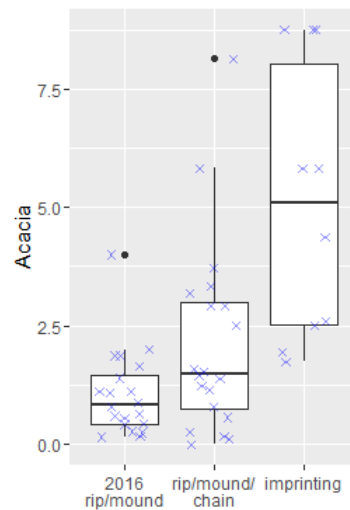
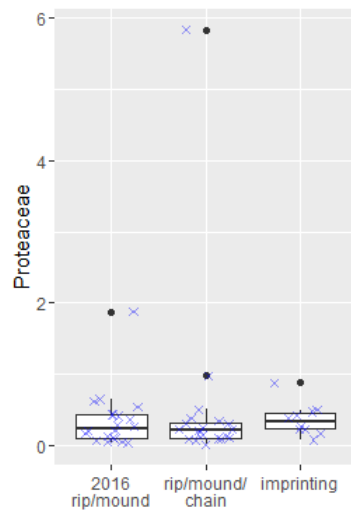
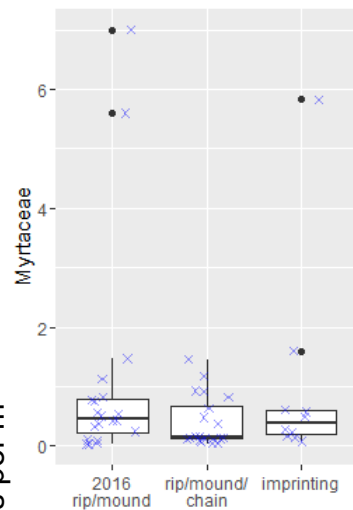


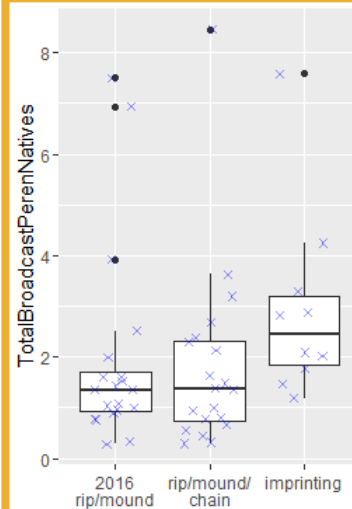
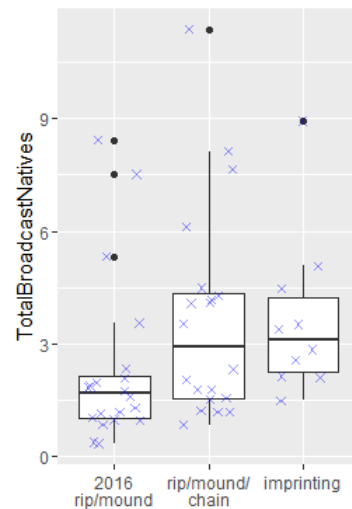
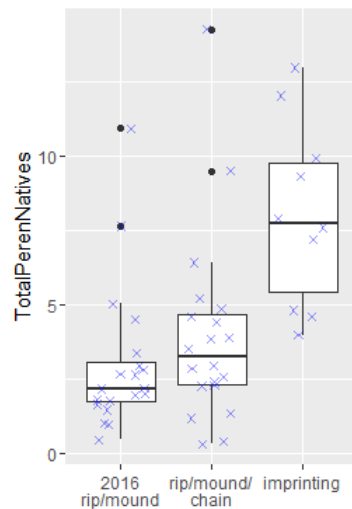
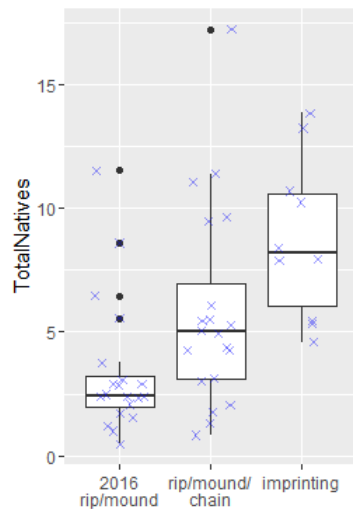
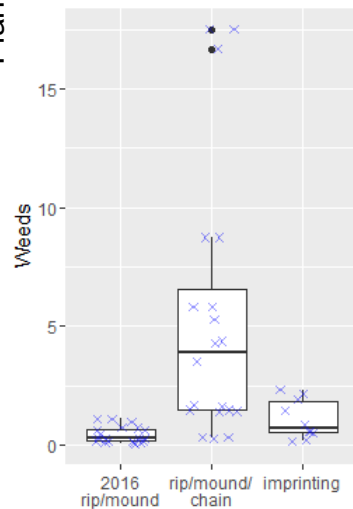
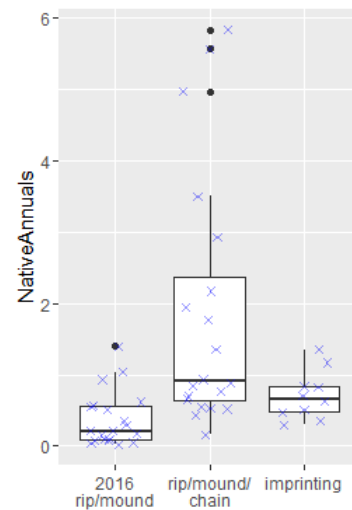
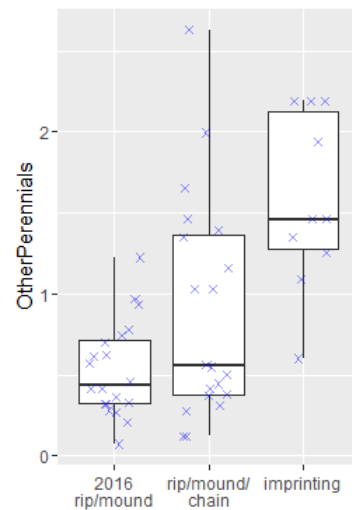
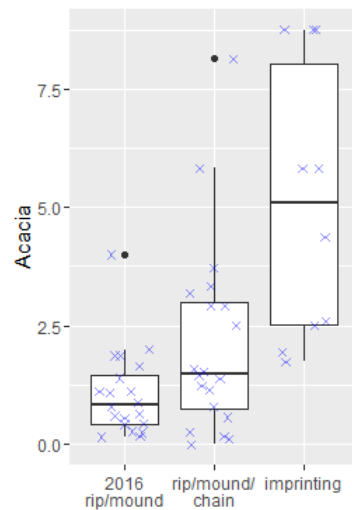
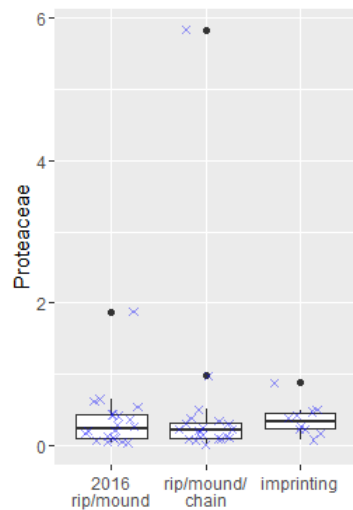
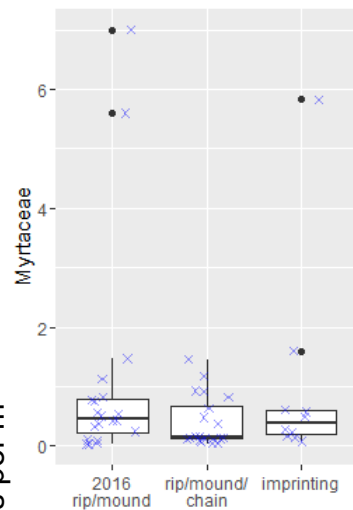
Imprinted areas, ~2 ha (blue),
within the 30 ha of 2017 rip/mounded
revegetation area (green)

30 randomly placed variable area
transects (VAT) were used to measure
seedling establishment of species groups

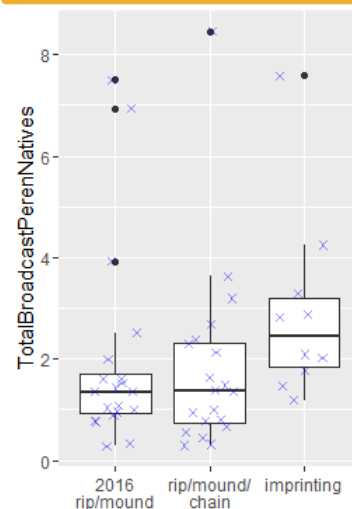
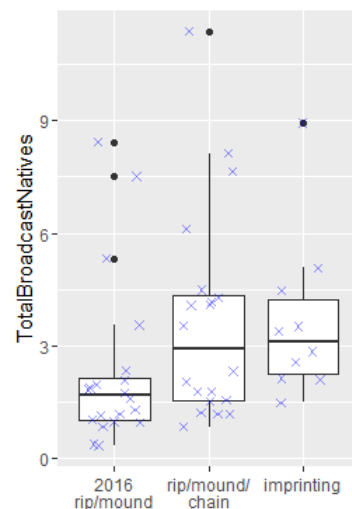
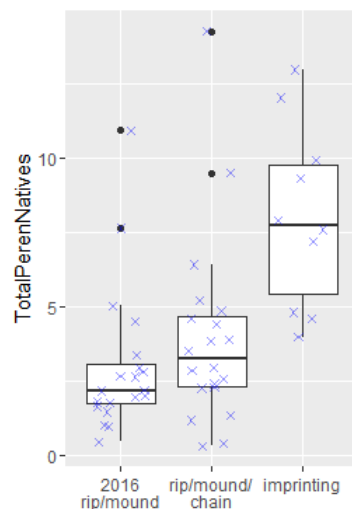
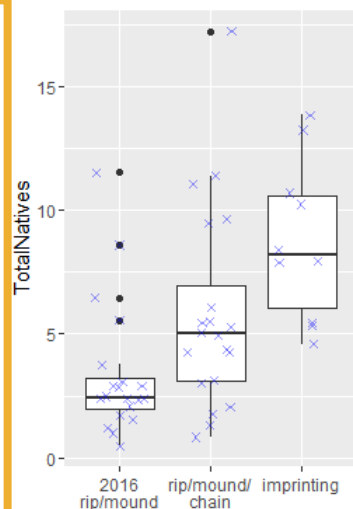
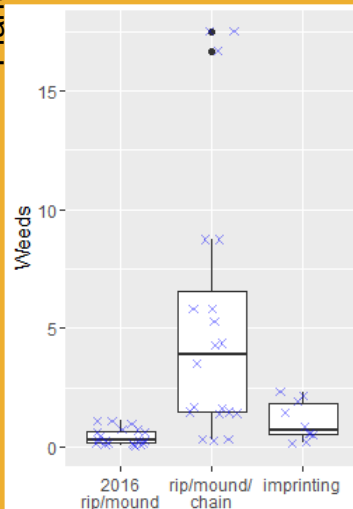
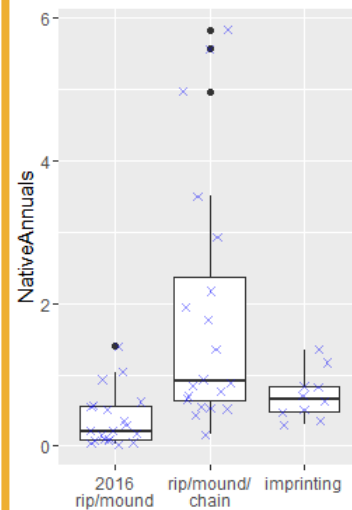
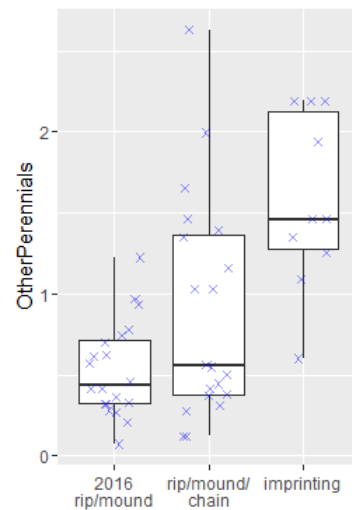
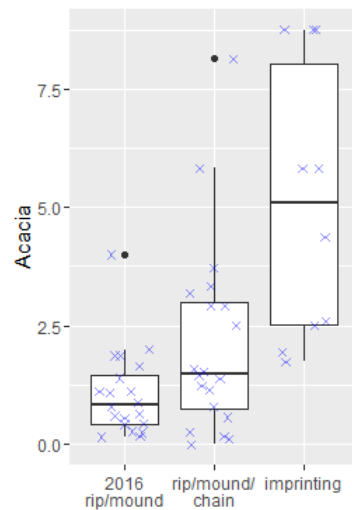
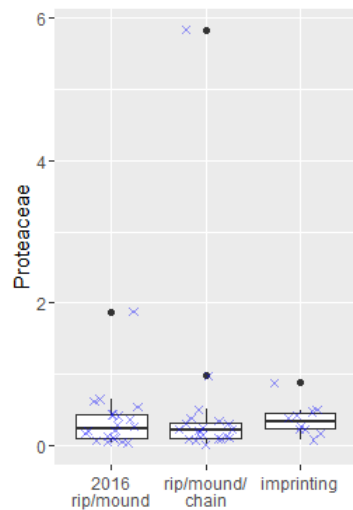
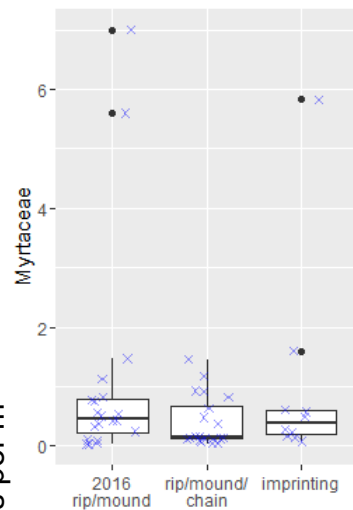




Plants per m²

Plants per m²

Plants per m²



2016



2017



2018



2018



2018



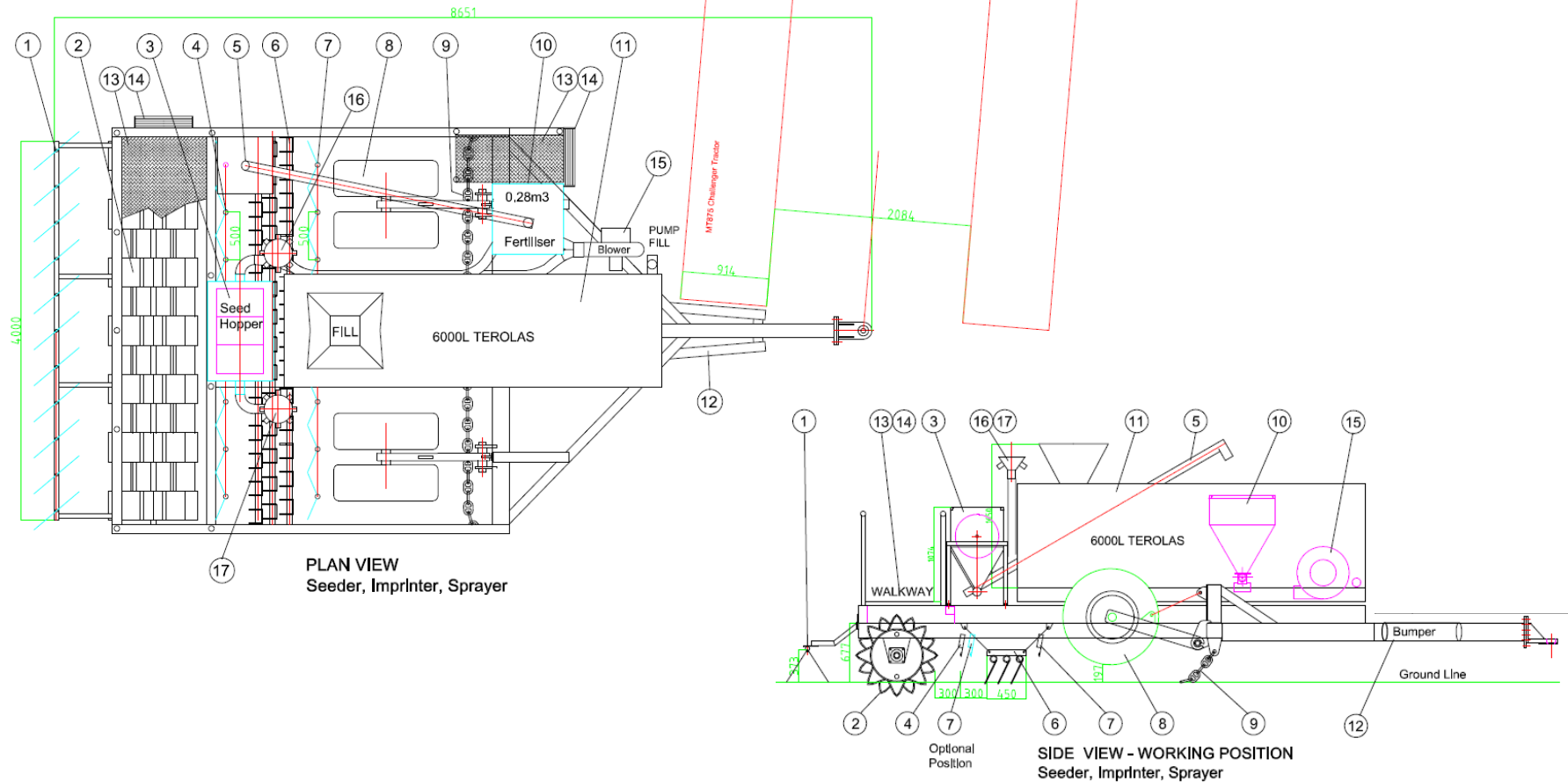
2018



2018



2019...





Iluka Resources Limited

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+61 477 703 289