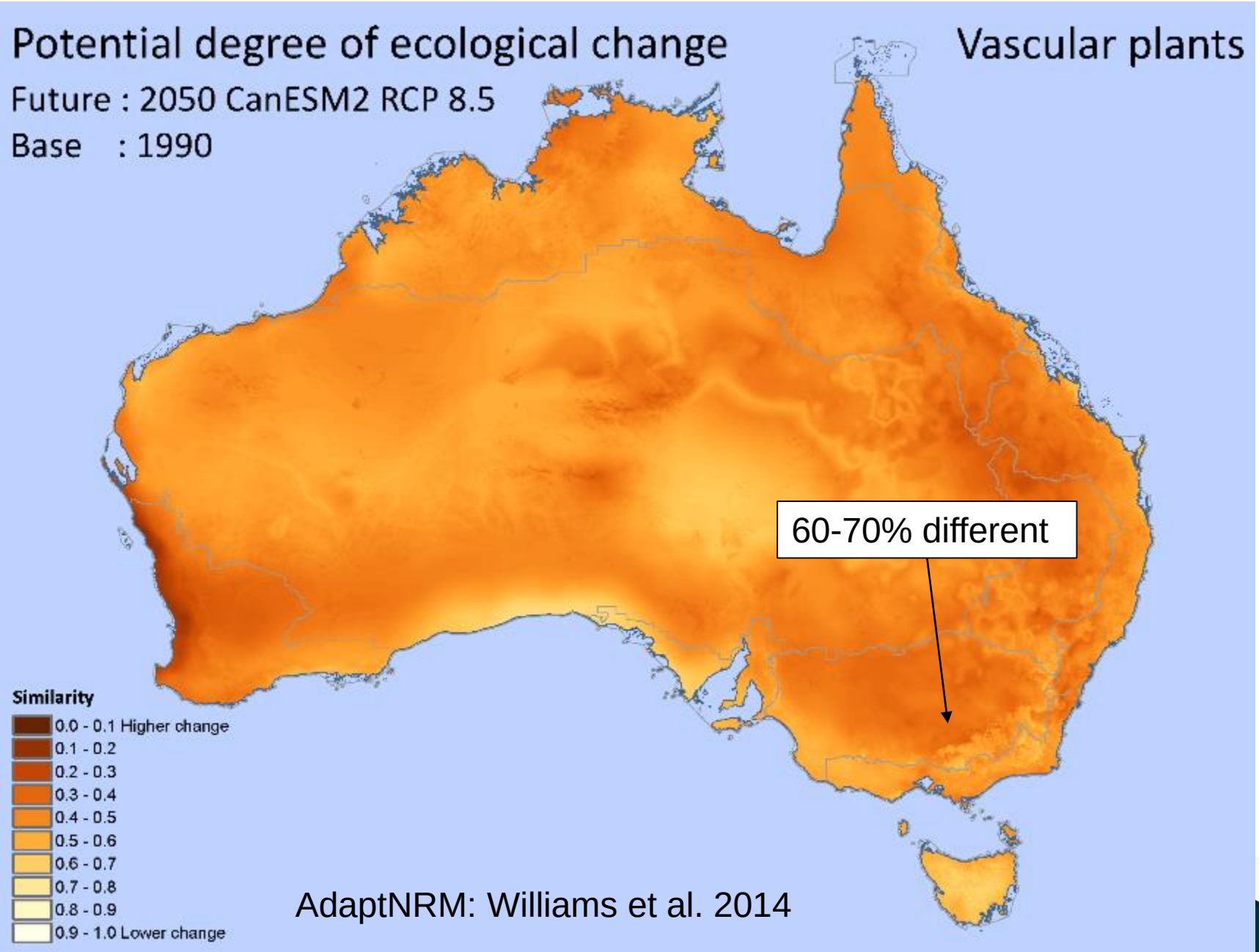
The hope of biolinks and practical guidelines for making the dream a reality

Veronica Doerr

CSIRO LAND AND WATER
www.csiro.au

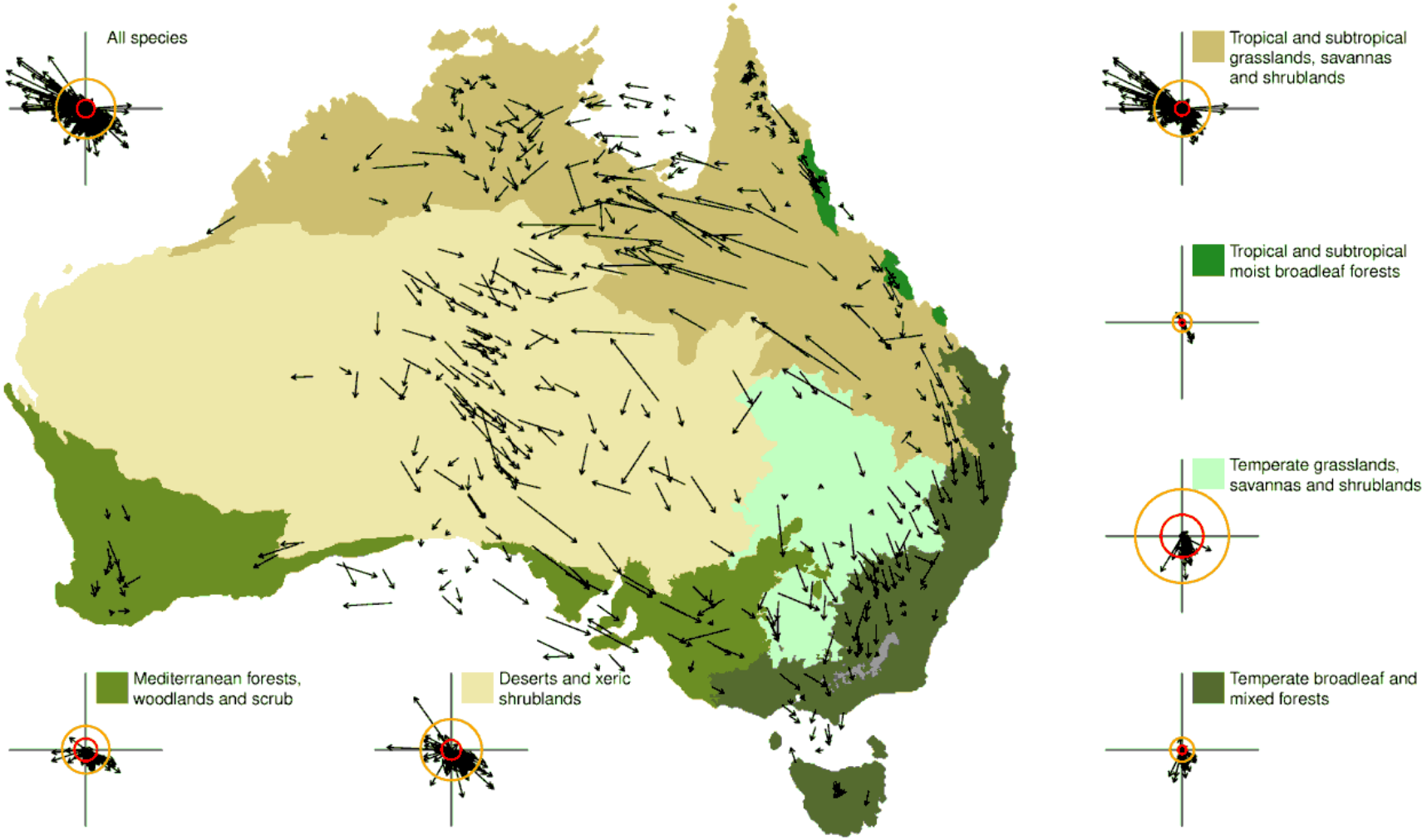
Connectivity (and climate change?)

Amount of change



AdaptNRM: Williams et al. 2014

Length of range shifts = 200-400km



VanDerWal et al. 2012

The hope of biolinks

- Allow dispersal, migration & viable populations
- Keeping people in the landscape

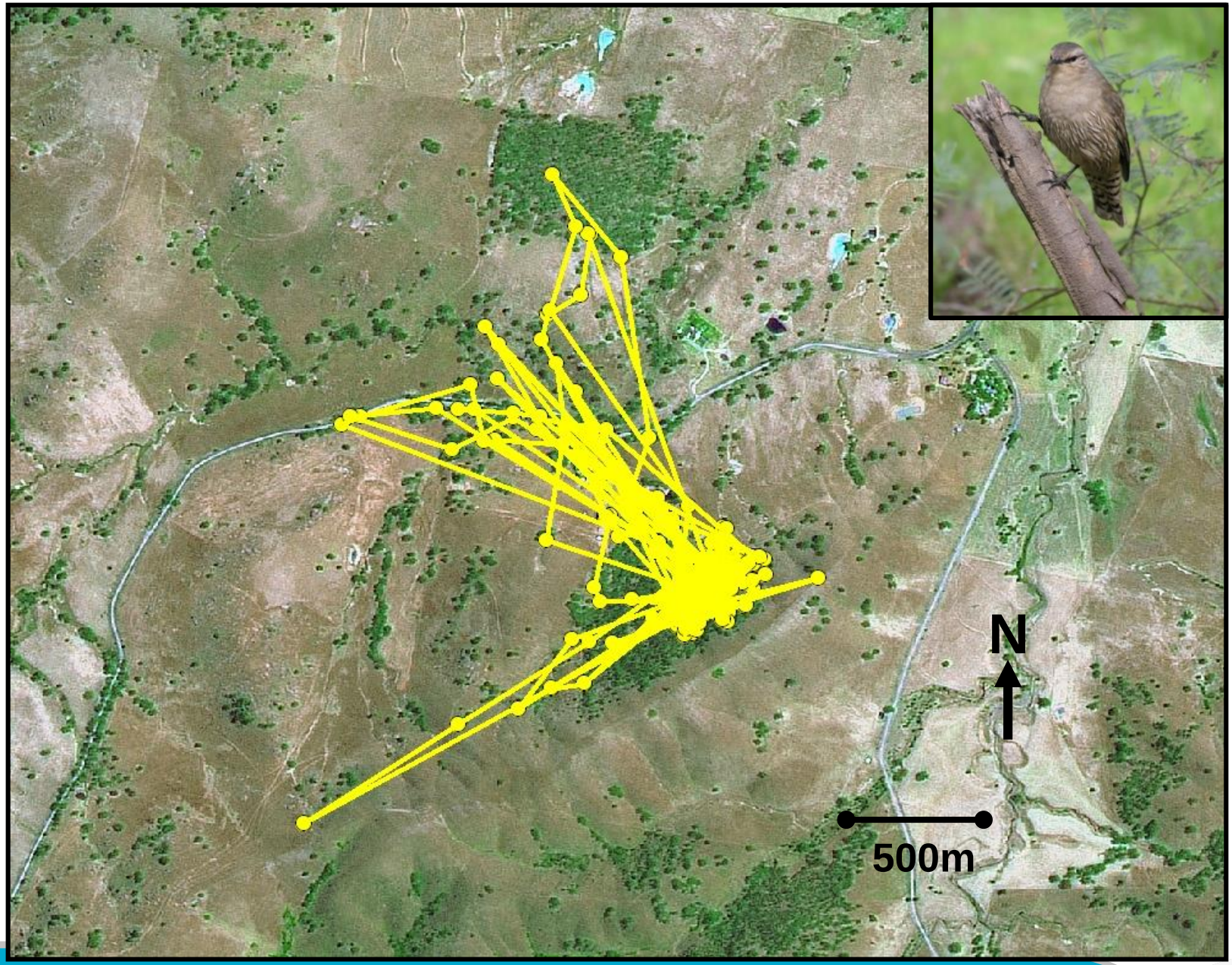
The hope of biolinks

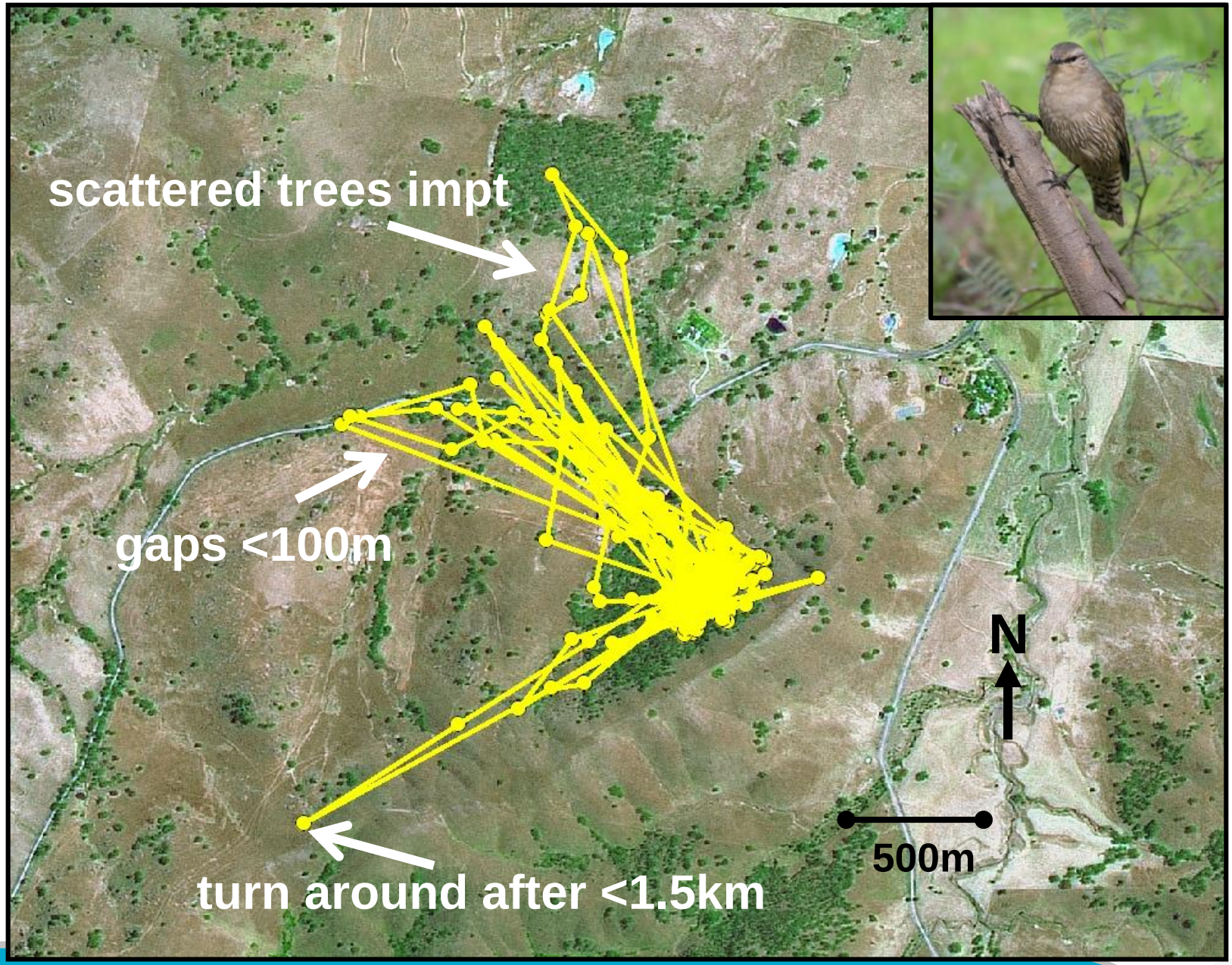
- Allow dispersal, migration & viable populations
- Keeping people in the landscape
- Large, diverse populations with adaptive capacity
- Movement areas & habitat for range shifts
- Over 200+km

The hope of biolinks

- Allow dispersal, migration & viable populations
- Keeping people in the landscape
- Large, diverse populations with adaptive capacity
- Movement areas & habitat for range shifts
- Over 200+km

How?


N
500m

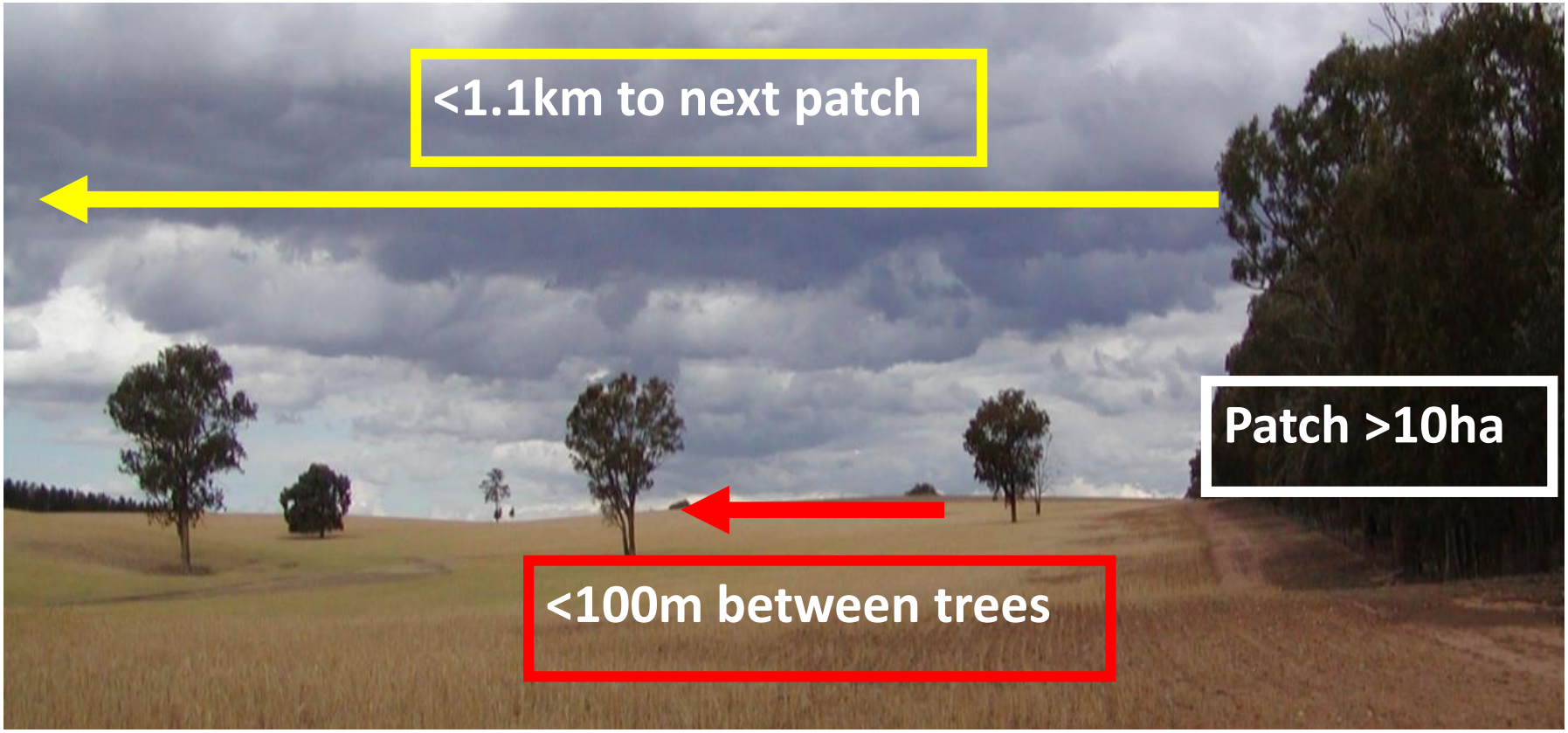

scattered trees impt
gaps <100m
turn around after <1.5km
N
500m

Generalising beyond a single species

- Tracking a few others
- Review of indirect studies (mammals & birds)

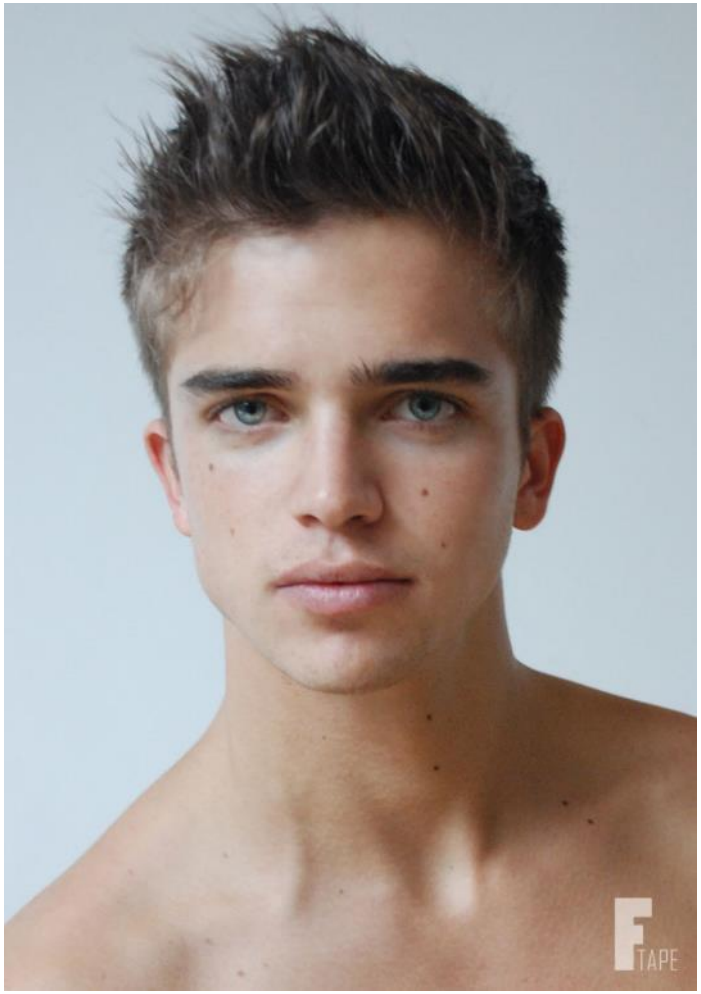
CSIRO Functional Connectivity Model

The ‘100m/1.1km/10ha Rule’



Scattered trees better than linear corridors?

But should landscapes be ‘messy’?

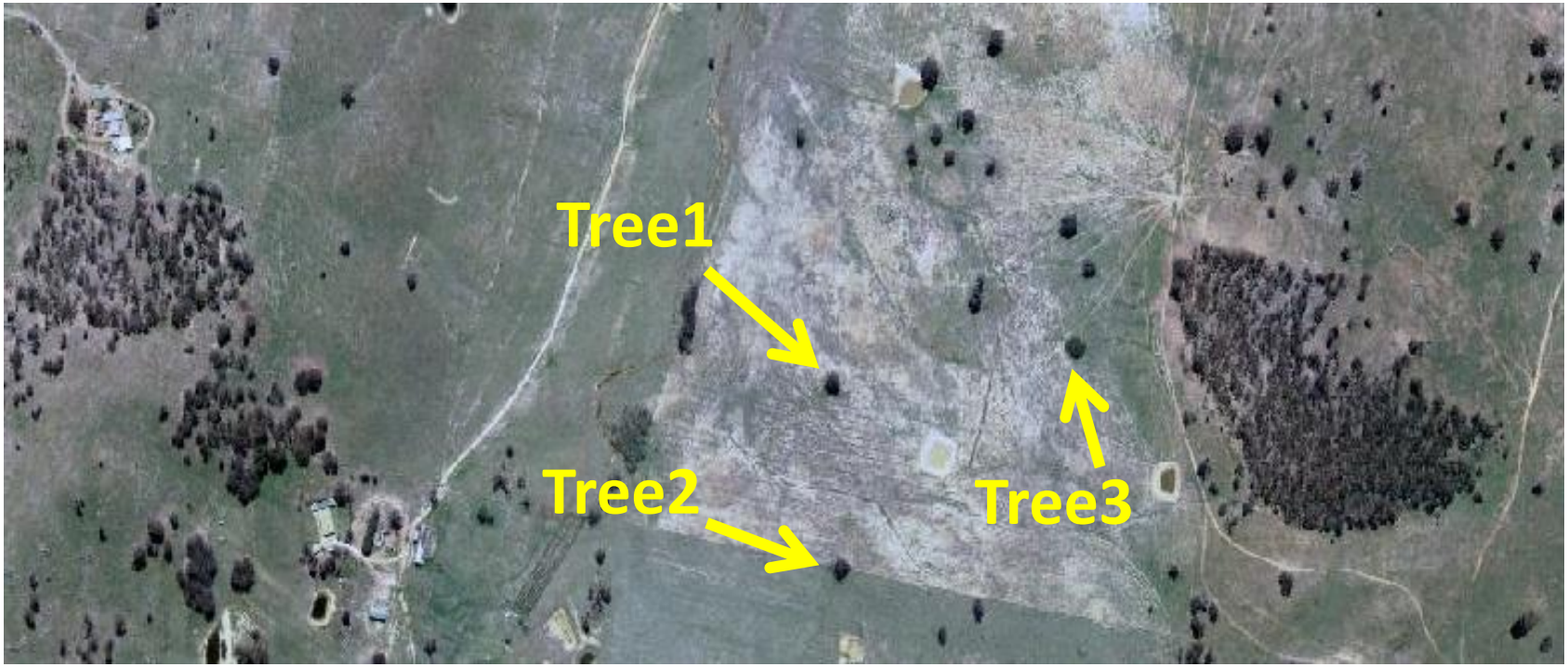


Good messy vs. bad messy

- Maybe we still need good ‘design rules’

Connectivity Tree Watches

- Does movement through a connection depend on gap distances and inter-patch distances?
- Looked at 93 ‘connectivity trees’ that differed



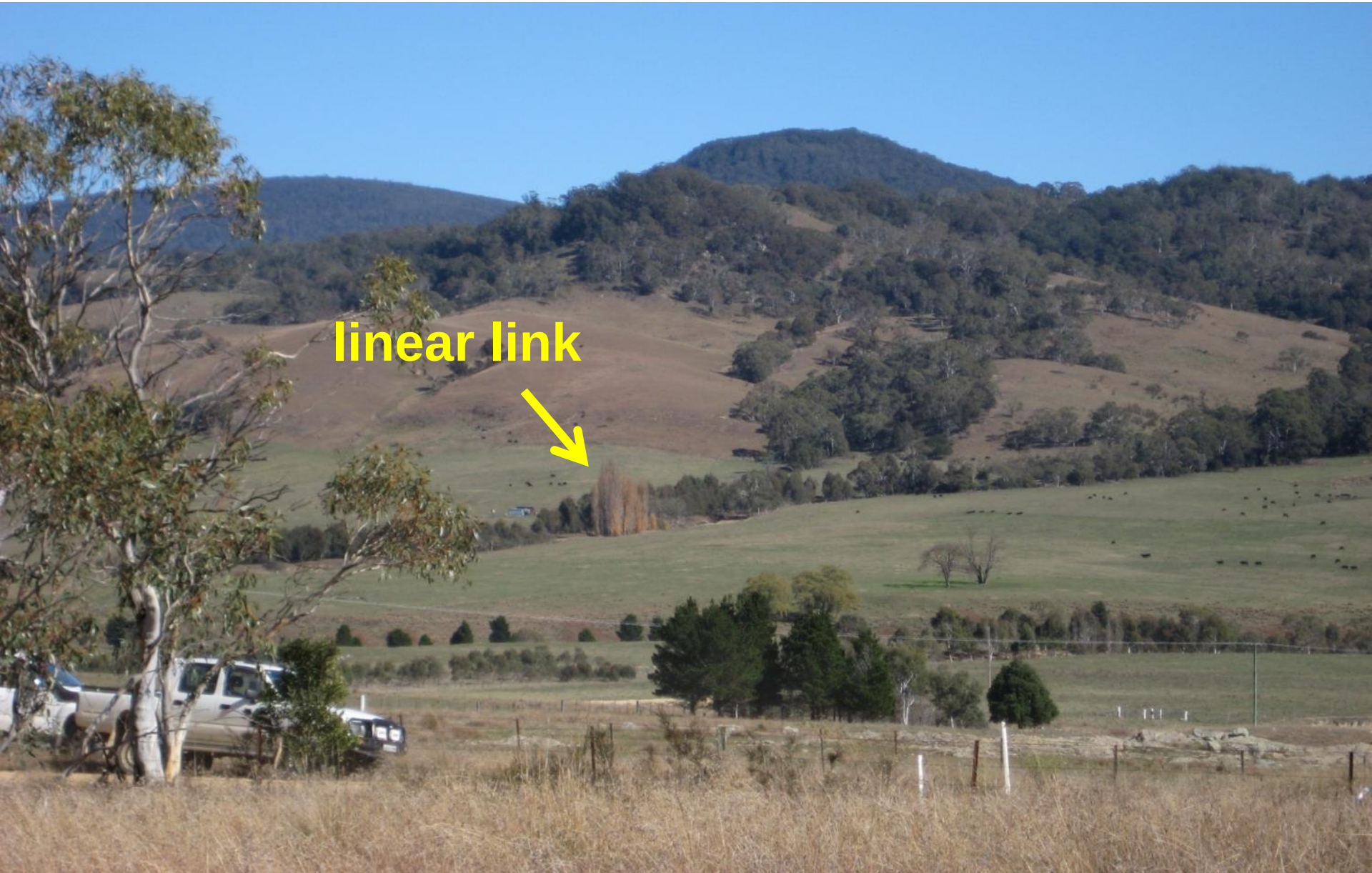
Woodland specialists where distance between patches <1.3km AND gaps <150m – moving through

Woodland generalists more abundant where gaps <100m – living there

General support for CSIRO FC Model

- Emphasis on scattered trees <150m – a density that supports movement of specialists & habitat for generalists

We used to design corridors...



…we need to *design* biolinks!

…we need to *design* biolinks!

Principles to make connectivity work

- Connect forest & woodland habitats <1.3km apart
- If they are farther apart, make more habitat in the middle

Principles to make connectivity work

- A variety of connections are possible (flexibility!), but messy scattered trees are better
- Keep the scattered trees <150m apart (open woodland)
- Make sure they are having babies

?

Principles to make connectivity work

- Talk, talk, talk to your neighbours!