



Agroforestry

*Growing trees for conservation
and profit*

Rowan Reid

Webinar for the



Lower Blackwood Catchment
Land Conservation District Committee

I'm a Forester



A Forest Scientist

B.For.Sci. M.For.Sci.



Senior Lecturer
till 2010



Native Forestry!

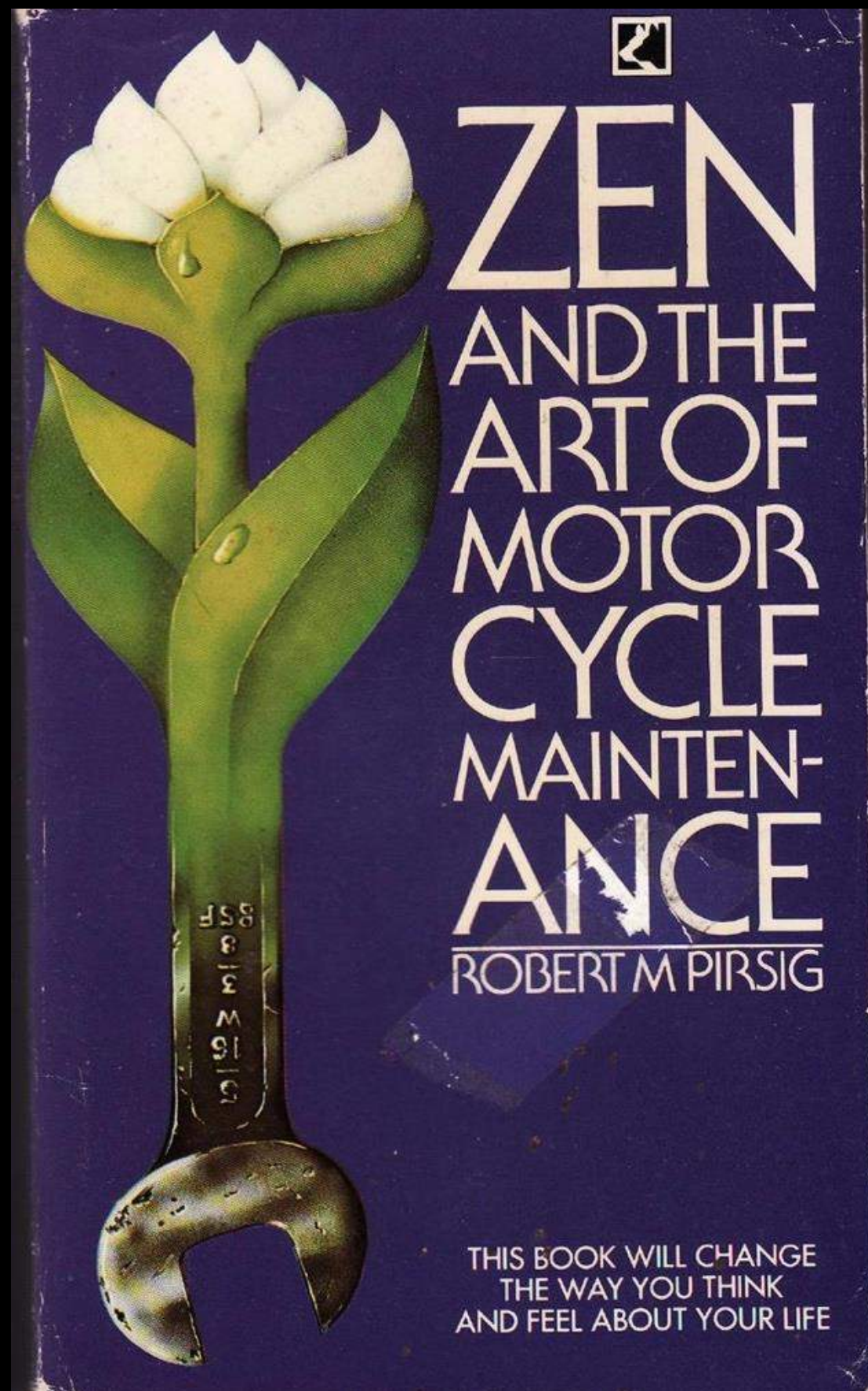


Monoculture Plantations!



Ugliness is not inherent in forestry

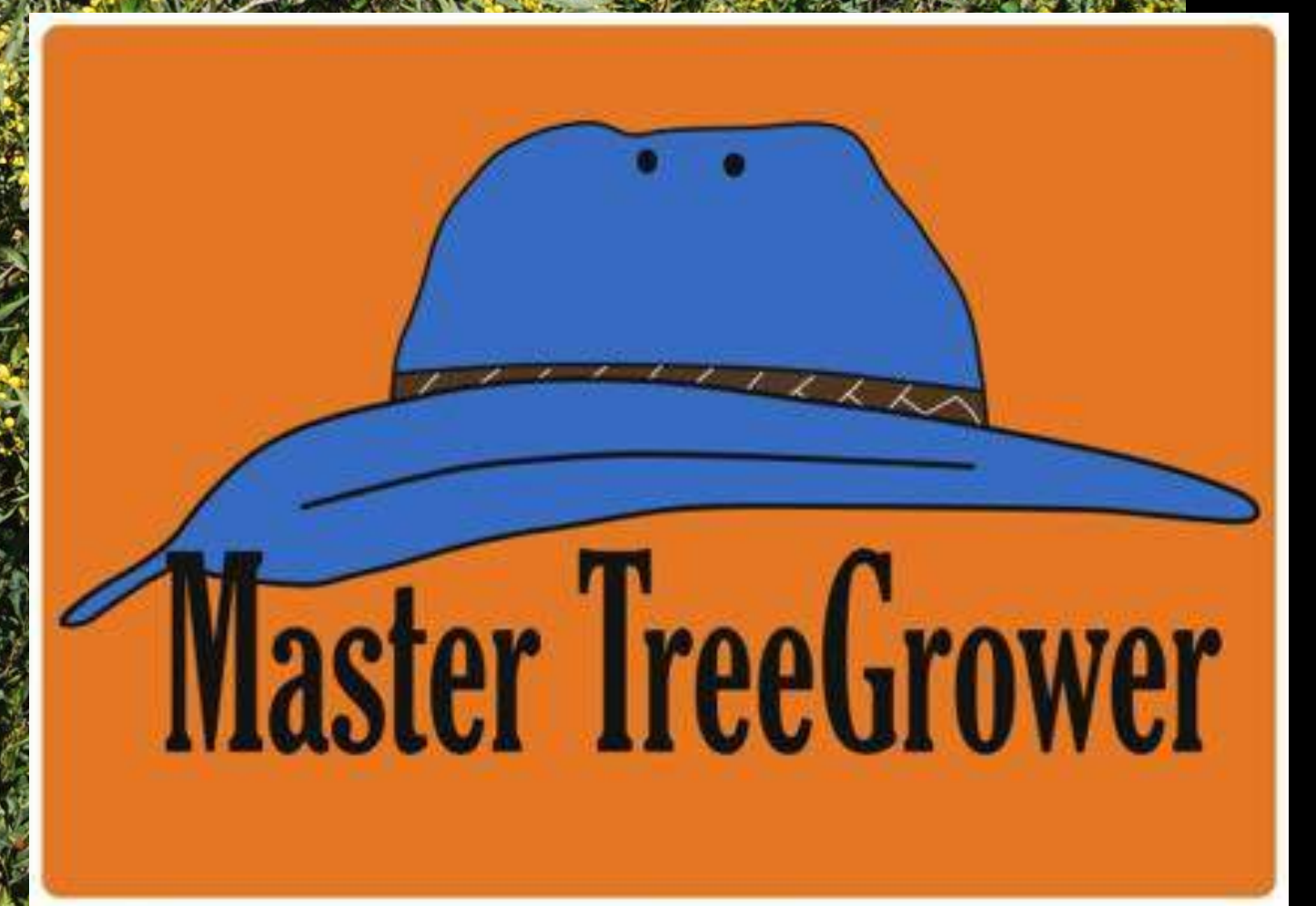




Ugliness is not inherent in technology

Forestry is just the growing of trees and cannot by its own nature be ugly or there would be no beauty in gardens, which also involve growing trees.

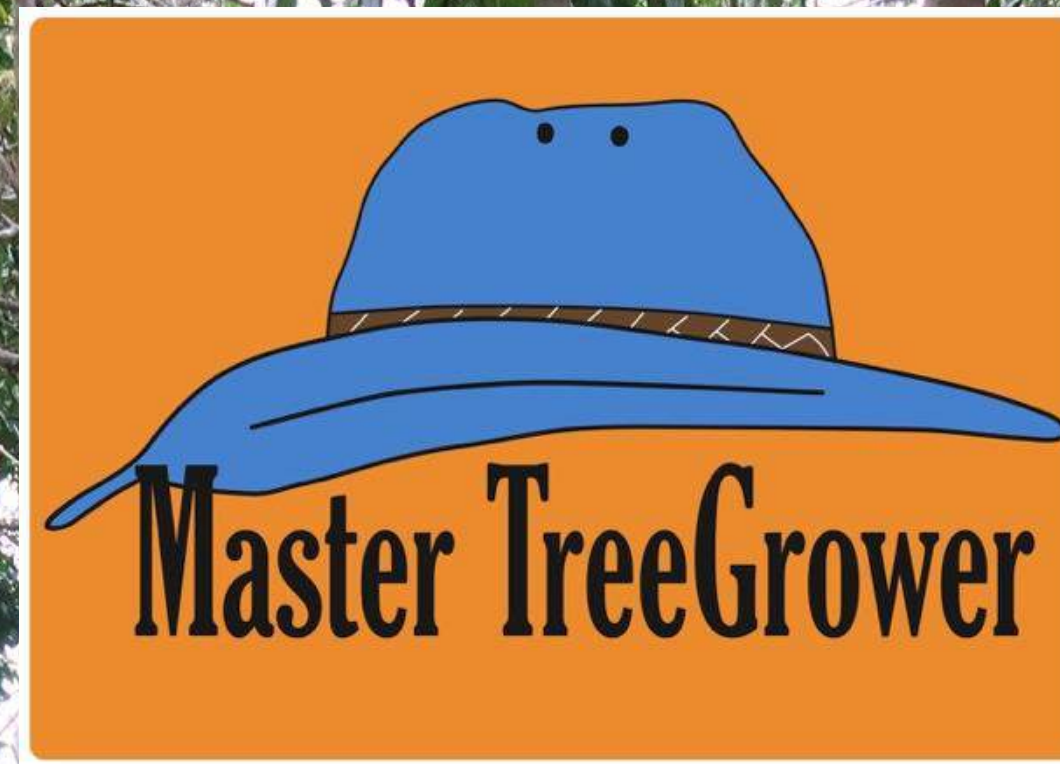
Creating beautiful and productive landscapes ...with trees



The Australian Master TreeGrower Program







Timor Leste

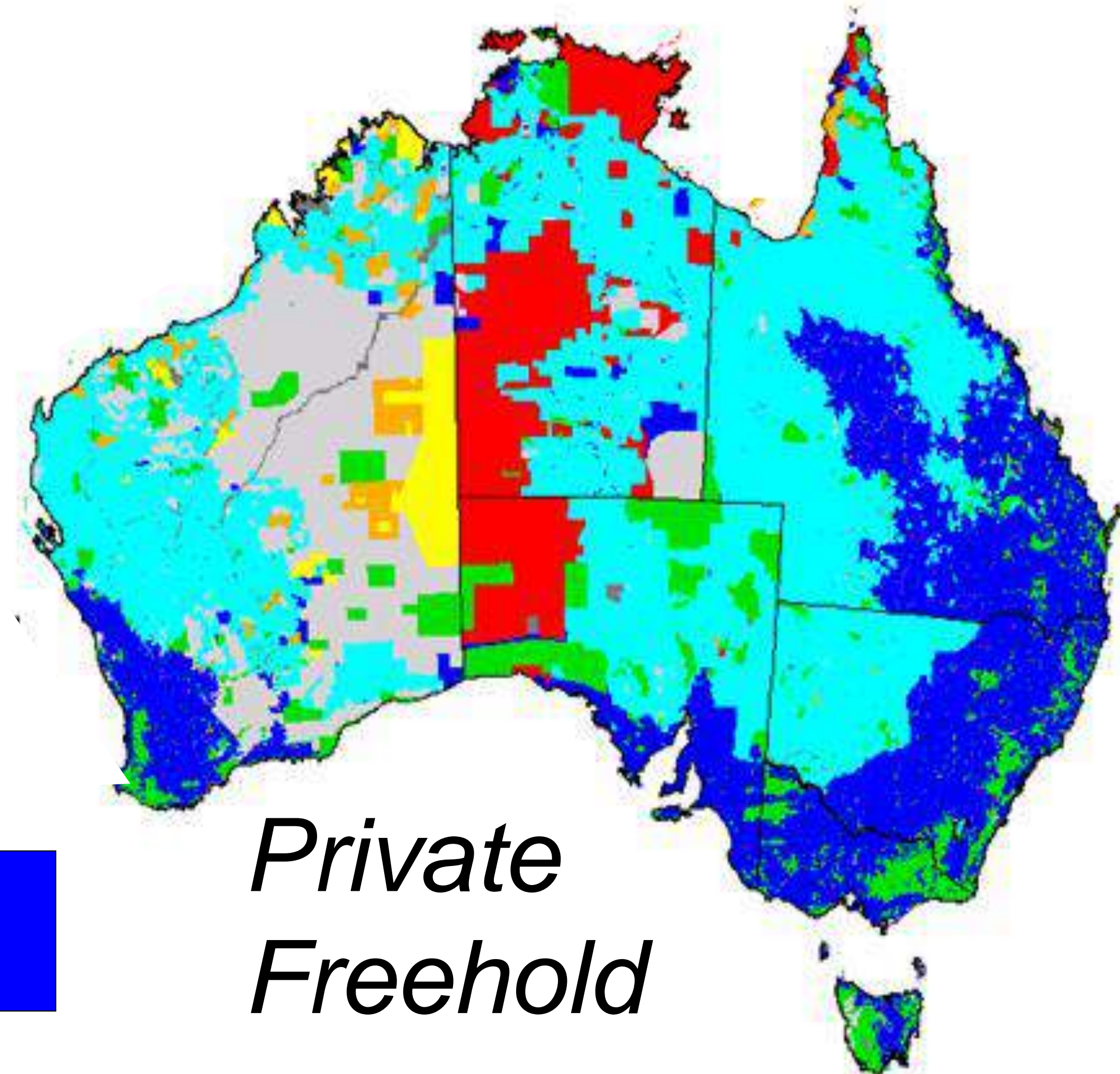
Farmers growing trees for the reasons that are important to them



Forestry as a tool of
“regenerative agriculture”



Cleared by farmers for farming



*Private
Freehold*

The real conservation issue = 61% of the landscape





**Forestry
for
profit**

**Forestry for
conservation**



**Forestry for
conservation
and profit**

Bambra Agroforestry Farm

Make *forestry*
attractive to
family farmers

1987



Bambra Agroforestry Farm

This meant
changing
forestry

1987



Plant for Conservation & Agriculture



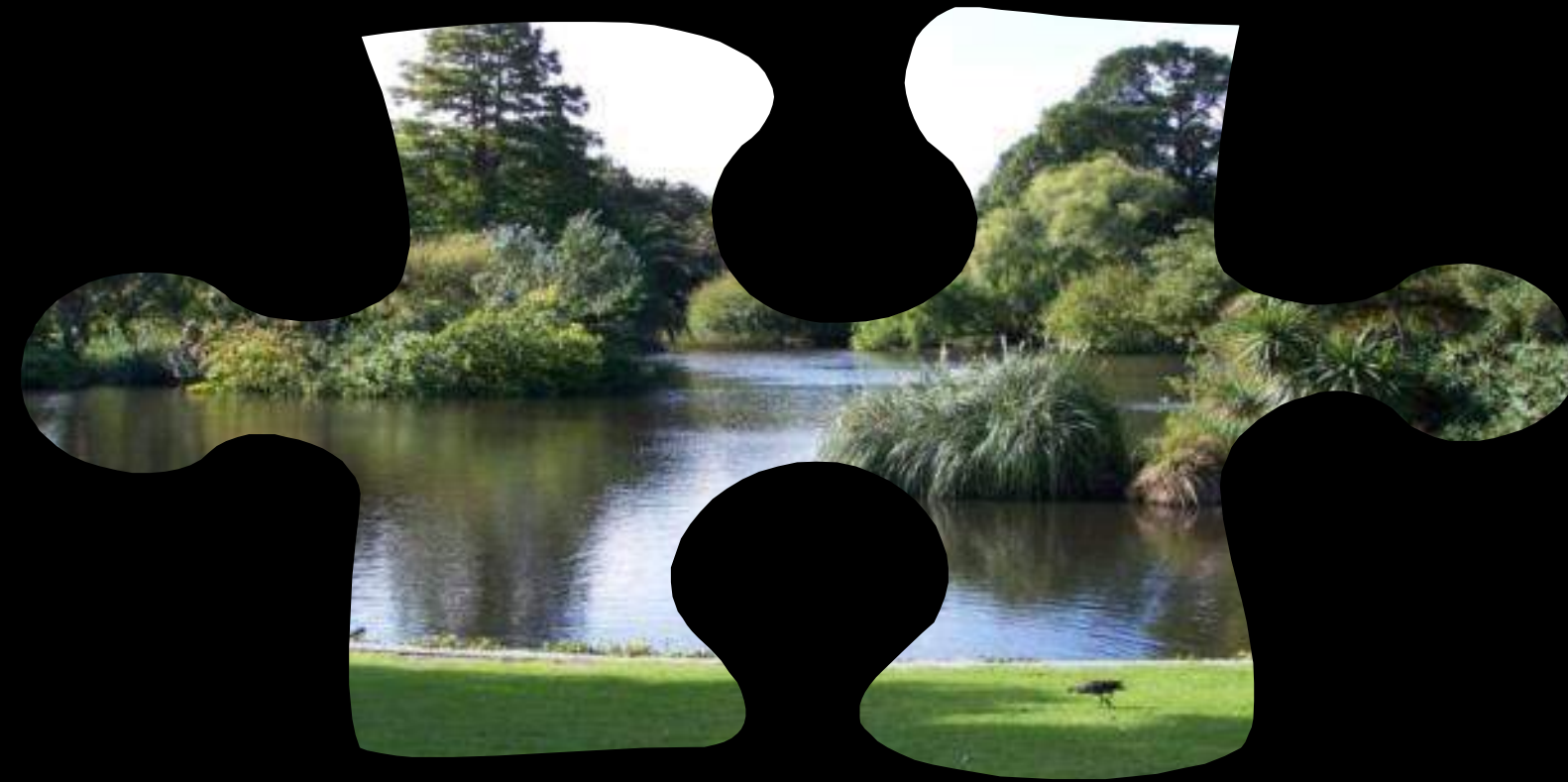
Manage to create opportunities (\$)



After 14 years

Trees on farms for multiple values

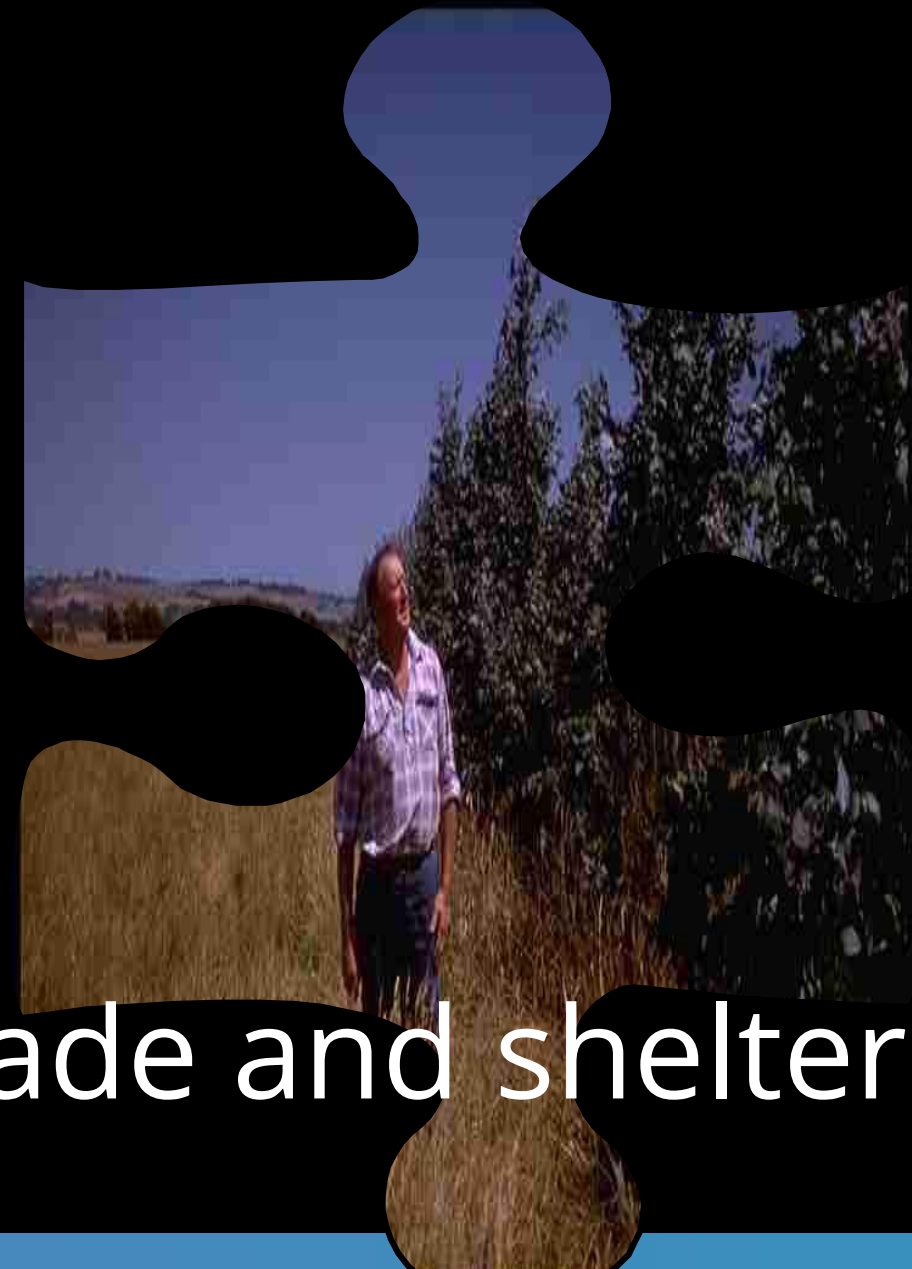
Aesthetics



Conservation and biodiversity



Shade and shelter



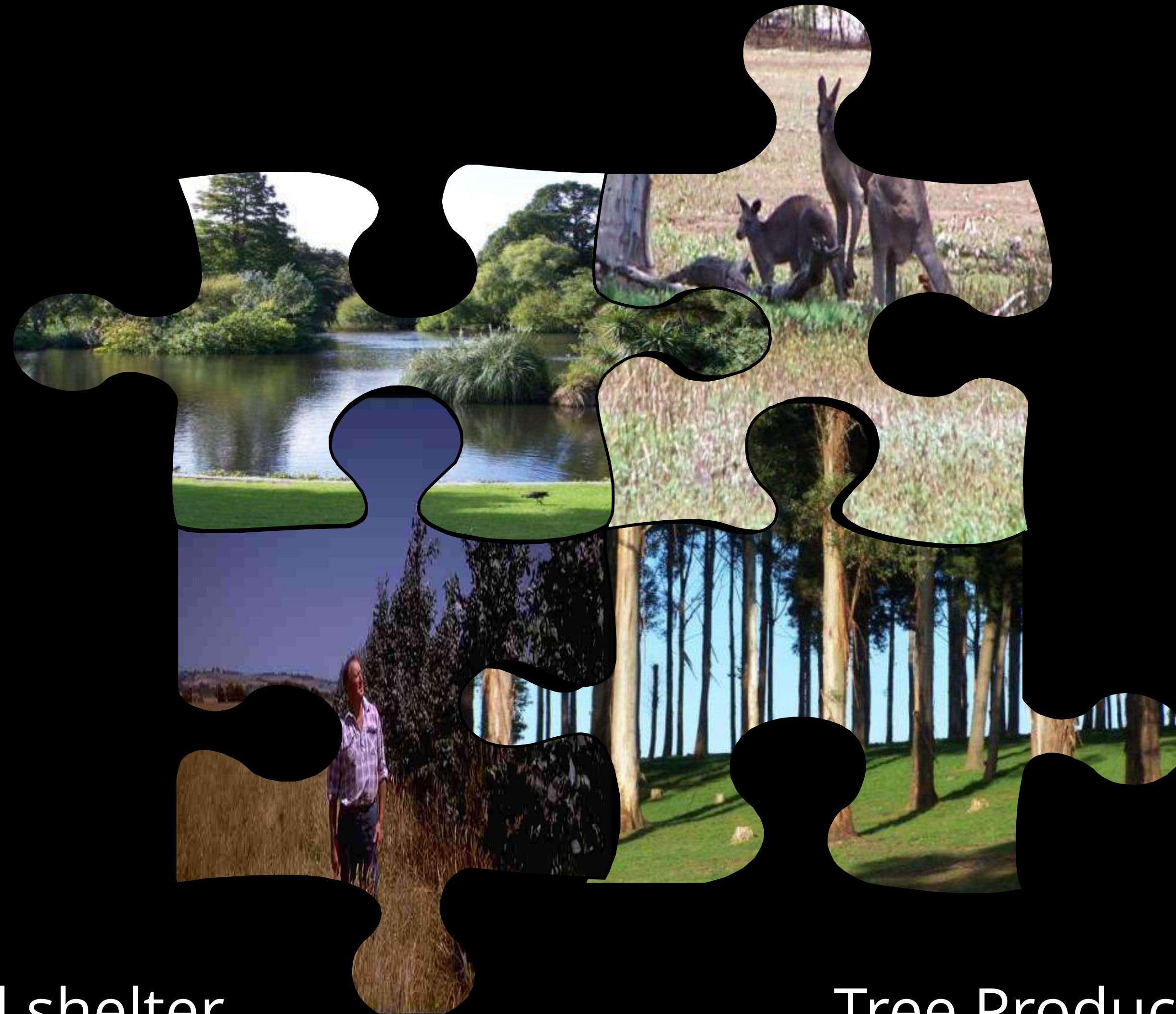
Tree Products



Trees on farms for multiple values

Aesthetics

Conservation and biodiversity



Shade and shelter

Tree Products



Timber would be a by-product of growing and managing trees for

- Soil and Water
- Biodiversity
- Shade and shelter
- Aesthetics

Active management is the key





I don't just let
*"Nature take its
course"*



Blackwood
Acacia
melanoxylon



4-years-old



NORWOOD

LumberPro

NORWOOD





Messmate
Stringybark
Eucalyptus
obliqua







\$200 tree - \$2000 wood - \$20,000 furniture



Mark Tuckey Furniture,
Melbourne



Wood is 50% carbon

Volume of the block	1000 cm ³
Weight of the block	850 grams
Moisture content of wood	12%
Bone dry weight of the block	760 grams
Carbon content of dry eucalypt wood	50%
Carbon weight in block	380 grams
CO ₂ Equivalent (multiple by $\frac{44}{12}$)	1.4 kg
Volume of CO ₂ (1kg = 0.55m ³)	0.8 m ³
Diameter of a ball containing the CO ₂ gas locked up in the block of wood	1 metre

There is still a forest – growing and locking up carbon



Carbon
“factory”

Not just a
carbon
“sink”

Riparian Strips











ATO Office Dandenong





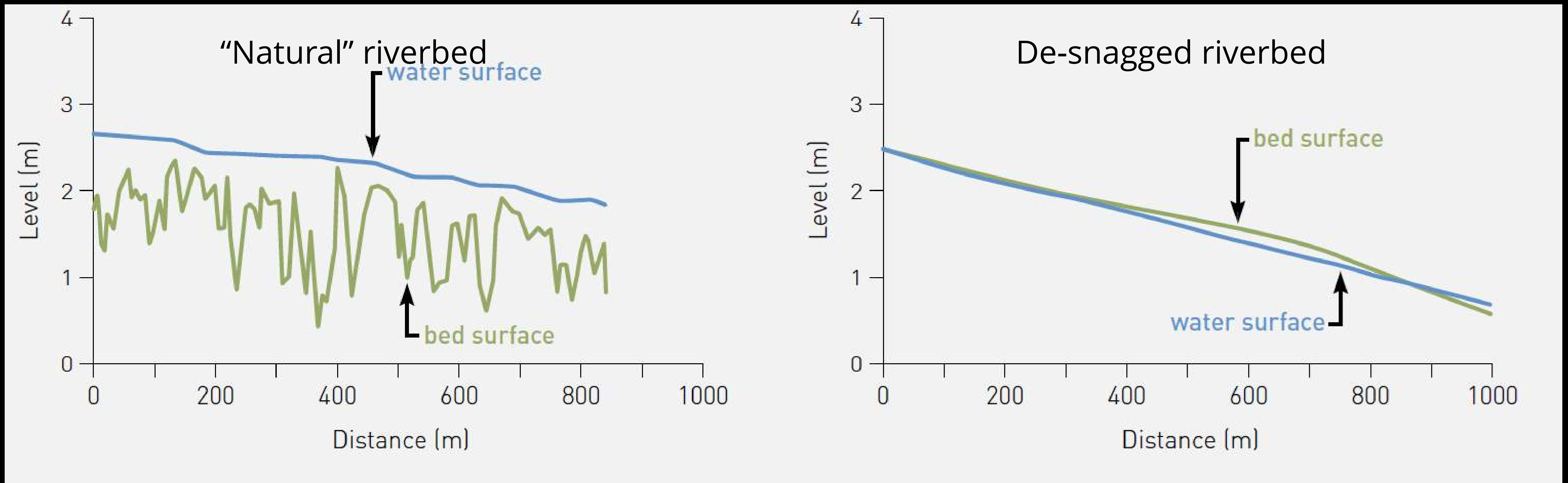
Shining Gum veneer by David Emery - Bungendore Wood Works Gallery



Wood in Waterways

Logs in Waterways

Comparison of 2 Gippsland rivers



In:

Design guideline for the reintroduction of wood into Australian streams

Wood on the ground - "Messy farms"

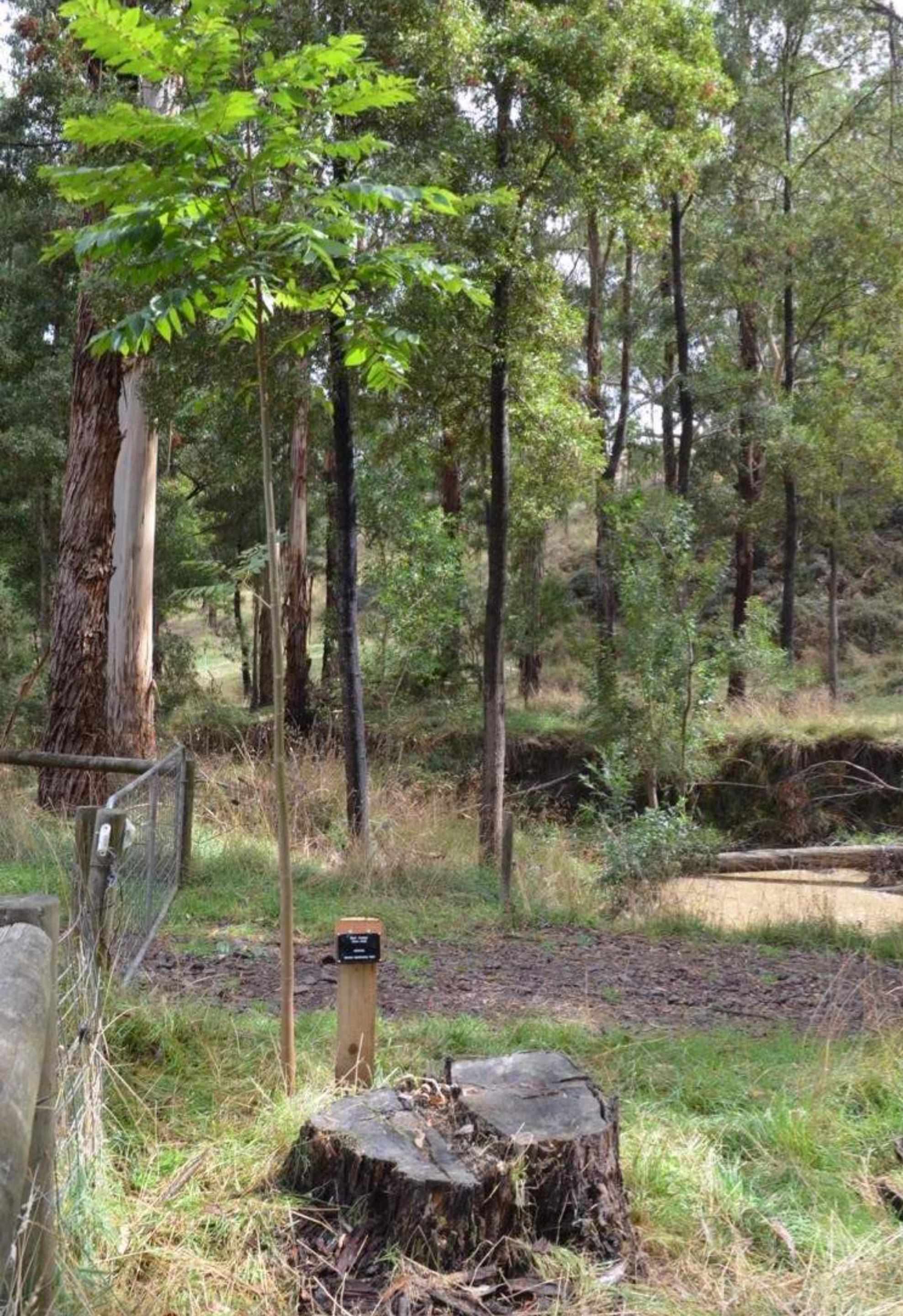




Brown Antechinus
Antechinus stuartii

*“During the day it can be found in large communal nests in tree hollows, crevices or **logs on the ground.**”*

<https://australian.museum/learn/animals/mammals/brown-antechinus/>



Stumps

Dead

OR

Alive



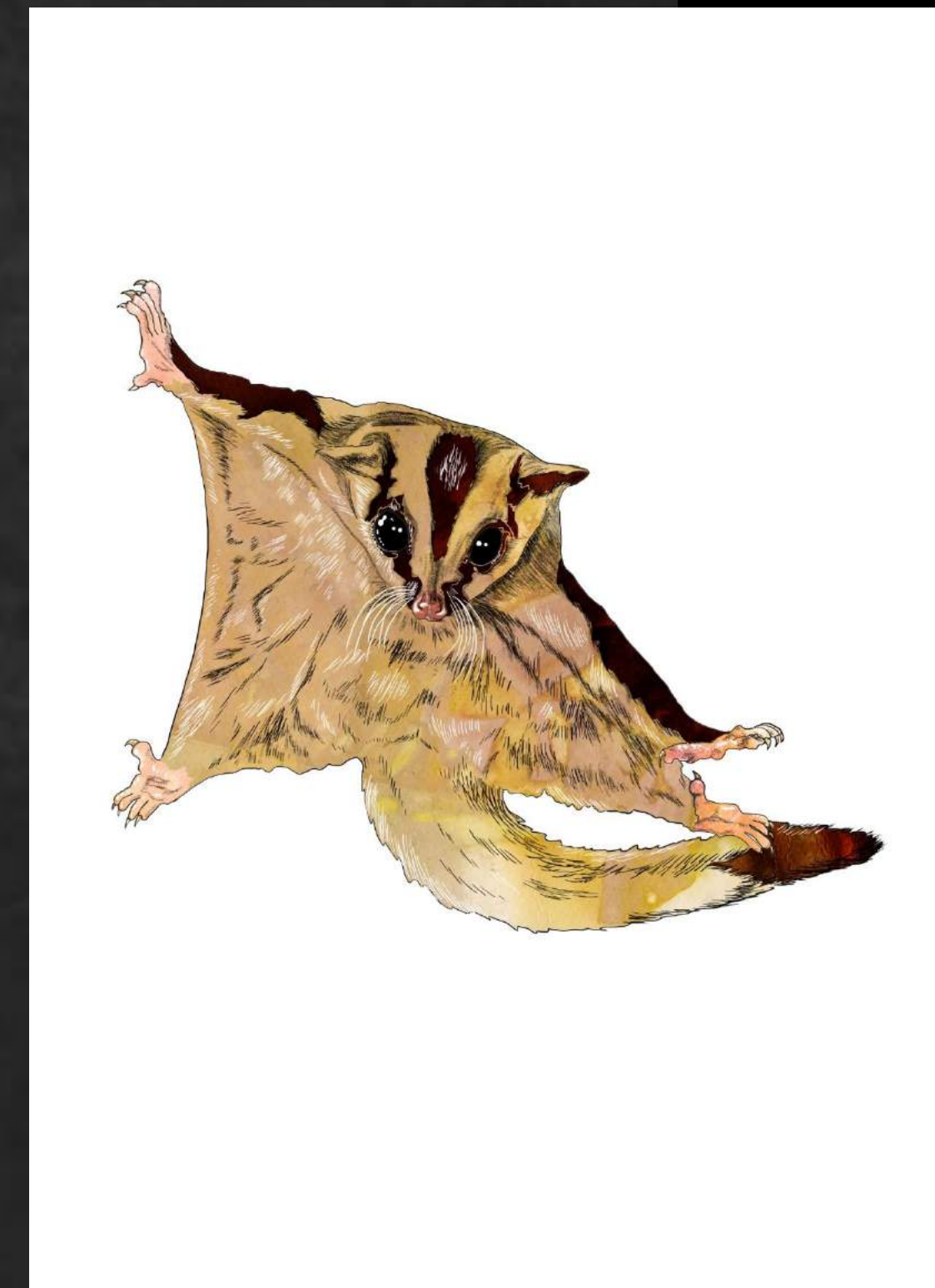
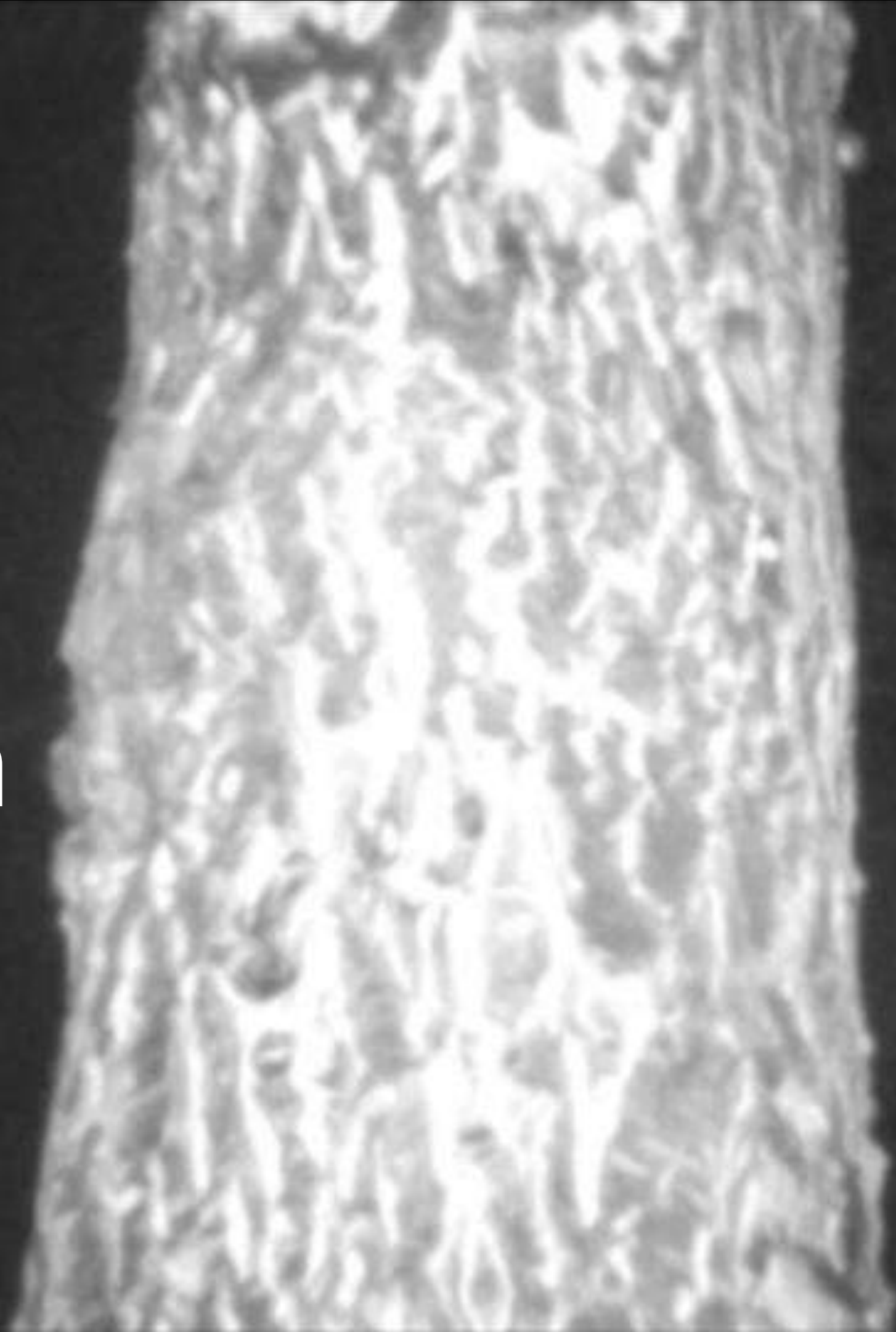


Chapter 5

Australian
Silky Oak
Grevillea
robusta

Feed Trees

Sugar
Glider
feeding on
Silky Oak in
winter





Silky "Oak" rays



She "Oak" rays



River
Sheoak
*Casuarina
cunning-
hamiana*

Drooping Sheoak *Allocasuarina verticillata*



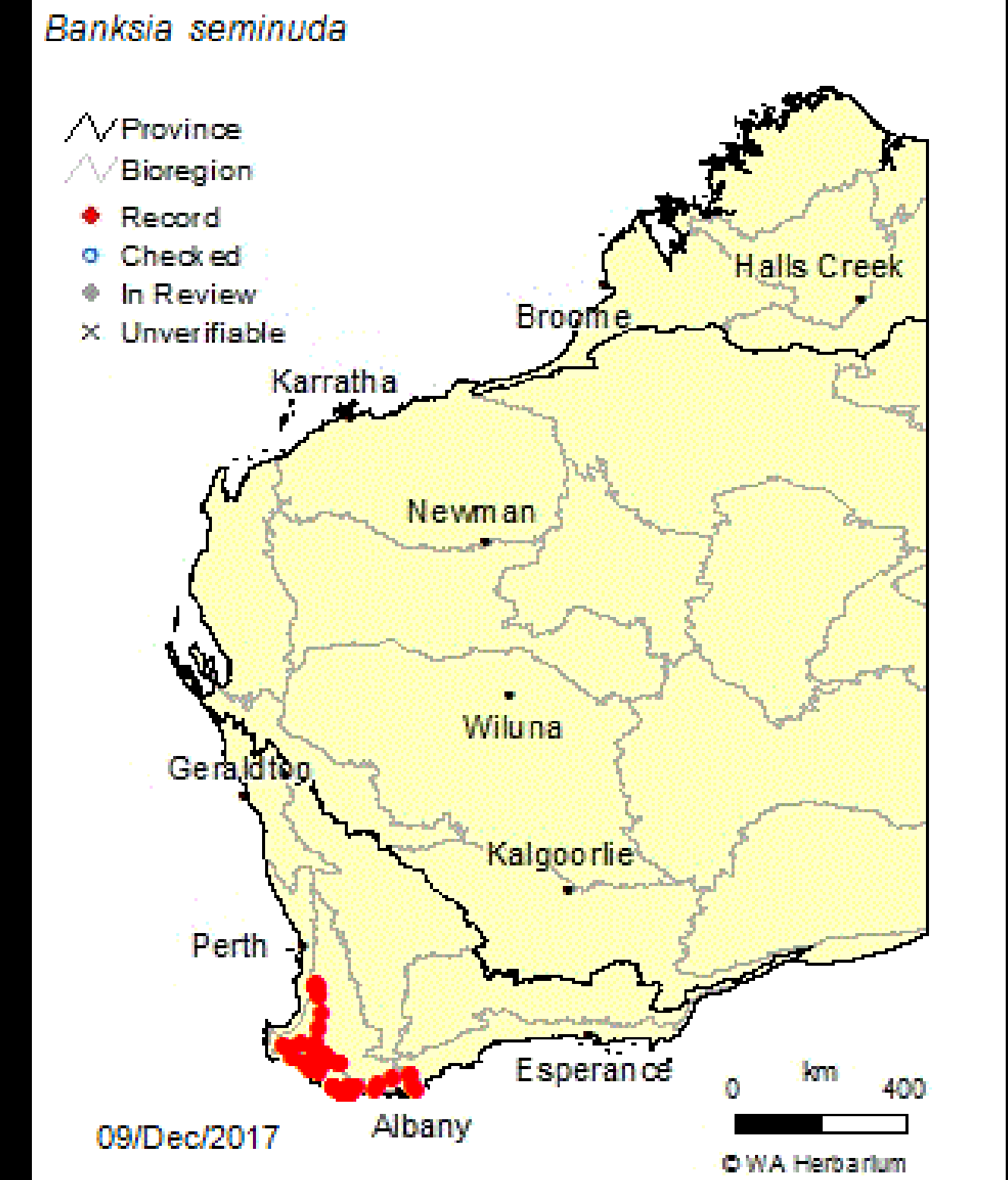
Yellow-tailed Black Cockatoo - Pines



Red-tailed Black Cockatoo
(Sheoak and Banksia)



Banksia seminuda WA River Banksia



Harvesting

Can drive succession (mixed age/species)

– Not just rotations



Underplanting eucalypts -



Understory can be productive

– future timber, bush food



Australian Red Cedar



Native Pepper



Australian
Red Cedar
Toona
ciliata var.
australis

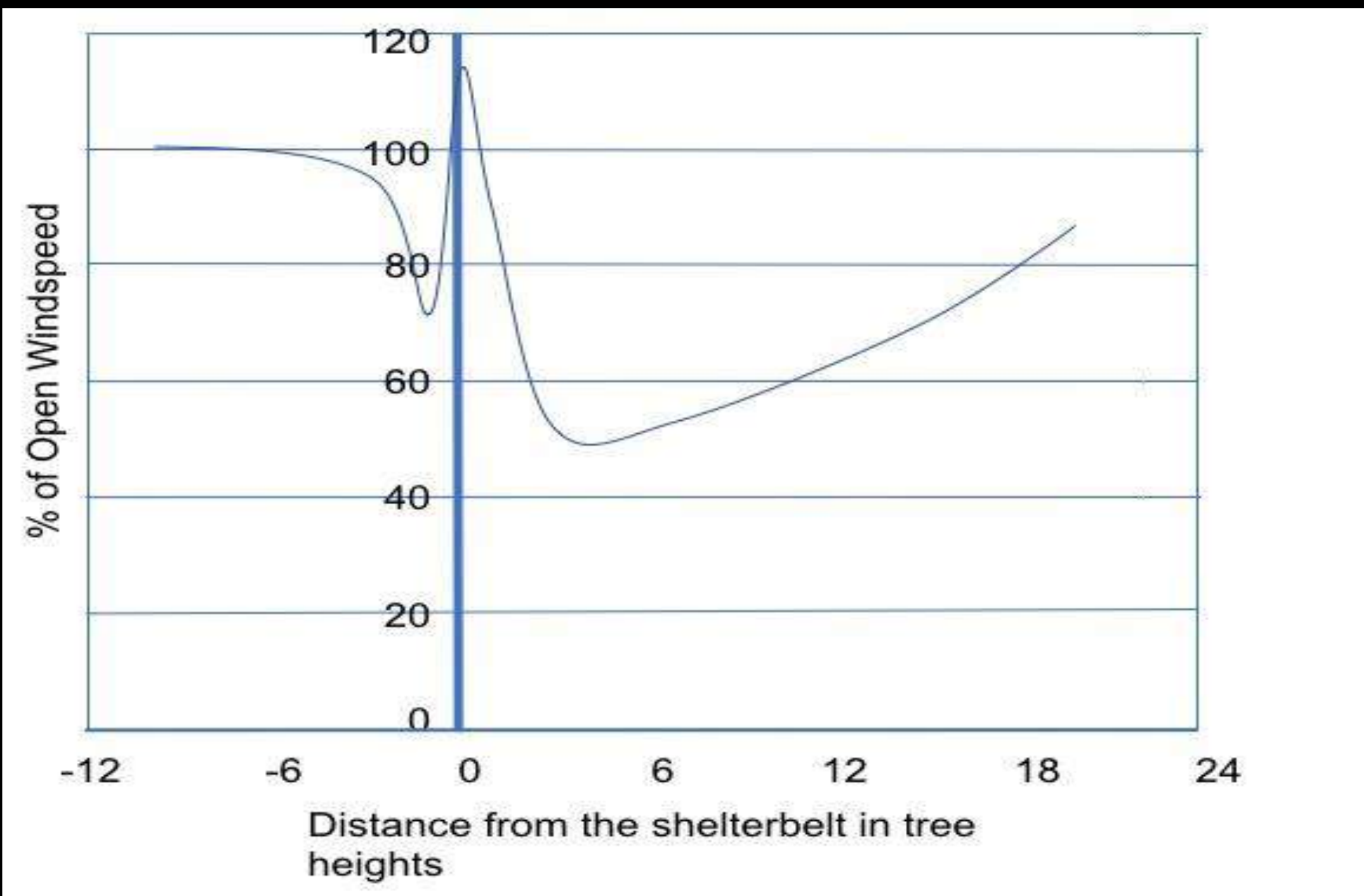


Albury Botanical
Gardens





Spotted
Gum
*Corymbia
maculata*







A place for exotics

Coast
Redwood
*Sequoia
sempervirens*

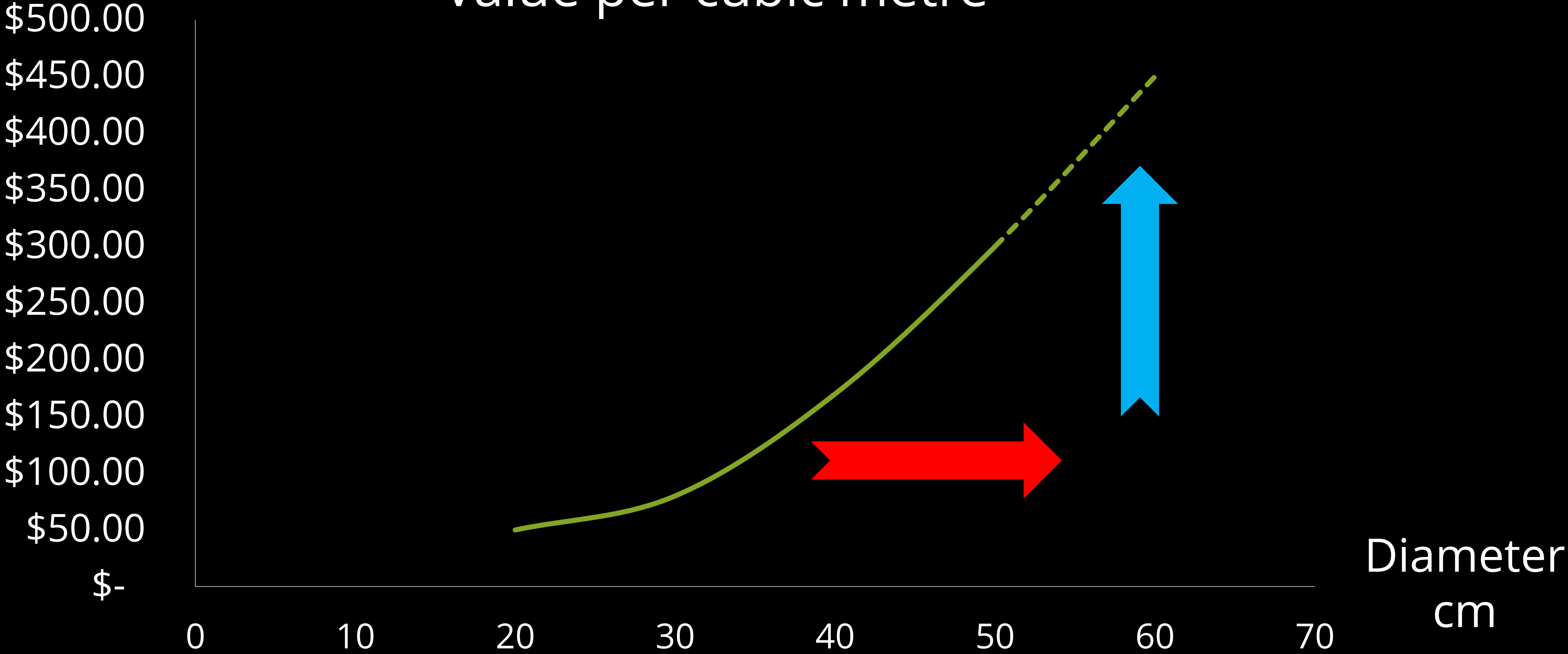


New Zealand Redwood trial

38-yr-old trees

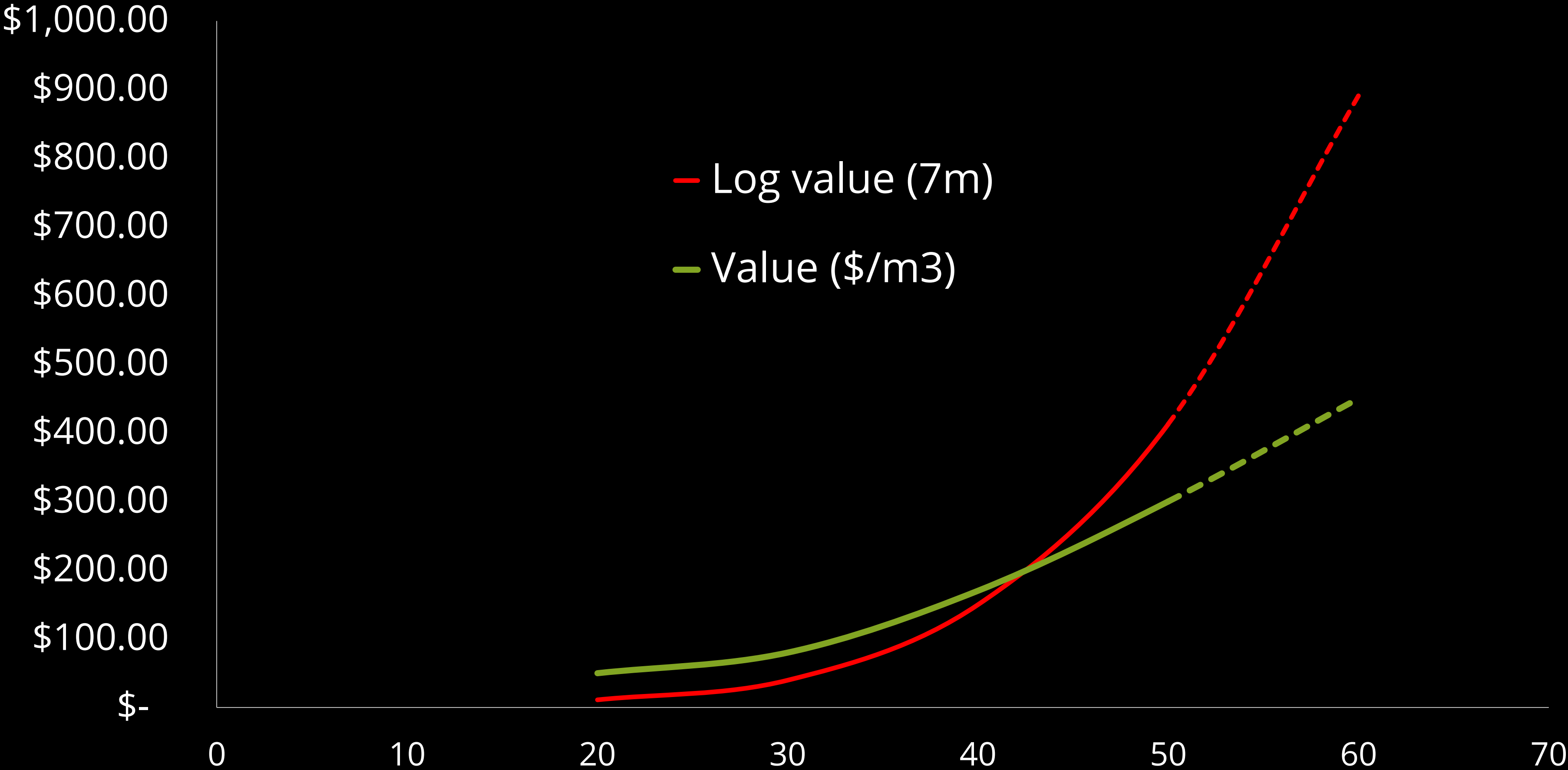
<https://www.nzffa.org.nz/farm-forestry-model/resource-centre/tree-grower-articles/tree-grower-february-2009/some-results-from-the-mangatu-redwood-sawing-study/>

Value per cubic metre



What is my log worth

Value of a 7m long Redwood log

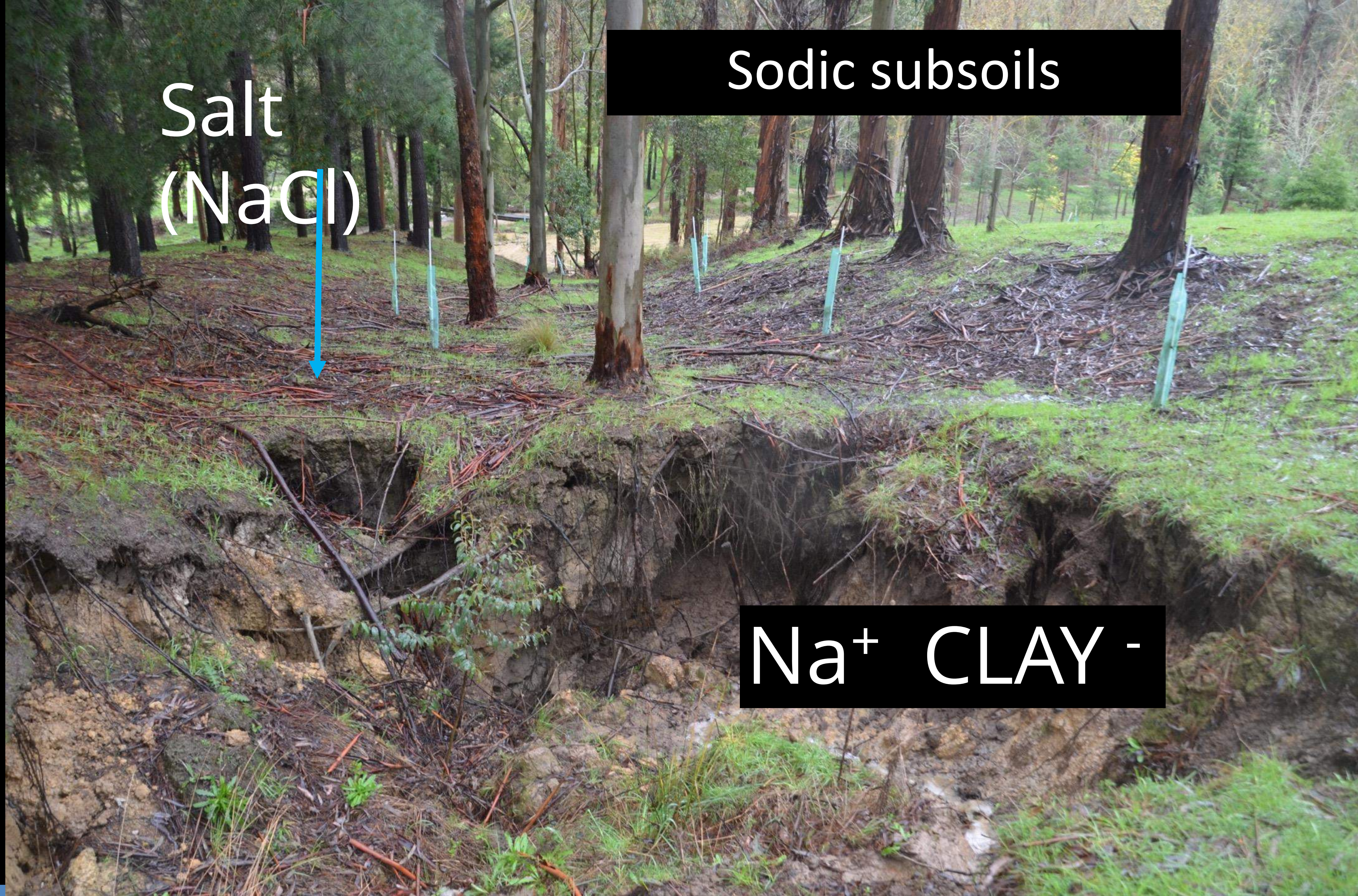


Sodic subsoils

Salt
(NaCl)

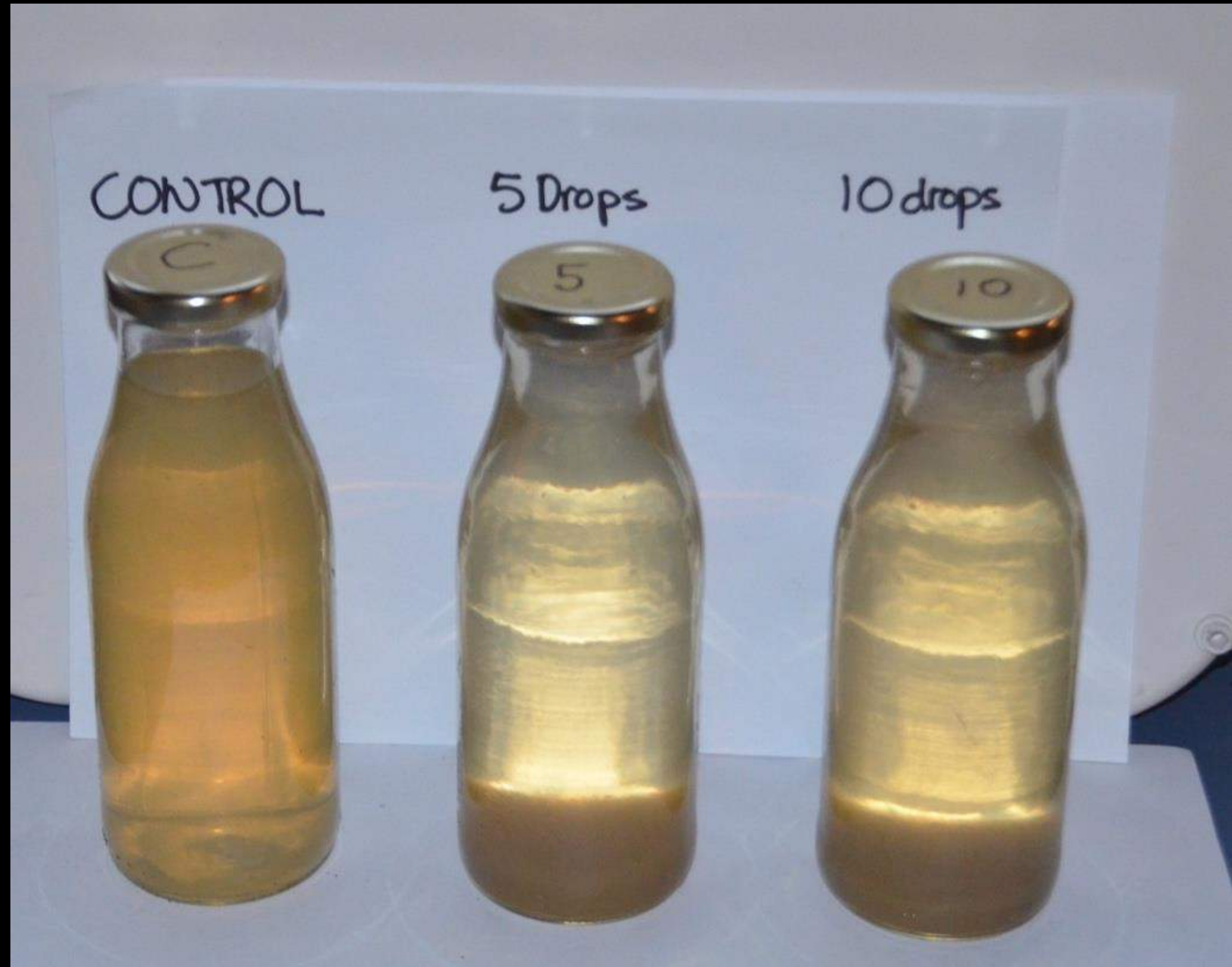


Na^+ CLAY⁻



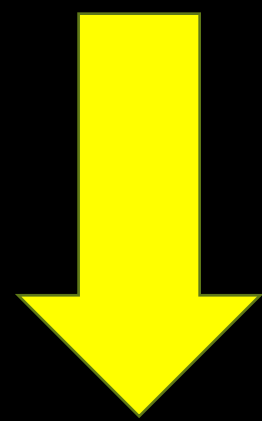
Aluminum Sulphate (or Gypsum)

Al^{+++} or Ca^{++} & Clay^{--}



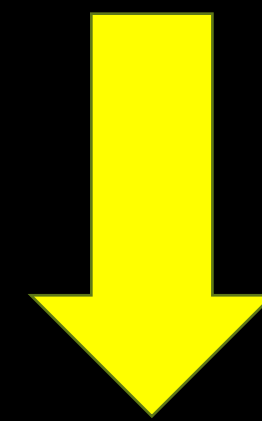


Co-operation



- Mutual Shelter
- Root grafting
- Fungal networks

Competition



- Light
- Water
- Nutrients



Coast Redwood: About 250 trees per hectare, average spacing of about 6 m



Mountain Ash: About 120 trees per hectare, average spacing of about 9 m



English Oak: About 75 trees per hectare, average spacing of about 11.5 m







encer, L. Dorton and C. Neff





Poplars and
Willows
Populus and
Salix







Black
Walnut
Juglans
nigra



We grow oaks for fire protection: A conservation practice?





English
Oak
Quercus
robur







English Oak



Faster growth = much heavier wood



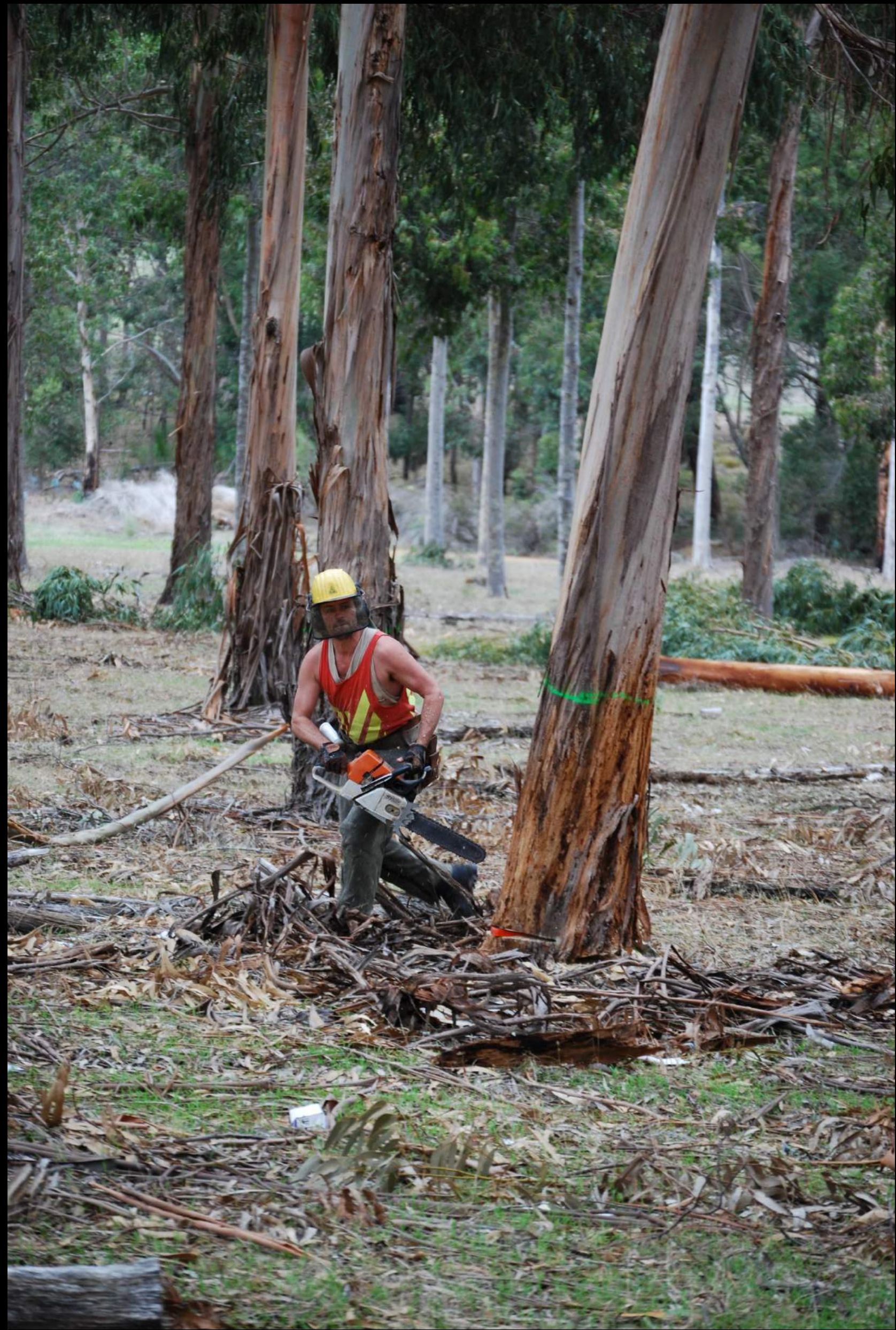


















A diversity that reflects the inherent diversity within our community



Our legacy will also be in the trees that others plant for the reasons that are important to them

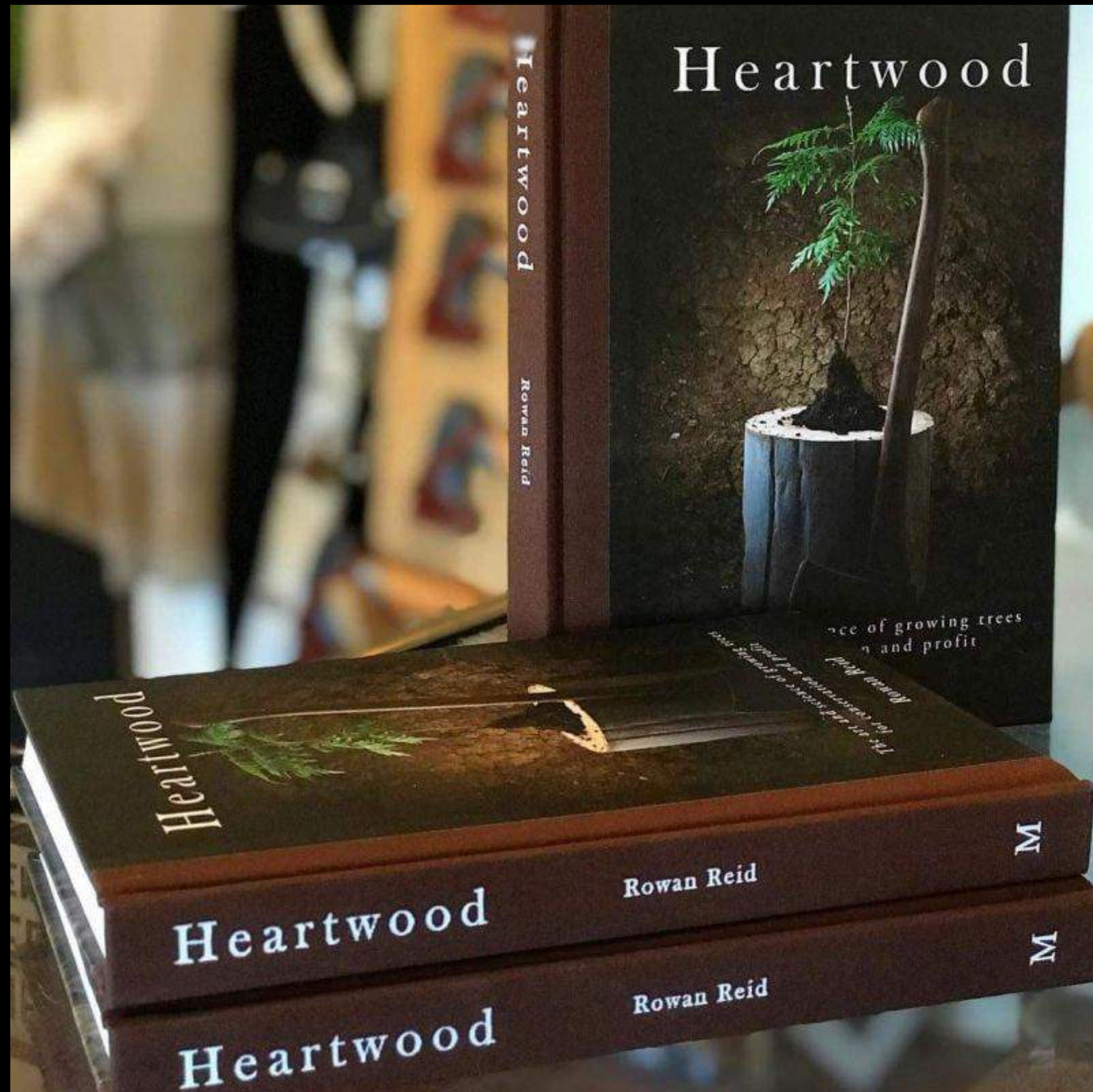


AUSTRALIAN
AGROFORESTRY
FOUNDATION



Thankyou

Thankyou



Heartwood – the art and science of growing trees for conservation and profit

Facebook/Instagram
[Bambra Agroforestry Farm](#)

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