

A medium scale, integrated production - processing model for increasing Australia's wood supply and natural capital in agricultural landscapes

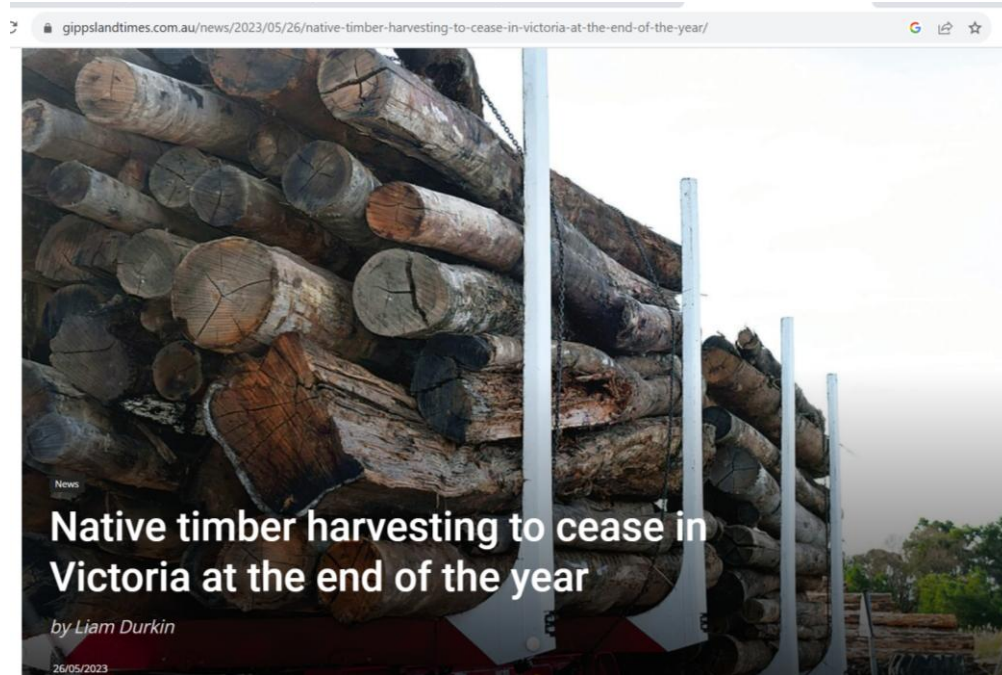


Prof. Craig Nitschke

Jon Lambert, Chris McEvoy, Emma Leslie, Wendy Wright, Thomas Baumgartl, Bill Grant,
Ben Wagner, Patrick Baker

FA 2025 Conference, Adelaide

Change in Societal Values



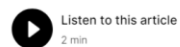
Politics WA Forestry

WA to end commercial logging of native forests

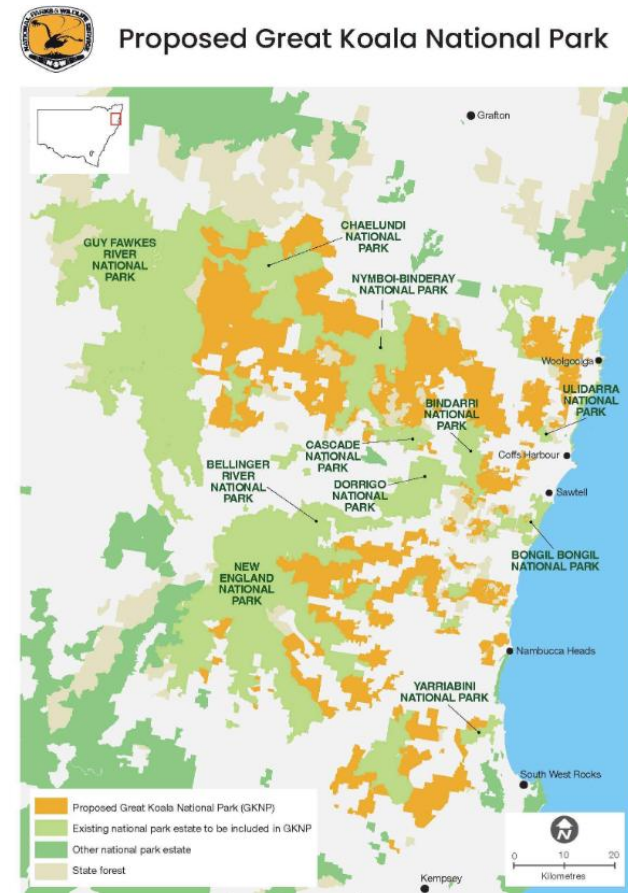
Kathryn Magann

October 1, 2023 – 2:53pm

Save Share A A A



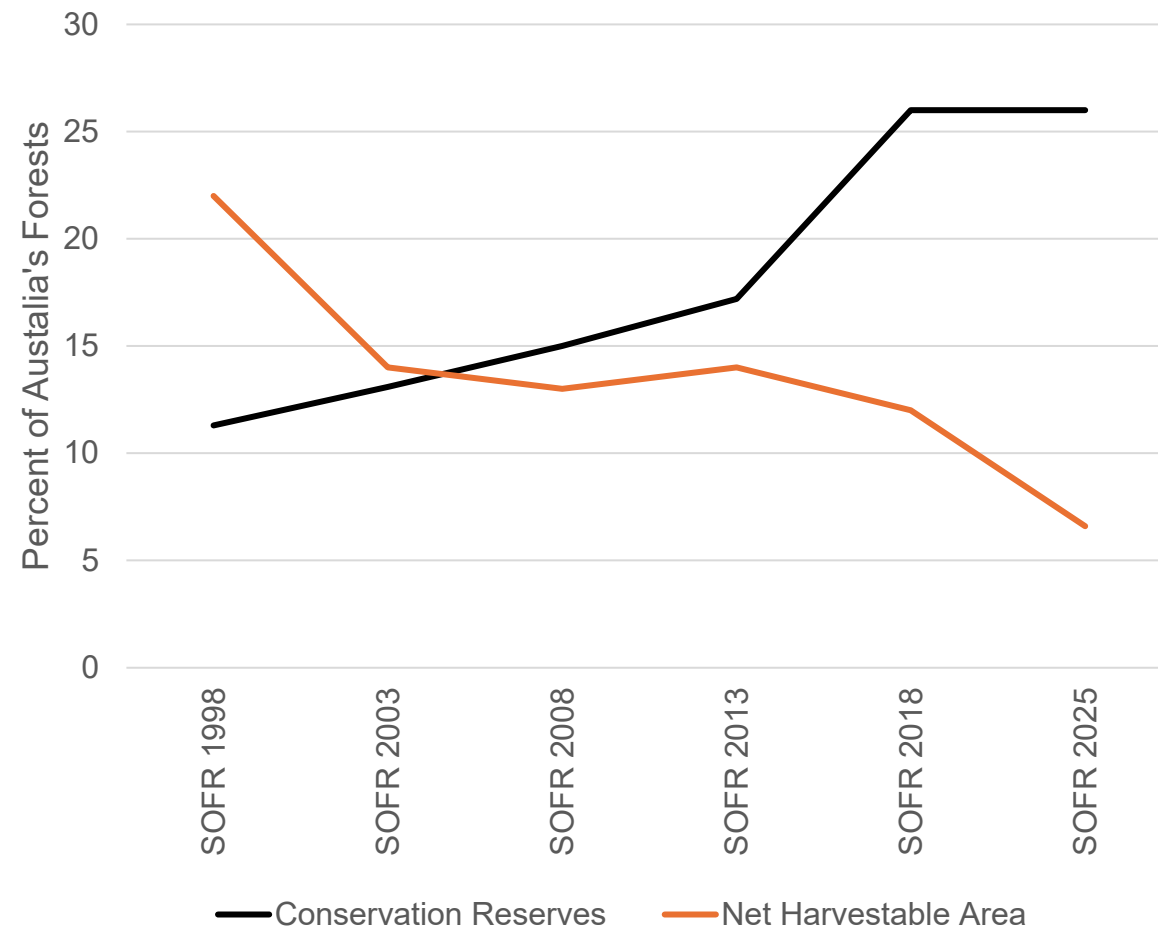
Western Australia has joined Victoria in banning commercial logging of native forests from next year.



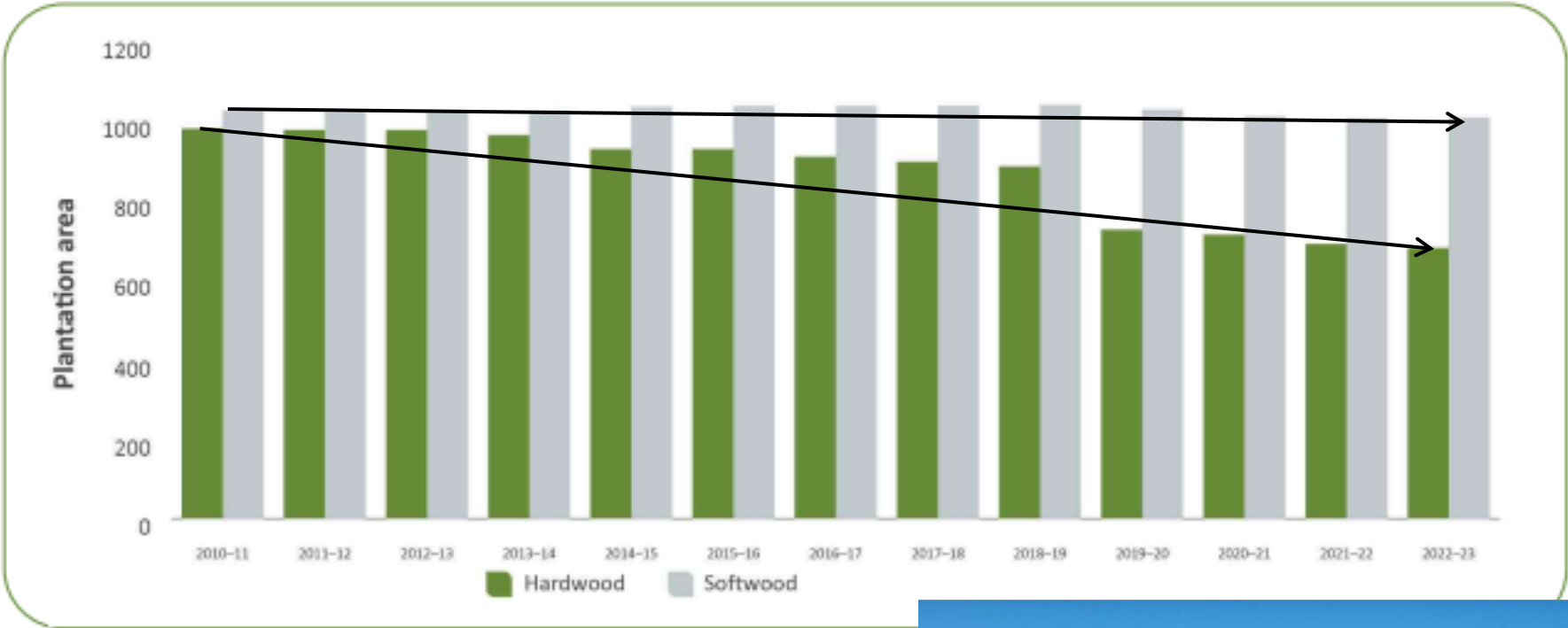
Koala (Phascogalea cinerea)



Loss of native forest area for wood production



Stable softwood plantation area with slowing decline in hardwood plantation area



KILAND

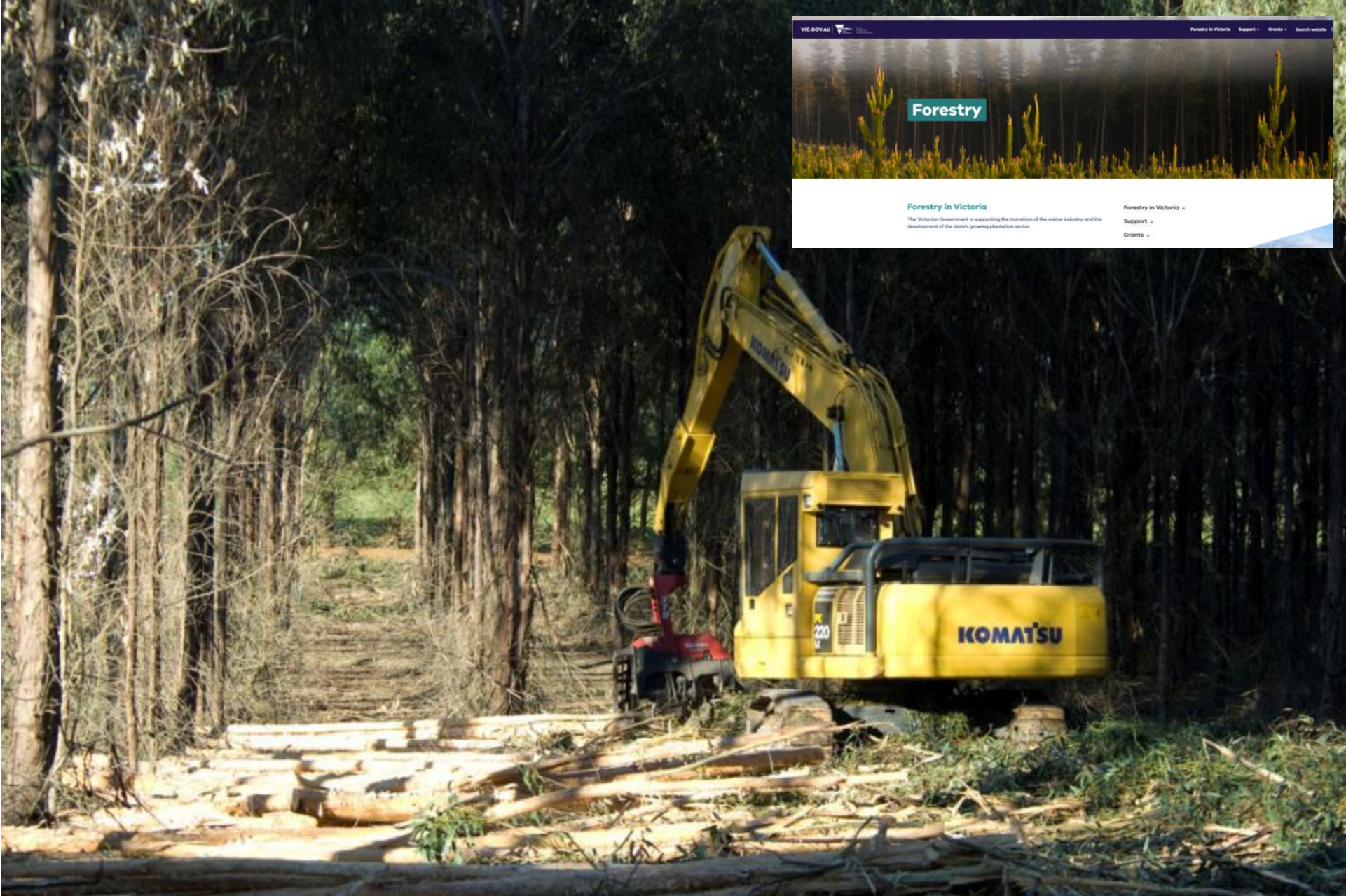
Kiland is a specialist land manager, restoring Kangaroo Island's fire-damaged landscape to high quality agricultural use in line with community goals.

Kiland Limited owns ~18,600 Ha of prime agricultural land on Kangaroo Island, which it is reverting from forestry to agriculture.

Demand for Wood is Increasing



Photo: <https://sustainableforestmanagement.com.au/australian-timber-shortage/>



**Harvesting farm-grown blue gum
Colac, Victoria, Australia**



Community perceptions of plantation forestry: The association between place meanings and social representations of a contentious rural land use

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^b Cooperative Research Centre for Forestry, College Road, Sandy Bay, Tasmania 7005, Australia



Multi- Functional Use:

- Plantation forestry is **not ‘just another crop’**:
 - it was variously objectified as ‘weeds’, ‘poison’, ‘pollution’, ‘wasteful’, a ‘useless resource’, destroying ‘water quality’...
- Large-scale plantation forestry is considered **out of place** within the rural landscapes

Production Use:

- Potential for ‘extra income’, and ‘profit’ but also objectified as a **threat to agricultural production**
- Large scale plantation forestry established by ‘outsiders’ was represented as a **‘risk’ to rural communities**



Understanding the values behind farmer perceptions of trees on farms to increase adoption of agroforestry in Australia

Aysha Fleming¹  · Anthony P O'Grady¹ · Daniel Mendham¹ · Jacqueline England² · Patrick Mitchell¹ · Martin Moroni³ · Arthur Lyons³

“Agroforestry holds a great deal of promise for addressing the nexus of sustainability issues facing farmers—environmental, social and financial.”

“But, its promise is yet to be realised and currently faces several barriers that are associated with farmer perceptions”

Farm forestry/ Agroforestry within a spectrum of forestry options

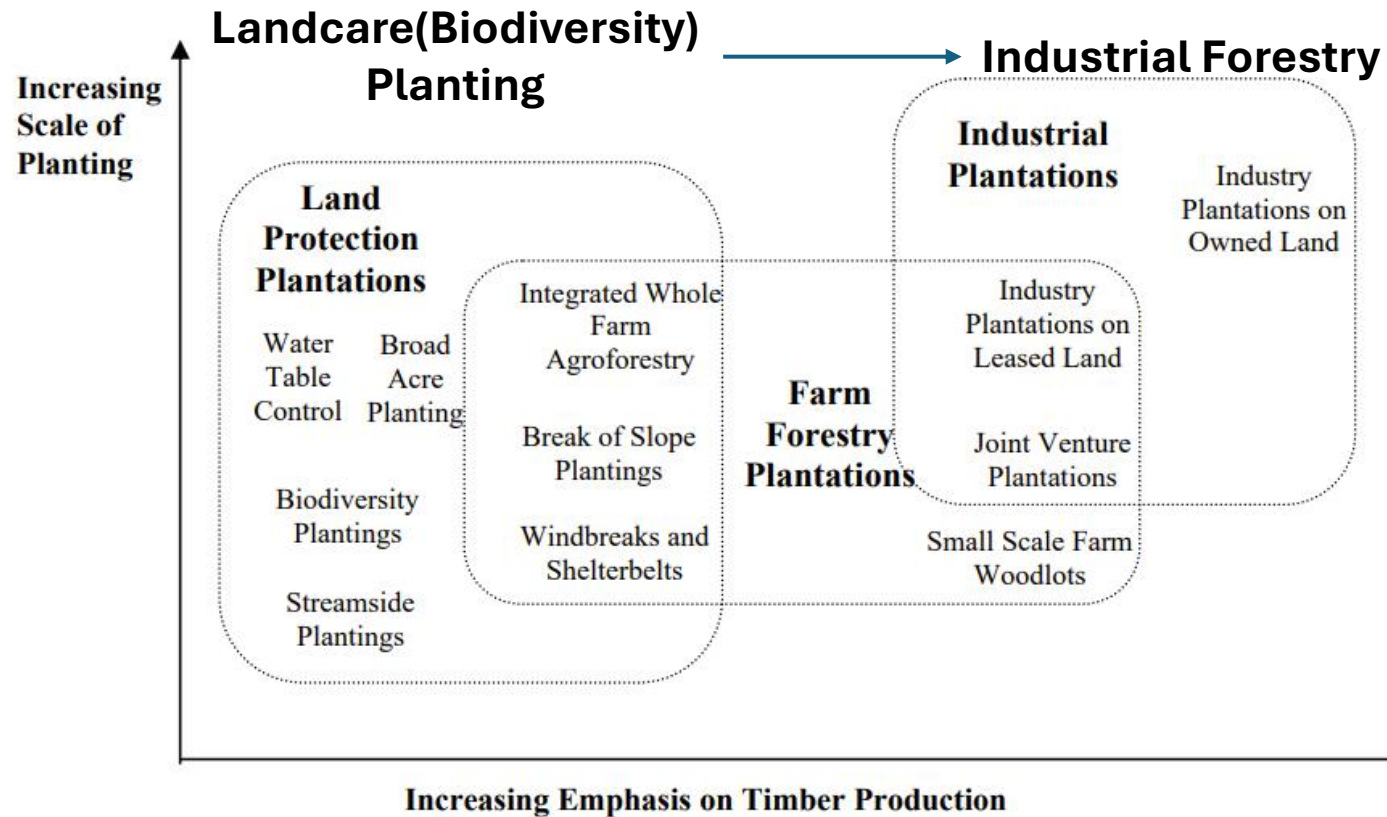
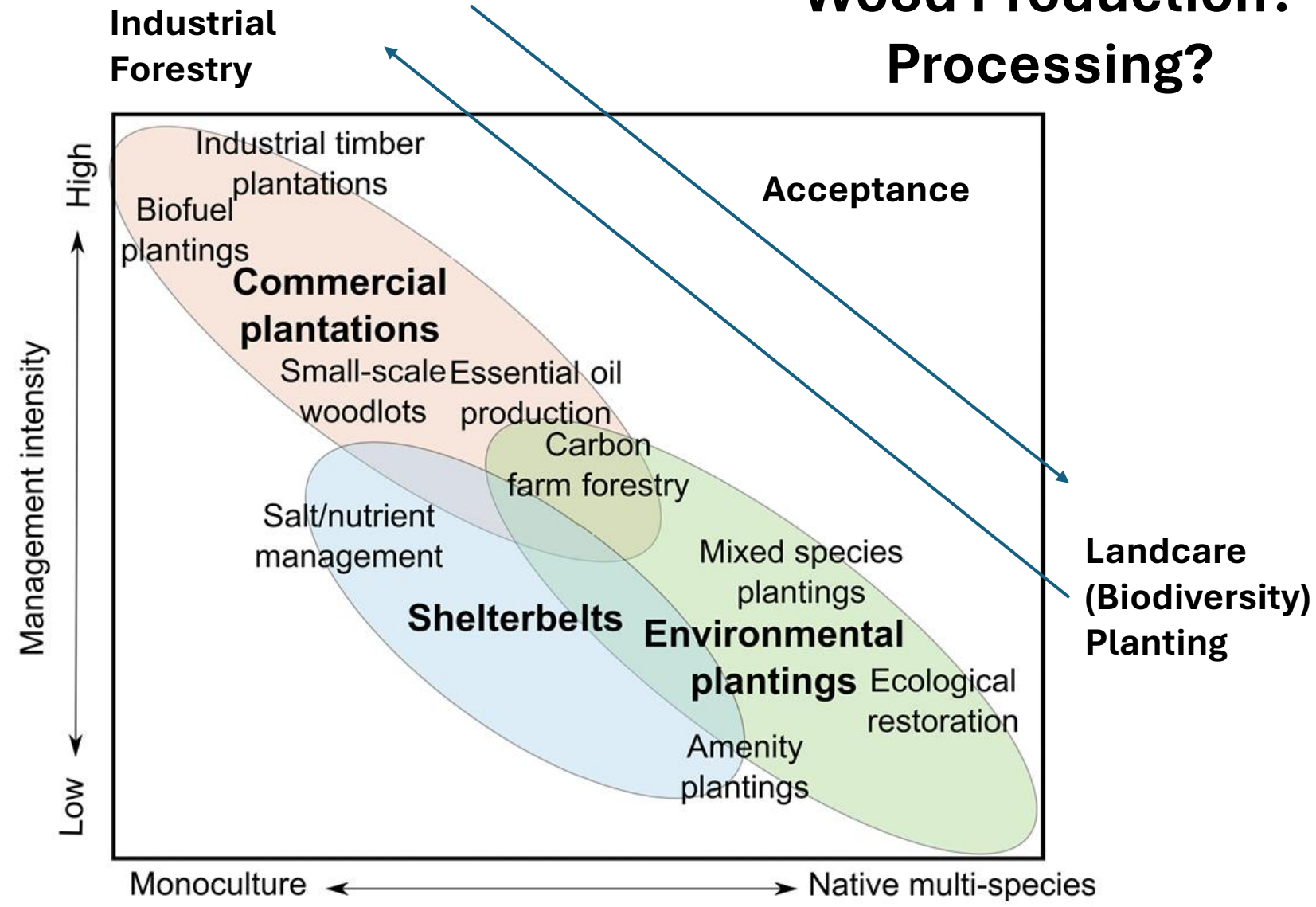


Figure 2.3: Diagram used to define farm forestry by Prosser (1995).

Wood Production? Processing?



Public acceptance of plantation forestry: Implications for policy and practice in Australian rural landscape

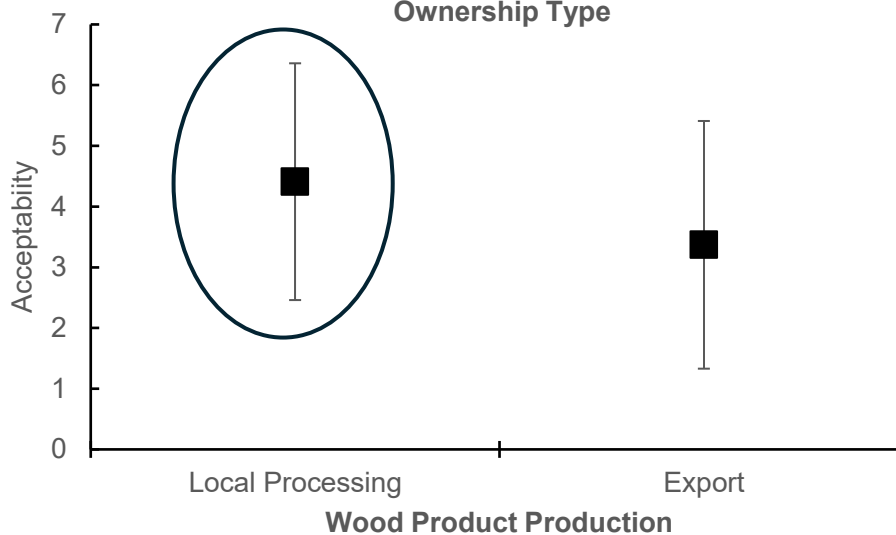
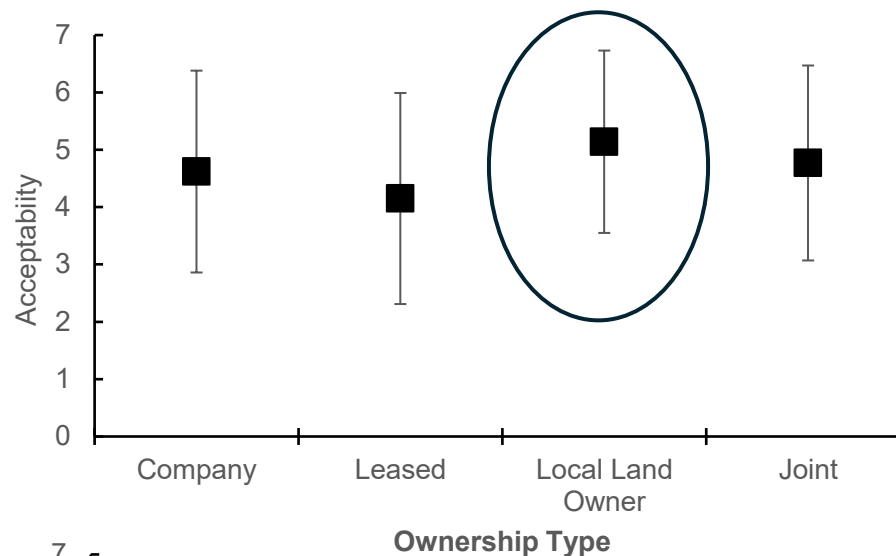
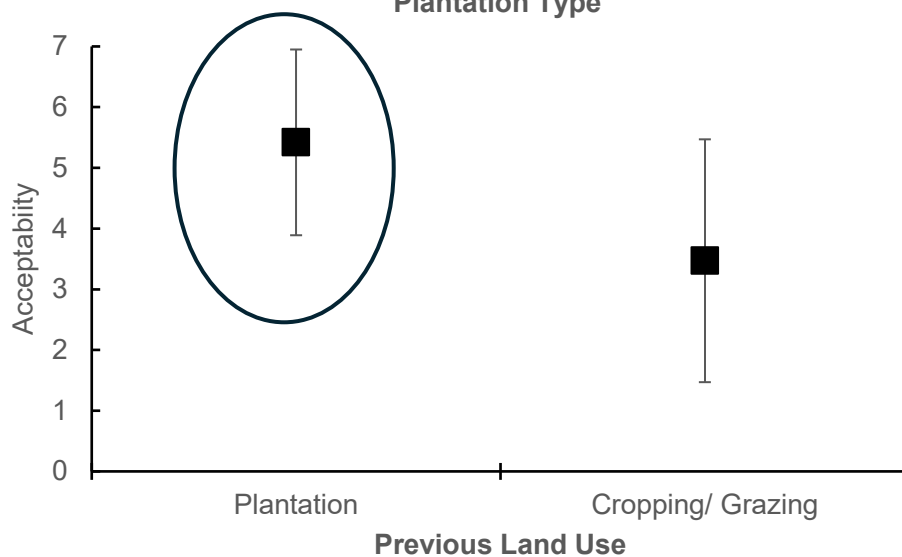
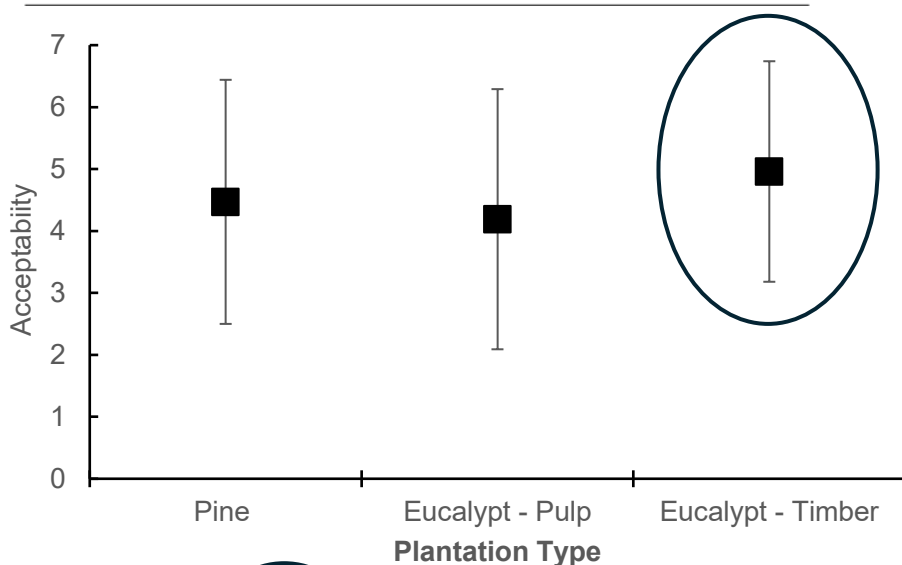
Kathryn J.H. Williams^{a,b,*}

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Public Acceptance

Figures made using data in Williams (2013)



Identifying, measuring and modelling critical
elements required of plantation forestry to maintain
a social licence for operations and expansion in
Gippsland

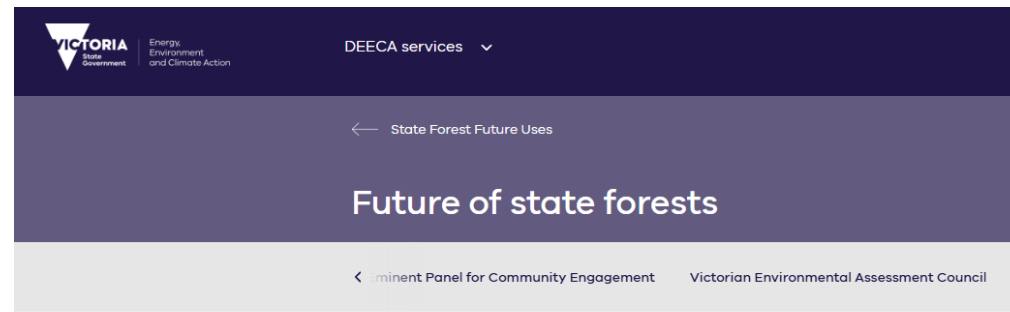
2024

Prepared for

National Institute for Forest Products Innovation

by

Gideon Kwame Otchere, Jessica Reeves, Wendy Wright, Thomas
Baumgartl, H.M. Tuihedur Rahman, Gordon M. Hickey



Forestry Transition Program

- Higher acceptability of smaller-scale plantations on private property that are integrated into farm businesses
- Higher acceptability of native species for plantations
- Preference for mixed species rather than monocultures
- Higher acceptability of plantations established on land previously used for plantations
 - Concerns about plantations near koala habitat and on land that should be prioritised for grazing



Assessing the integrated forestry at medium scales model as a template for increasing Australia's wood supply and natural capital in agricultural landscapes



Australian Forest and Wood Innovations

Objectives

- To quantify the natural capital values in mixed-species, multi-age plantations
- To assess the life cycle of carbon footprint from planting to production of wood products
- To evaluate the financial performance of the INFORMS model



Project Team

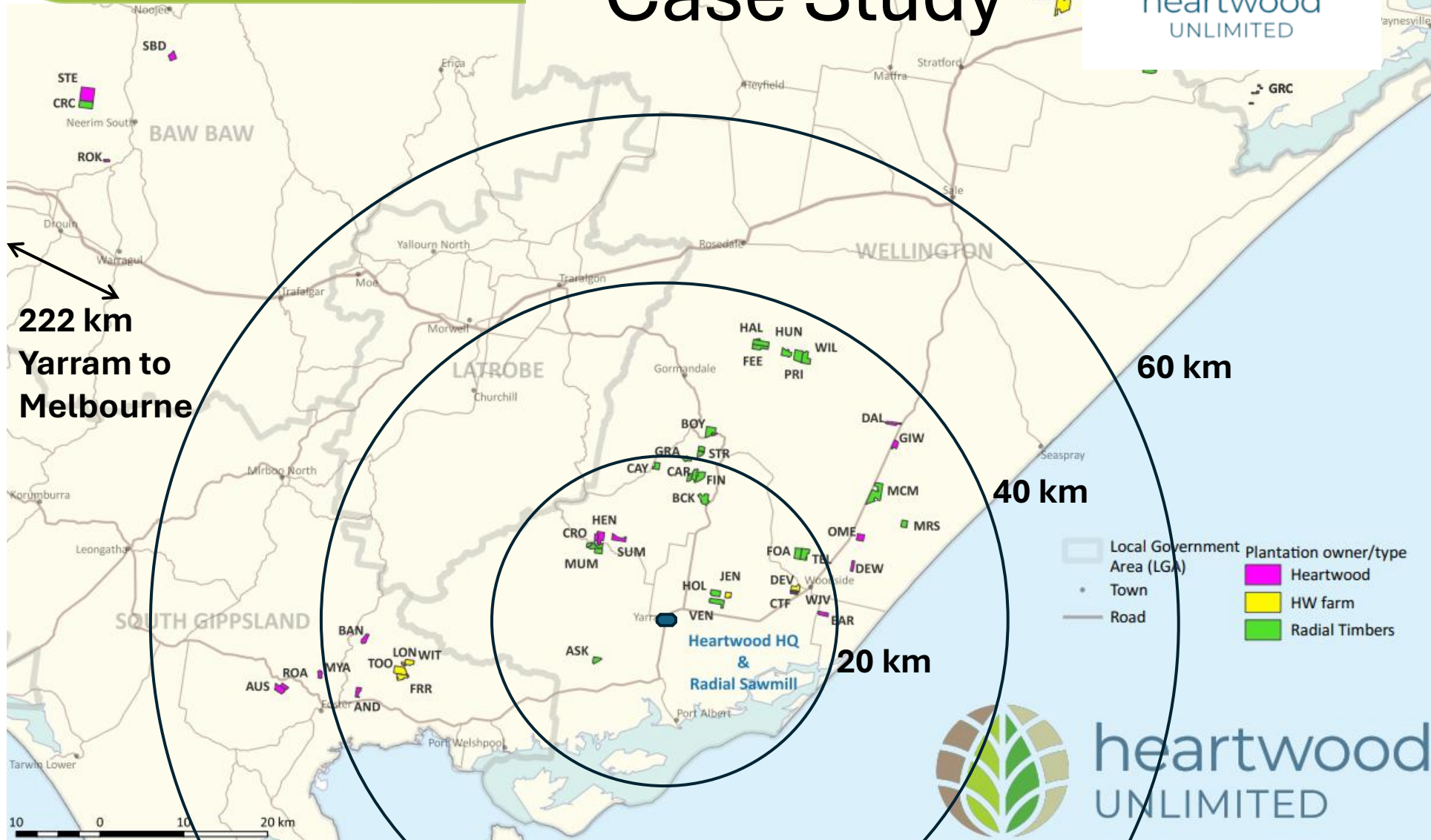
- Chris McEvoy – Radial Timber
- Jon Lambert & Emma Leslie – Heartwood
- Wendy Wright , Thomas Baumgartl & Bill Grant – Fed Uni
- Tyron Venn – UQ
- Craig Nitschke , Ben Wagner, Patrick Baker – UniMelb





INFORMS

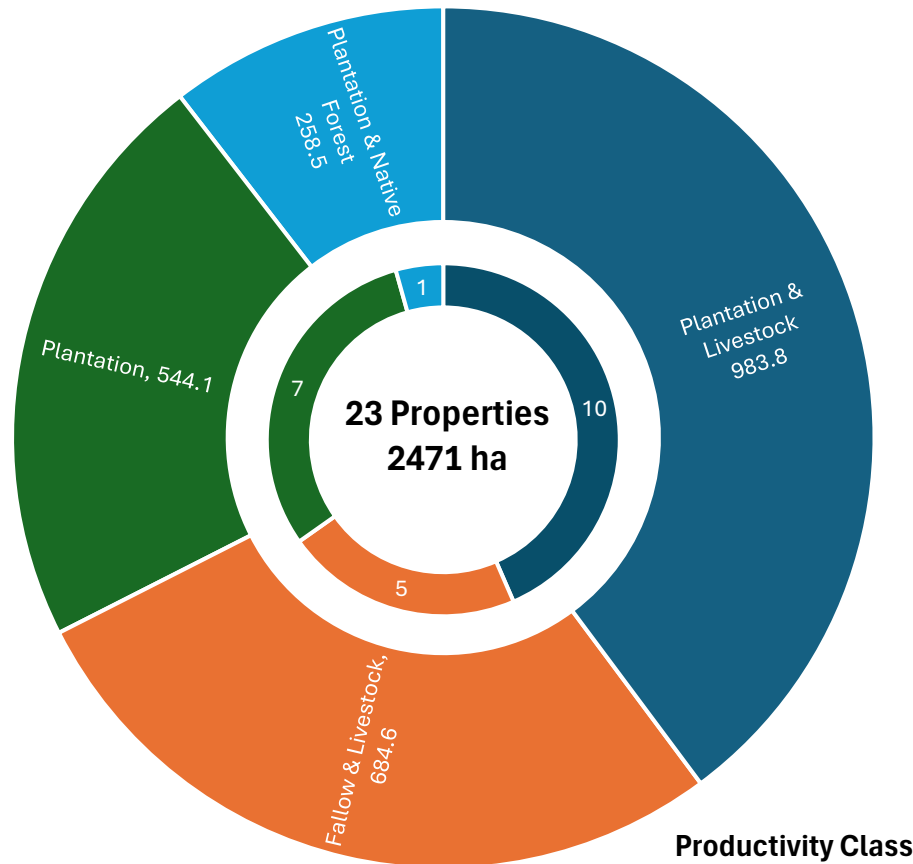
Case Study



Plantation Estate



Land-Use



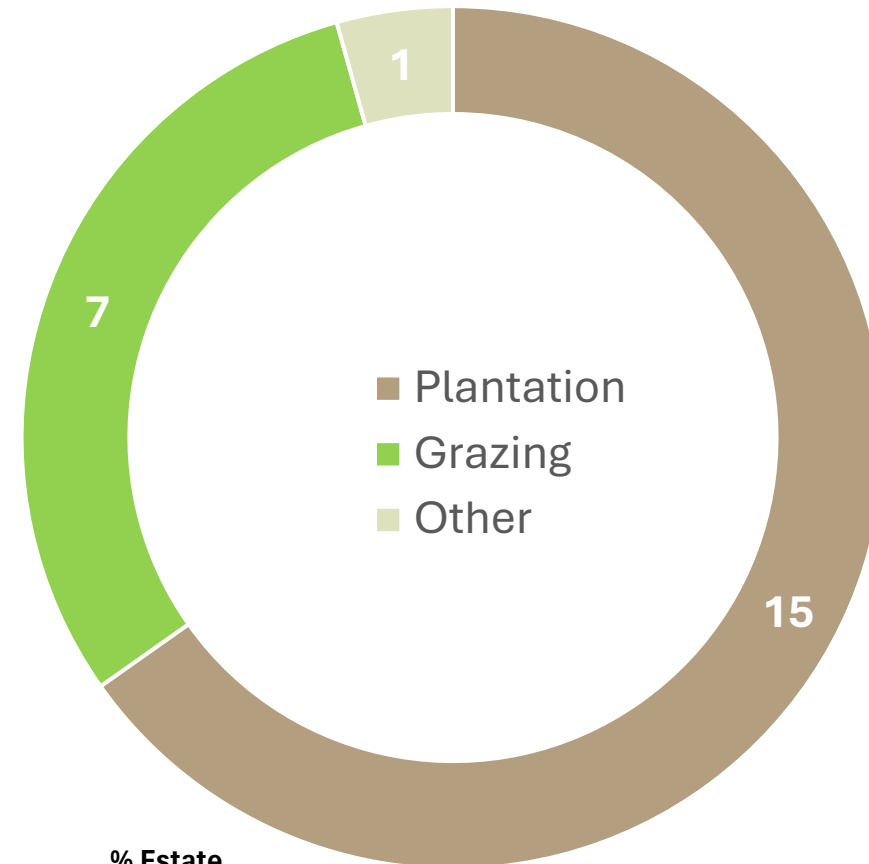
Productivity Class

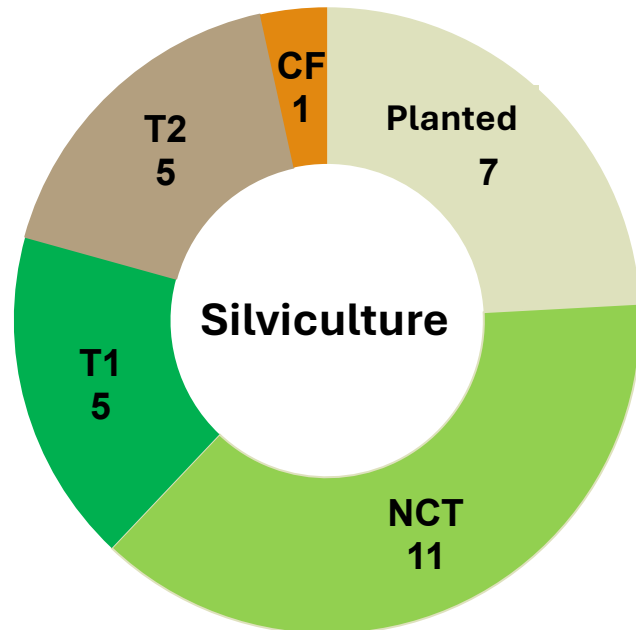
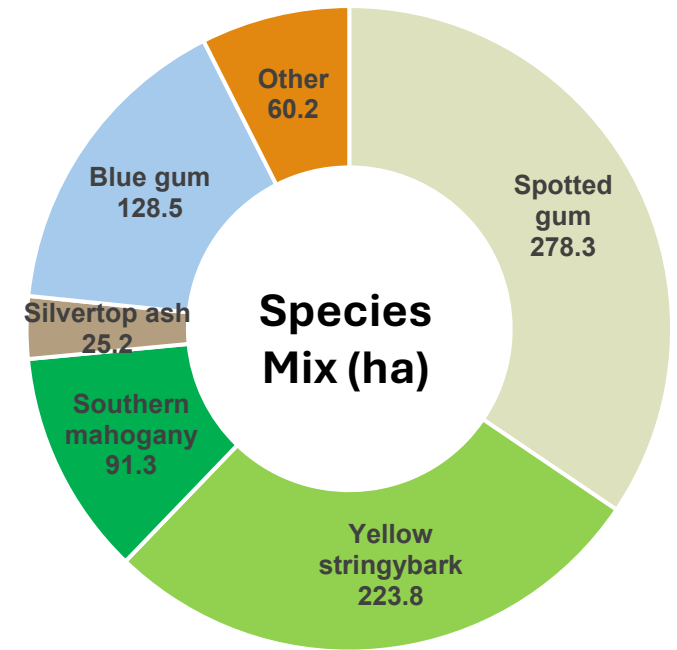
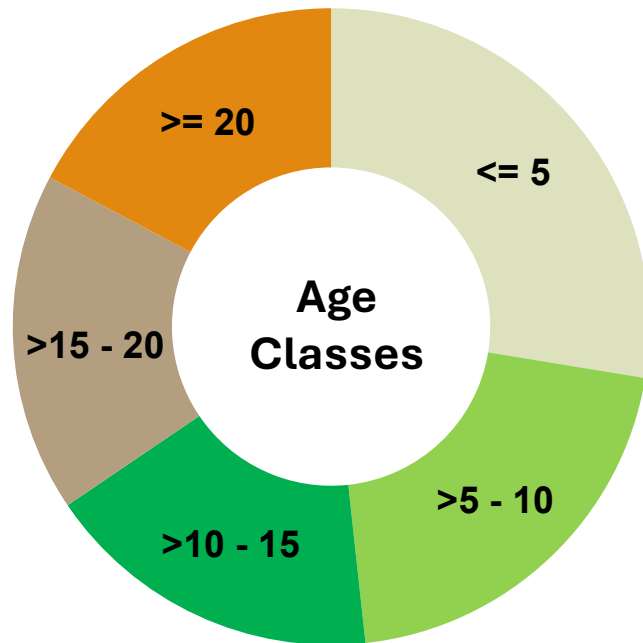
Low
Medium
High

% Estate

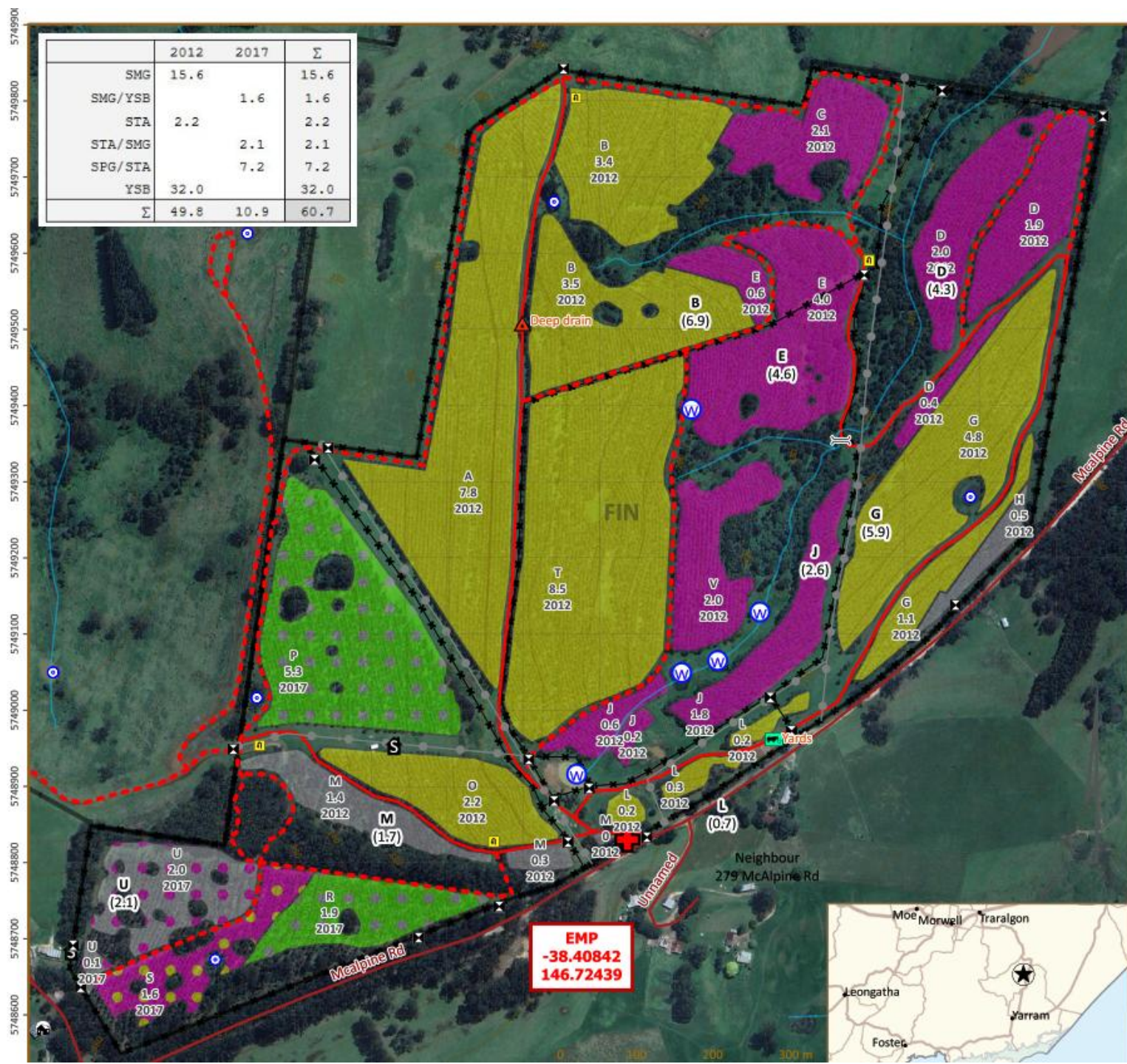
0.35
0.23
0.42

Previous Land-Use





- Plant 1000 -1100 SPH
- Thinning:
 - NCT ~ 600 SPH (4-5 yrs)
 - CT1 – 350 - 400 SPH (9-10 yrs)
 - Biofuel & Firewood (30 TPH)
 - CT2 – 150-200 SPH (15-20 yrs)
 - Biofuel & Firewood & Peelers (50-70 TPH)
- Pruning:
 - 250-300 SPH (2 m) (3-4 yrs)
 - 200-250 SPH (4.5 m) (5-6 yrs)
 - 150 - 200 SPH (6.5 m) (7-8 yrs)
- CF – 30 yrs
 - Sawlog & Biofuel



	2012	2017	Σ
SMG	15.6		15.6
SMG/YSB		1.6	1.6
STA	2.2		2.2
STA/SMG		2.1	2.1
SPG/STA		7.2	7.2
YSB	32.0		32.0
Σ	49.8	10.9	60.7

FINLAY (FIN)

Operations Map

Gross Area (property): 93.6 ha
 Plantable Area: 60.7 ha
 Year Planted: 2012 & 2017

Approx address: 279 McAlpine Rd, Carrajung Lower VIC 3844
 Distance to nearest town: 16km to Yarram

Property info (W to E subdivisions), LGA Wellington:
 Lot 2, Plan LP114153 | Lot 1 / Plan TP868462 | Lot 1, Plan TP400765

- Legend**
- Crossing
 - Dam
 - Emergency Meeting Point (EMP) -38° 24.5' 146° 43.5'
 - Gate
 - Hazard
 - House
 - Shed
 - Stock infrastructure
 - Turn Around Point
 - Water point
 - Power line
 - 10 m contour
 - 100 m contour
 - Vicroads
 - Water course
 - 4WD track
 - Tanker track
 - Fence
 - HP property
 - Species
 - SMG
 - SMG/YSB
 - STA
 - STA/SMG
 - SPG/STA
 - YSB



Disclaimer: This map may be of assistance to you however Heartwood and its employees do not guarantee that the publication is without flaw or is wholly appropriate for your purposes therefore disclaims all liability for error, loss or other consequences that may arise from you relying on any information in this publication.

Map Grid of Australia 2020 (MGA2020) Zone 55. Universal Transverse Mercator (UTM) Projection. Geocentric Datum of Australia 2020 (GDA2020).





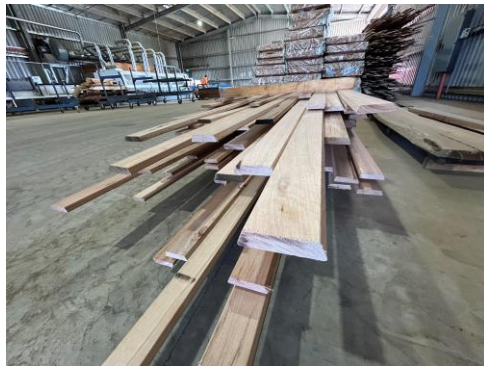
Agroforestry

Benefits for local farmers

Weed Control

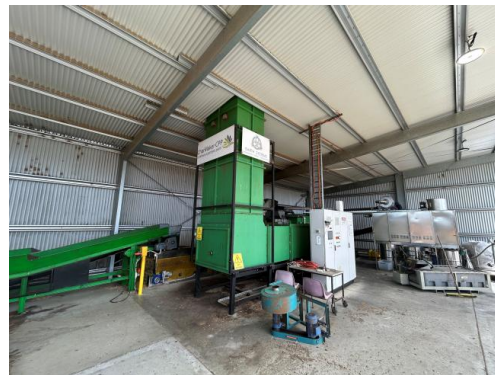
Benefits for Plantation Owner





Sawlog – Durable High Value Products

Thinnings - LVL Products



Biochar and Wood Vinegar

Firewood

Natural Capital Benefits

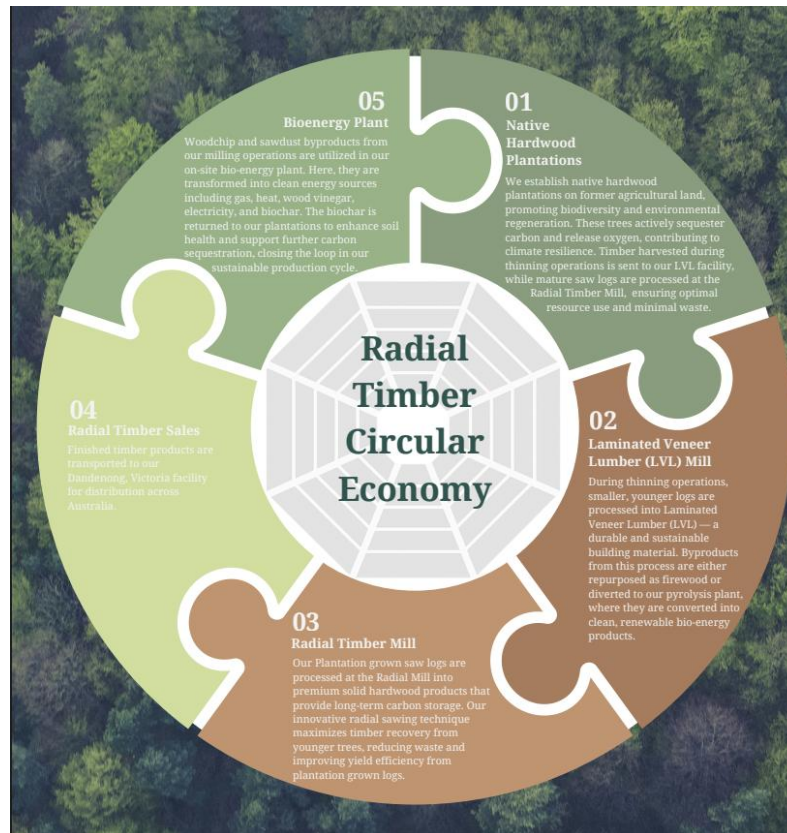


E. sieberi
C. maculata



- Planted 2016
 - 9 years old
 - 18-30 cm DBH

Carbon Life Cycle Analysis





Natural Capital Benefits

**BIOCHAR/
Wood Vinegar**

CORCS

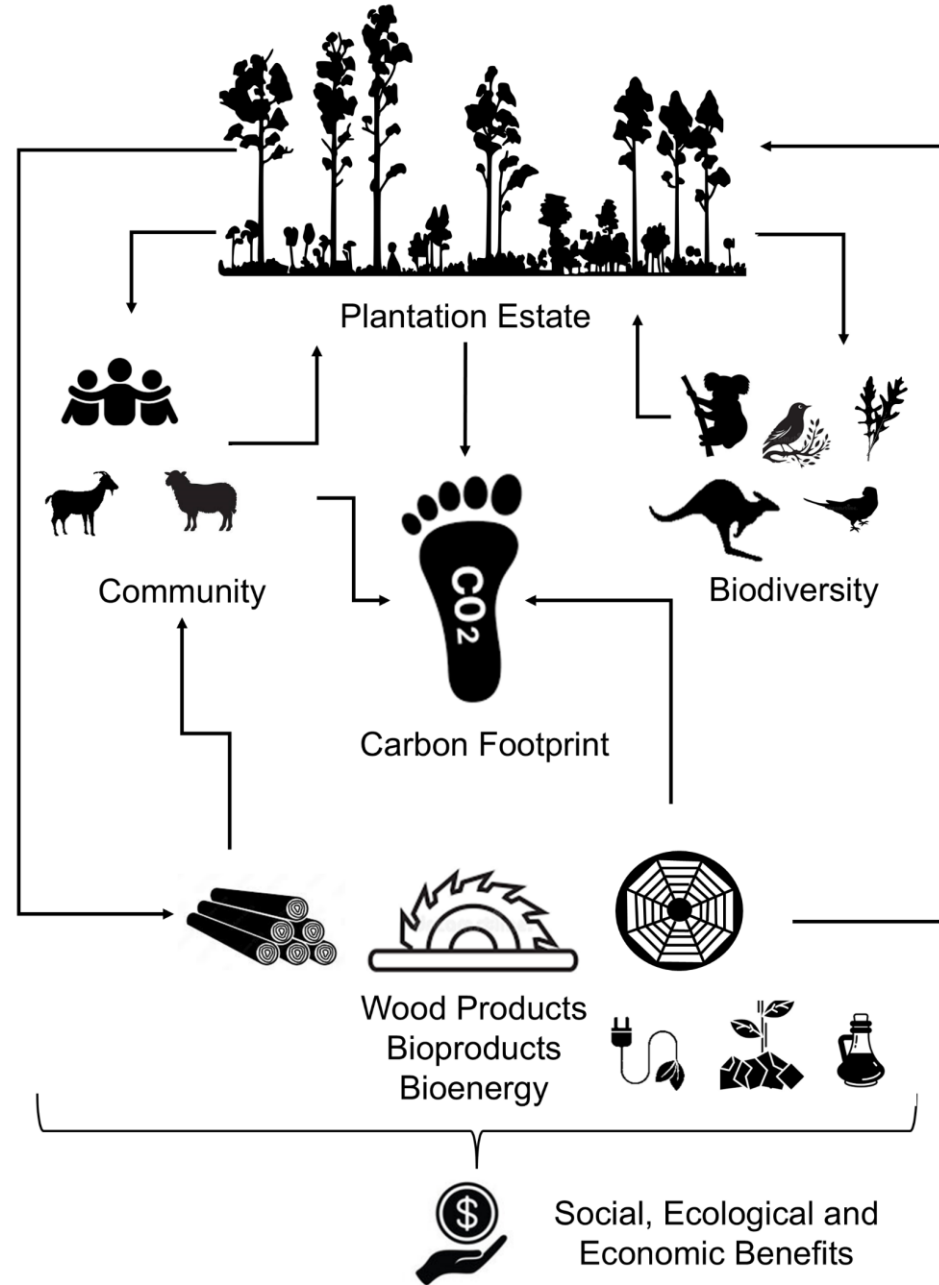
**CO₂ Removal
Certificates (CORCs)**

Financial Assessment





Assessing the Social, Ecological and Economic Feasibility of the Heartwood Plantation – Radial Sawmill Model



Thank You!!

Stay
Tuned ☺



radialtimber
USING WOOD WISELY

AFWI



Australian Forest and Wood Innovations