Predictive, spatially explicit modelling of blackberry dispersal

Adam Dunn and Jonathan Majer
Aims

- To build a spatially explicit model of weed dispersal that considers the structure of the landscape for each dispersal vector.
- To assess the effects of disconnections in the habitat of *Rubus anglocandicans* for the region around Albany.
Hierarchy in landscape ecology

Data

• Watercourse locations for fine scale population capacity.
• Vegetation survey – ecological value as a measure of likelihood for dispersal vectors.
• Soil data for broad scale assessment of population capacity.
• Cadastre as a measure of human density.
Seed/weed dispersal models

Presence-only data and sampling bias

- Reports are more likely to be recorded for locations where human populations are more dense.
- Presence-only data offers challenges and report times may not be a good approximation for establishment times.
Population loads and unique dispersal value count for both experiments.

- Population load (report)
- Unique dispersal count (report)
- Population load (point)
- Unique dispersal count (point)
Conclusions

• Intricacies of urban landscapes not captured.
• Extent and general patterns of spread are reasonably modelled for corridors of remnant vegetation and human population density.
• Uncertain human dispersal mechanisms seem to dominate the dynamics for ‘fat-tailed’ long distance dispersal.