Engaging Private Landowners in a Climate Science Project

John Gollan

(Australian Museum & UNSW)

NCCARF Biodiversity Roadshow 2011

nature culture **discover**

Australian museum

NSW Environmental TRUST

Australian Government
Australian Research Council

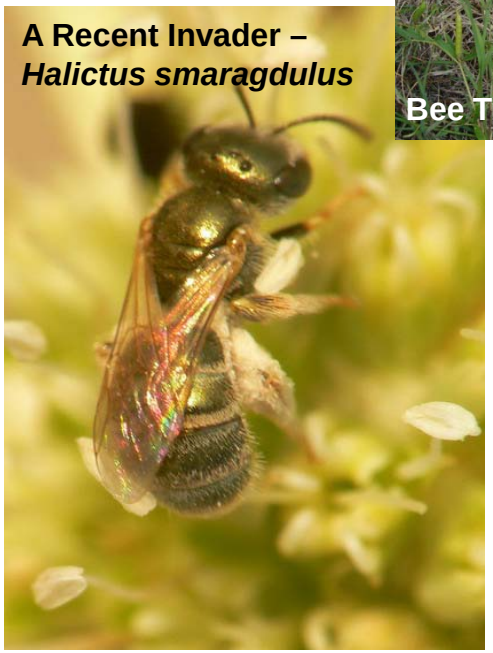
UNSW THE UNIVERSITY OF NEW SOUTH WALES

THE GREAT EASTERN RANGES
connecting people...connecting nature

AWRC Australian Wetlands and Rivers Centre

Central West catchment management authority

‘Raising Awareness about Biodiversity Conservation’



A Recent Invader –
Halictus smaragdulus

Bee Trapping Kit

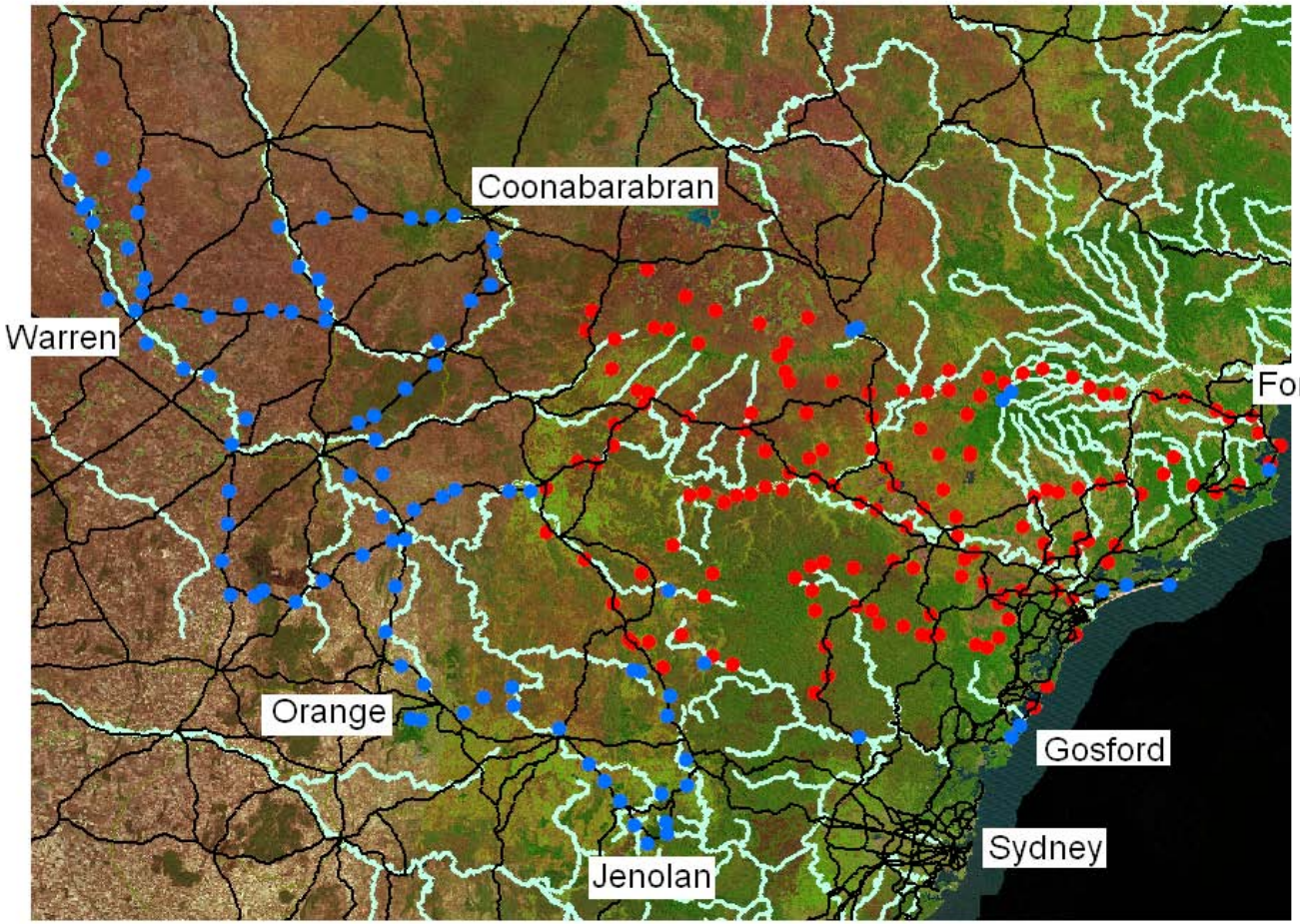
Community Workshops

Outline of Presentation

- Background – what, why and how it is being done

- Why we think engaging with private landowners has been successful

Hourly temperature and humidity recorded at 250 sites

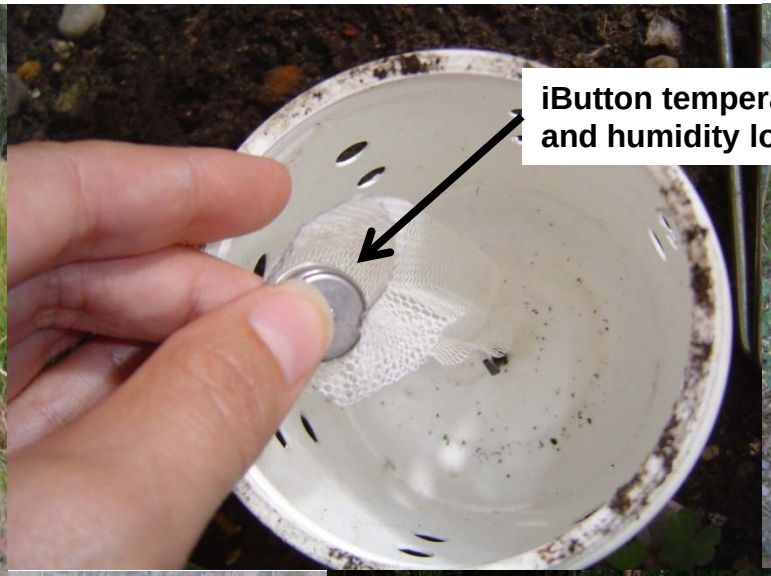


Since June 2009

Since December 2010

Temperature and Humidity

- near surface (5cm) in a range of environments



Rationale

The importance of the climate near the ground for biodiversity

Maximum temperature on hot summer day:

40^{o}C at 1.5m may equate to 50-60^{o}C at ground level*

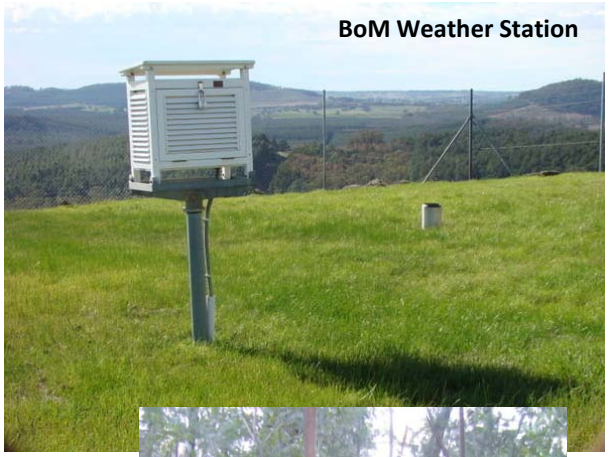
Minimum temperature on cold winters night:

2^{o}C at 1.5m may equate to -4^{o}C at ground level*

*Rudolf Geiger, 1971. The Climate Near the Ground. Harvard University Press. (Originally published 1927)

Rationale

Bias of ‘official’ weather station data

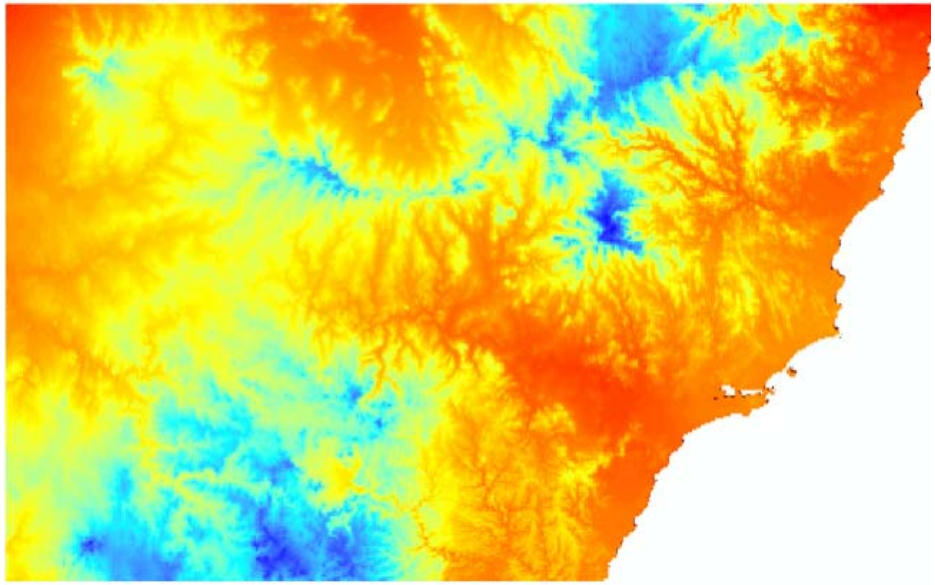


Standardised to:
- Aid comparison of climates between locations
- Ensure climate is representative of region

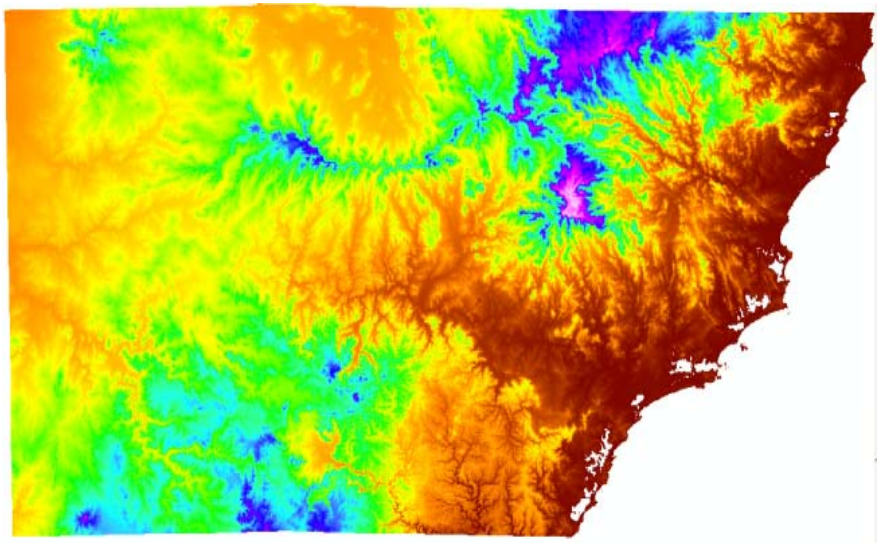
But, this introduces biases
- Can’t predict climate in forests under canopy
- Can’t predict climate in complex topography

How others have extrapolated climate data to other areas

Climate Surface produced using BioClim



Digital Elevation Model

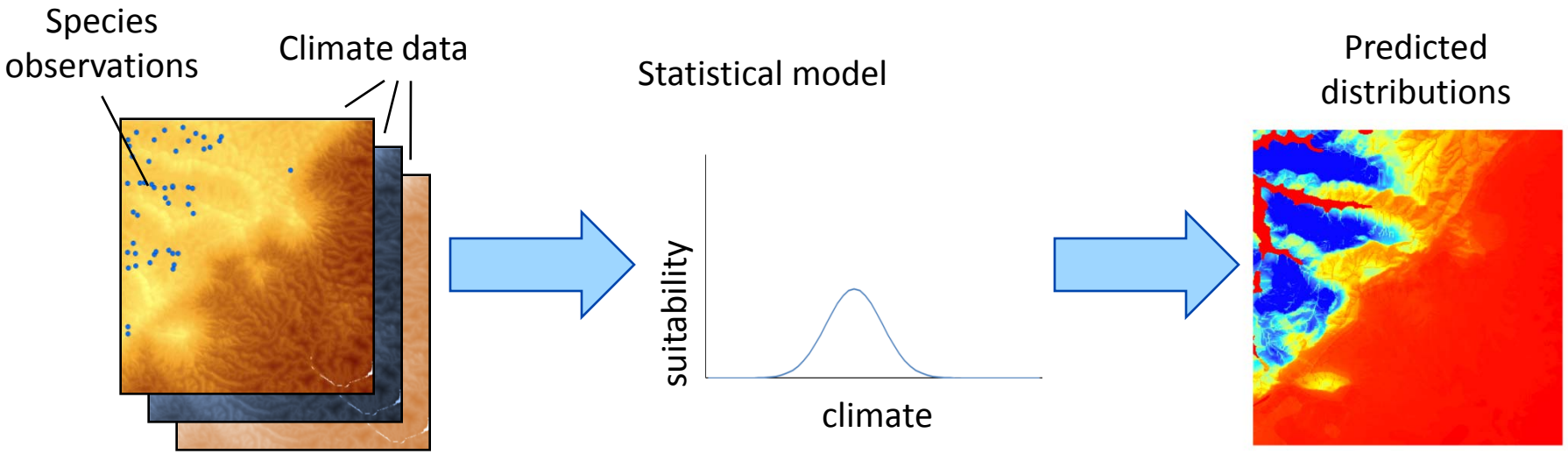


The predictions of climate warming

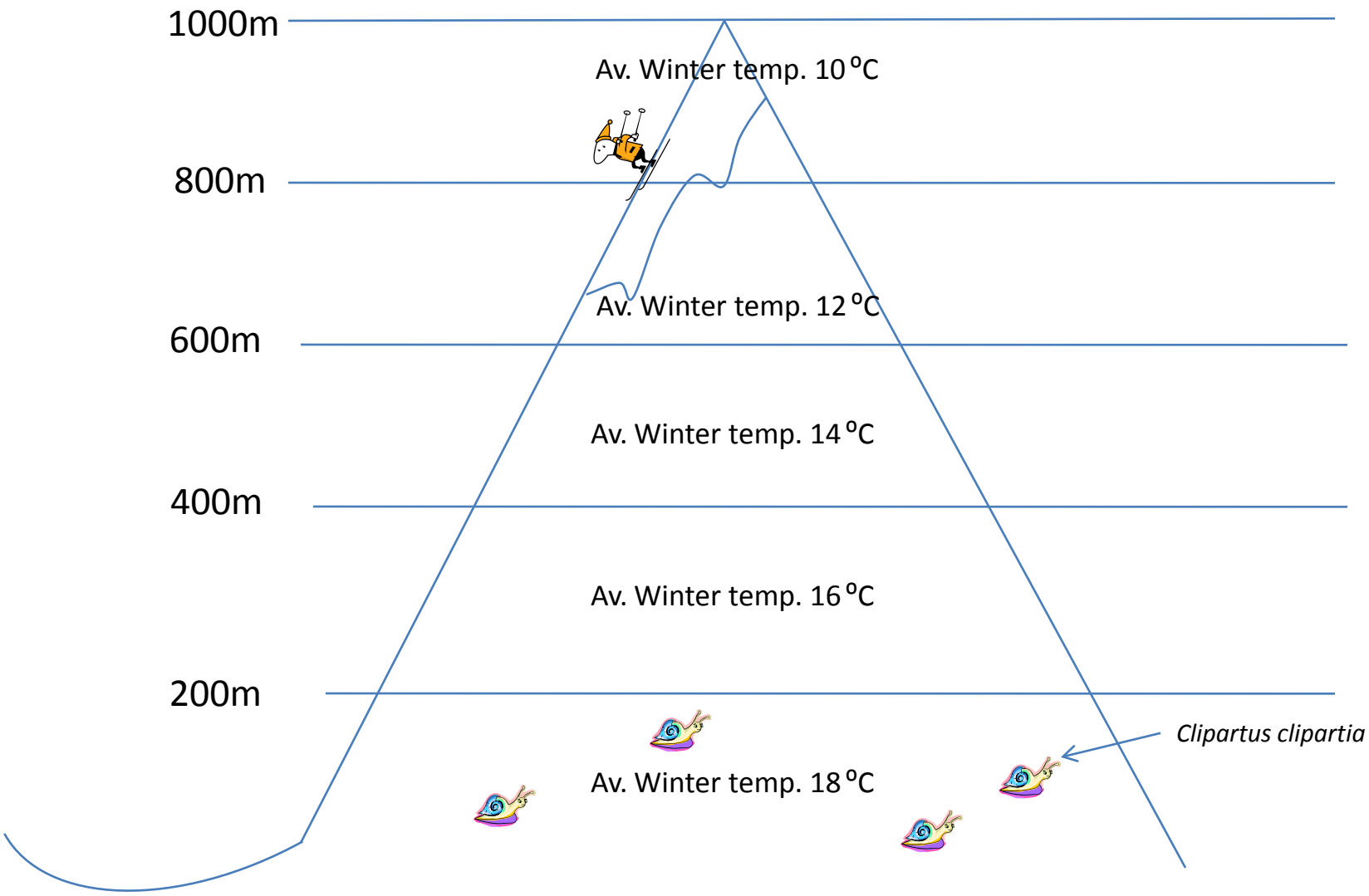
"...we predict, on the basis of mid-range climate-warming scenarios for 2050 [1.8– 2.0°C] , that 15–37% of species ... will be 'committed to extinction'."

Thomas et al., 2004, Nature 427: 145-148.

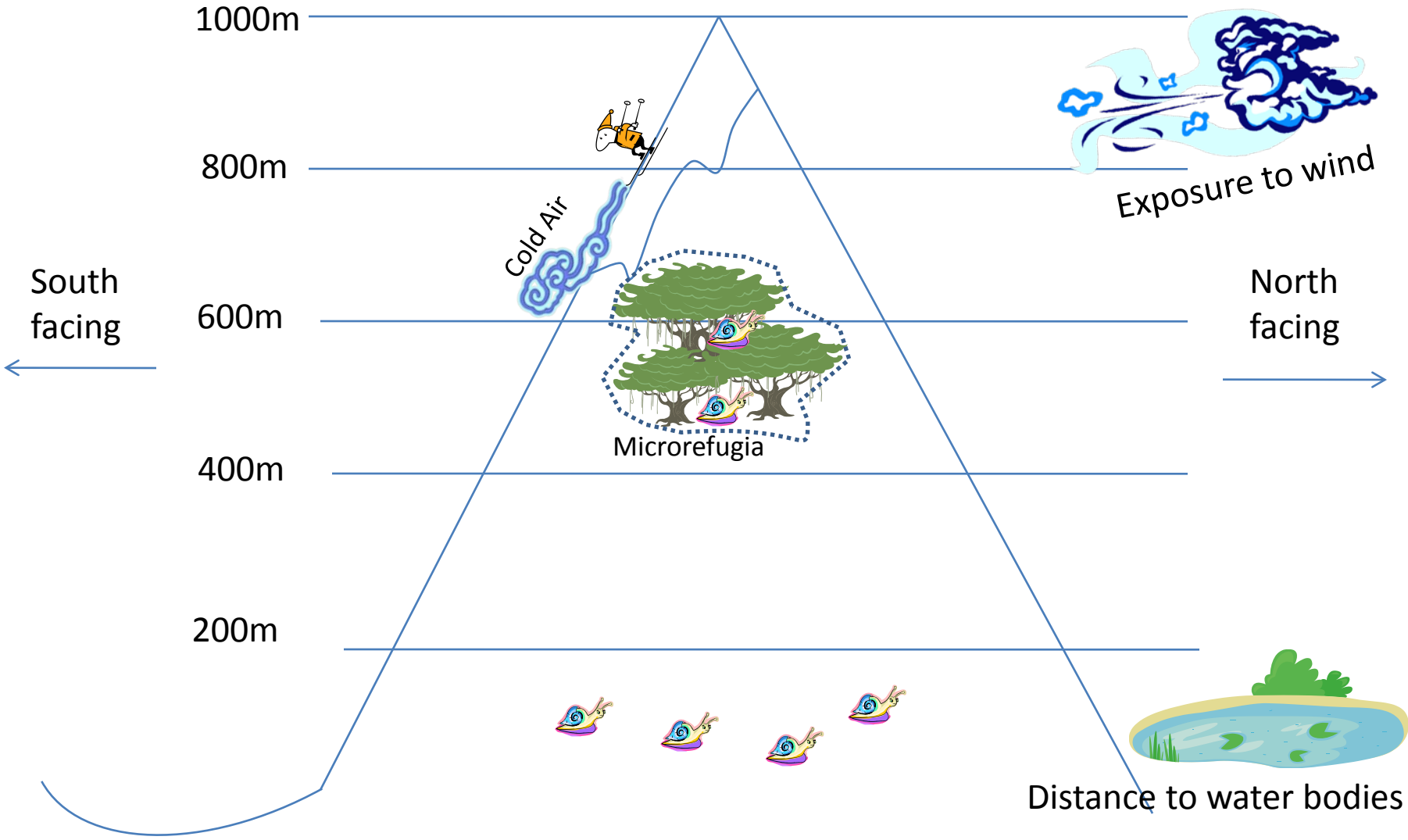
1730 citations (Google scholar, 20th April 2011)



A simplification…

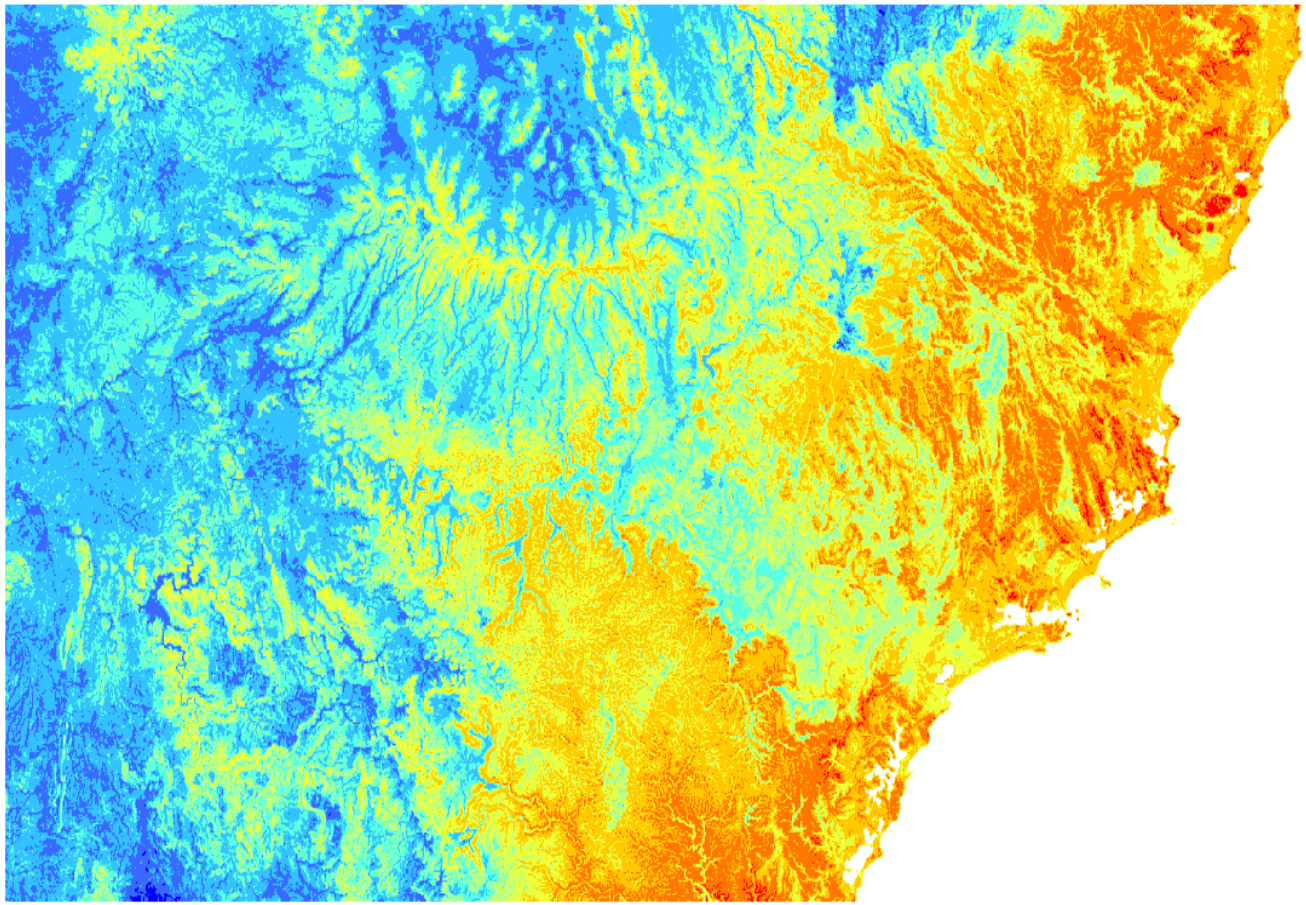


But it's much more complex



Our Extrapolations Across the Region

Models that consider:
- Elevation
- Canopy cover
- Cold air drainage
- Topographic exposure
- Coastal influences
- Latitude



How were land holders engaged?

Many Australian farmers are sceptical about climate change and do not believe it will affect agriculture during their lifetimes*

180 of 250 data loggers are on private land

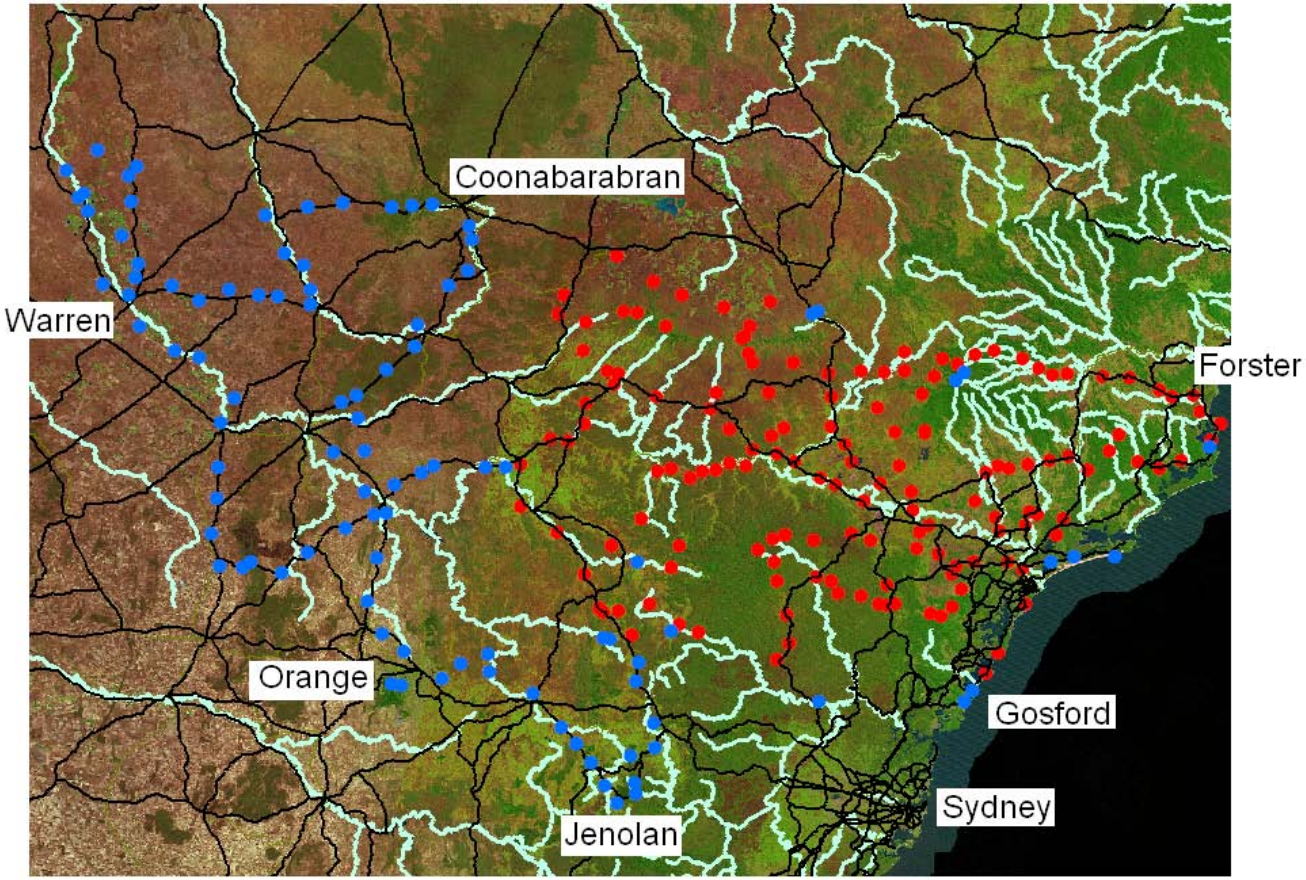
Contacted by 'cold calling' - and 95% willing to take part

The demographic:

1. 'Believers'
2. 'In-betweeners'
3. 'Deniers'

*Crimp et al (2010) *A Participatory Approach to Developing Climate Change Adaption Options for NSW Farming Systems,* CSIRO National Research Flagships Climate Adaptation.

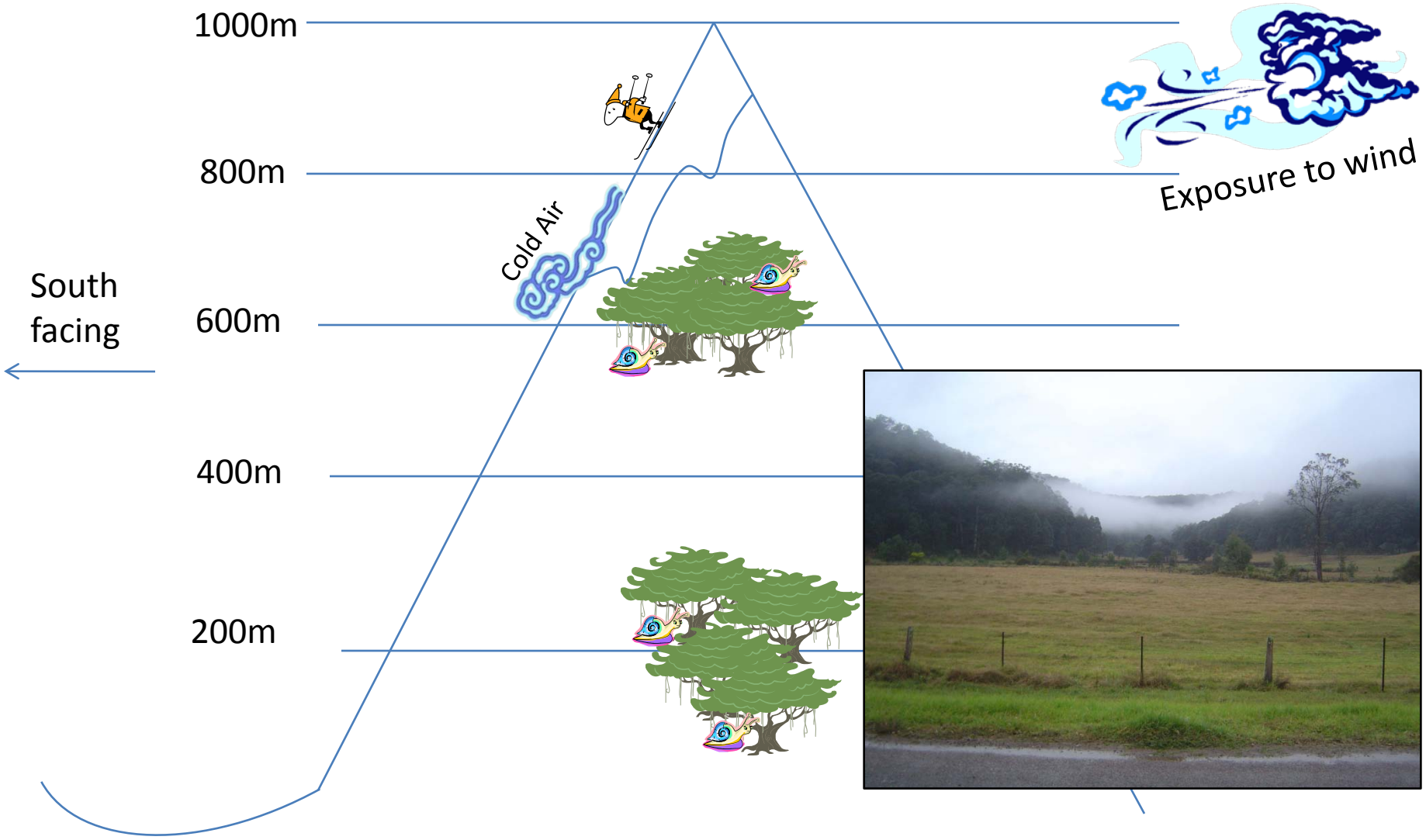
Relevancy of data at the scale of the landowner



Mutual respect – it's the little things that make a difference

- Sharing data
- Listening and not us telling
- Giving notice of arrival/departure
- Respect for property
- Invited as part of the Museum community

Speaking their language



The Power of a Hidden Commonality

Australian museum

Thank you

Dr Michael Ashcroft,
The NSW ET through the Great Eastern Ranges Initiative,
former DECCW, State Forests,
plus 180 private landowners

www.australianmuseum.net.au

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