

# 'Is loss of forest research capacity a Furphy?'

Jim O'Hehir

30 October 2024



# ‘Is loss of forest research capacity a Furphy?’

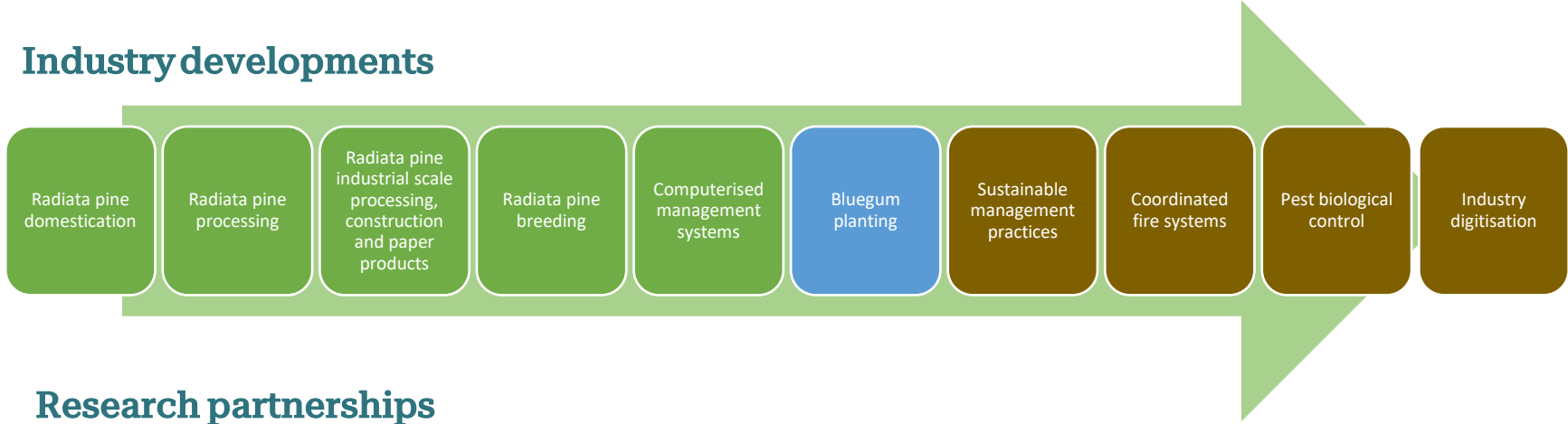
*A furphy is Australian slang for an erroneous or improbable story that is claimed to be factual. Furphies are supposedly heard from reputable sources, sometimes second-hand or third-hand, and widely believed until discounted.*

## Some things to consider:

- What do we mean by loss of research capacity?
- Who defines the research needed?
- Availability of researchers to undertake work required by industry? Community?
- Has there been a shortage of funds?
- Have any research needs gone unmet?
- Are specific forestry research skills still needed & what are they?

# 1875-2024 - Industry Developments, Research Partnerships, & South Australia State & Commonwealth

## Industry developments



## Research partnerships



# In South Australia – FCoE - Vision & Mission

The Forestry Centre of Excellence – hosted at UniSA Mount Gambier is acknowledged as an international leader in forest industries research, education, product and market development, enhancing the Green Triangle region through built local capacity, national collaboration and reputation.

It will enhance the competitiveness, diversification and prosperity of the Green Triangle regional economy and communities, while building overall resilience in the Australian forest industry.



**Media Release**



**Clare Scriven MLC**  
Minister for Forest Industries

Tuesday 21 March 2023

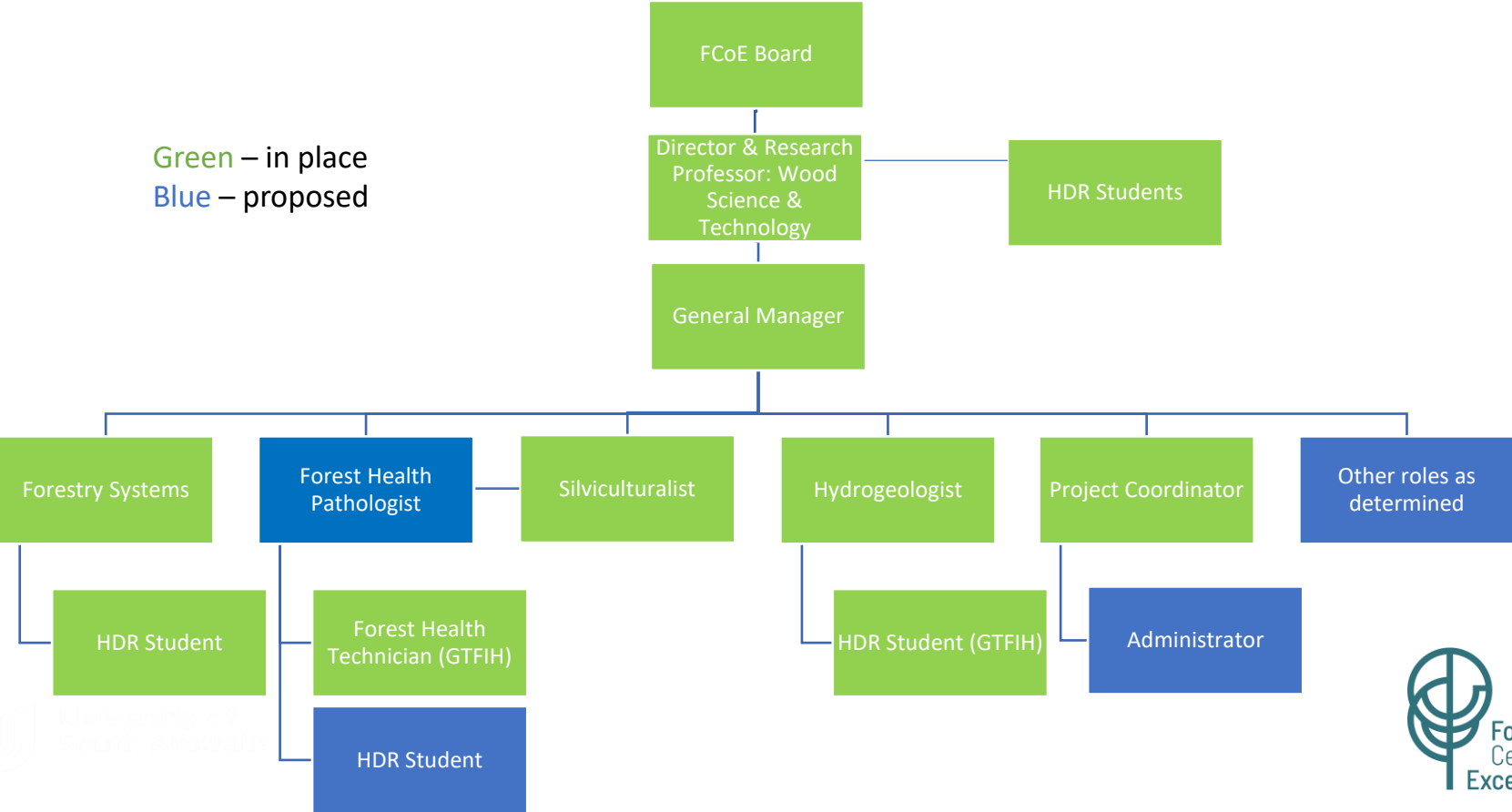
**Forestry Centre of Excellence Strategic Plan  
launches vision for SA**

The Strategic Plan for the Forestry Centre of Excellence has been launched by the State Government, laying out the vision behind this \$15 million 10-year collaborative project.



# FCoE Structure – Industry Relevant

Green – in place  
Blue – proposed



# Infrastructure Amongst GT Industry - Mount Gambier SA

## A current building....

UniSA infrastructure & systems



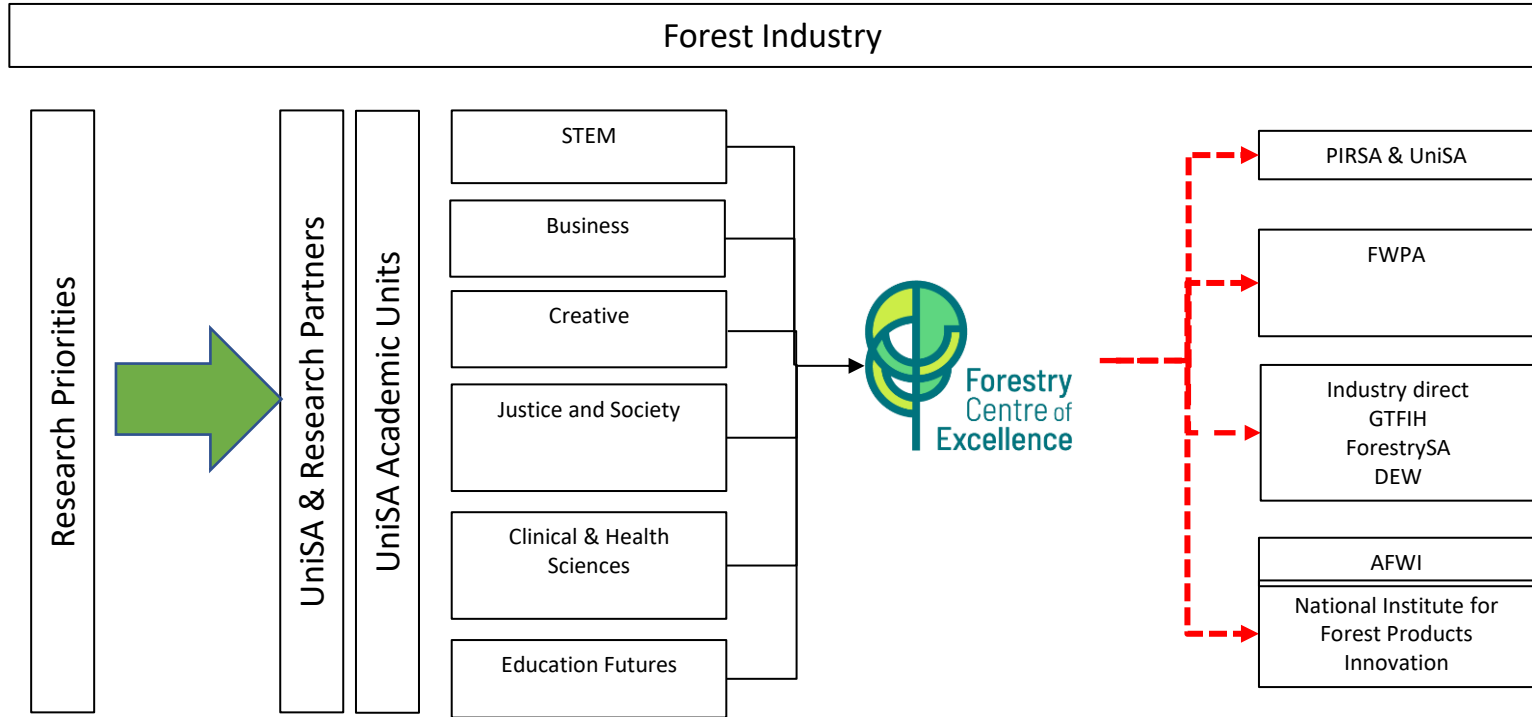
## A future building....

Opening 2026

Part of Mount Gambier  
Education and Training  
Precinct – Technical High  
School & Vocational Training



# FCoE - UniSA Forest Research Model - 2018+



# FCoE Industry, Research Partners...since 2018

**All major plantation growers:** ABP, FC NSW, Forico, FPC WA, GTFP, HQP, HVP, KIPT, Midway, NSW DPI, OFO, PFOlsen, SFM, STT, TPPL, ForestrySA

**Processors:** Allied Timber Products (NSW), Allied Timber Products (Qld), AKD, Dongwha Australia, Highland Pine Products, Hyne Timber, AAM, OFO, SE Pine, Timberlink, Wespine Industries, Whitehead, Borg, Bio Gro

**Other parties:** FWPA, PIRSA, EWPA, AFPA, SAFPA, VFPA, CSIRO, Master Builders Association, Institute of Architects of Australia, Tree Breeding Australia, CFS, CFA, DEW, DELWP, ForestrySA, NSW PI, National Centre for Timber Durability and Design Life, QDAFF, Forestry Australia, SmartSat, Forestry Hubs

**Universities:** Central Queensland, Deakin, Flinders, Melbourne, Adelaide, Sydney, Sunshine Coast, Tasmania, Queensland, Curtin, Swinburne, Charles Sturt, BOKU (Austria), California, Stellenbosch, Oregon State, INFOR (Chile)

**Contractors:** Scion (NZ), Interpine (NZ), C4D Intel, AgVic, TimberED, Esk Mapping, Sylva Systems, Ric Sinclair (Surviv), EyeSky

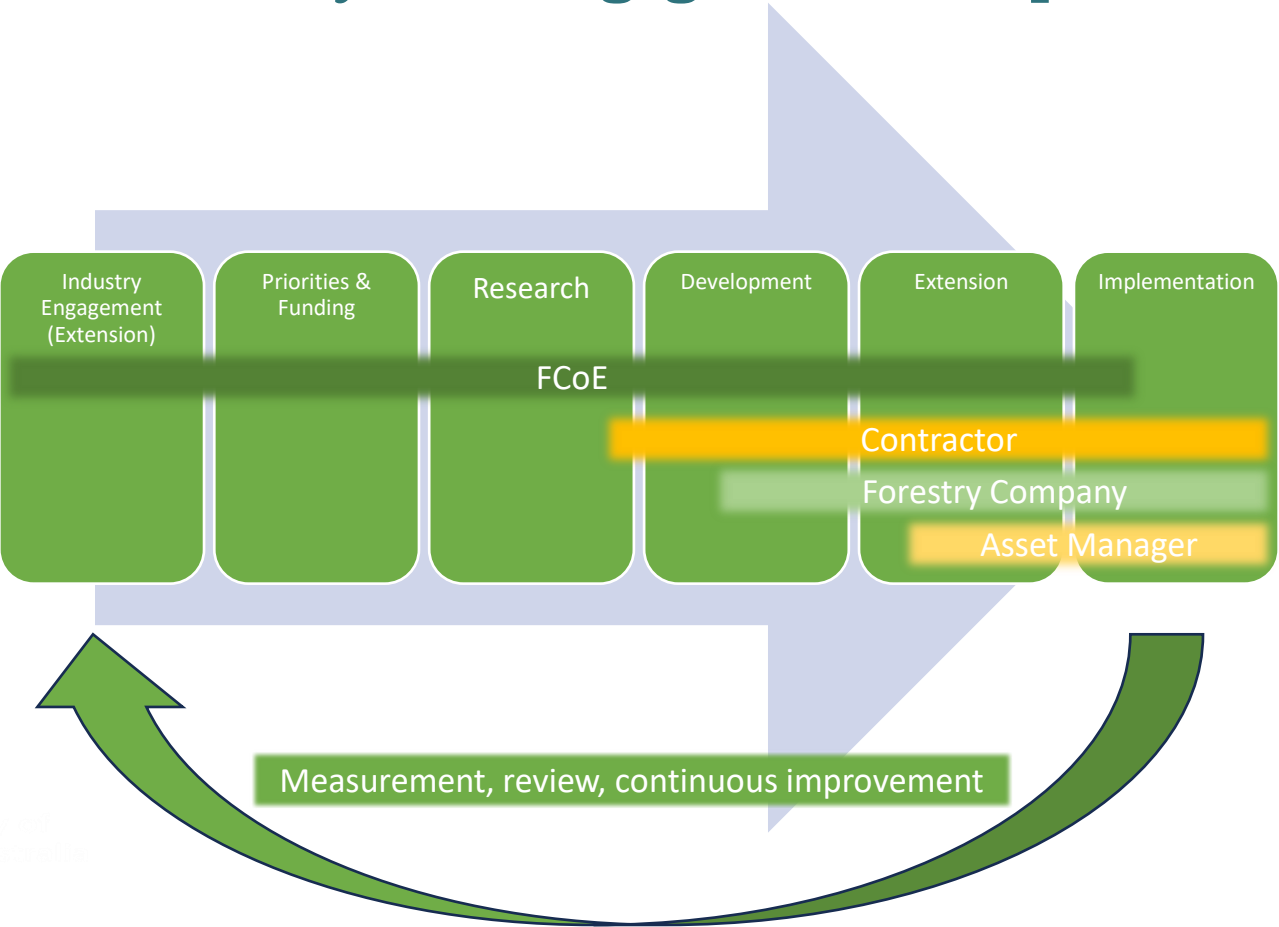
**Number of Projects:** FWPA–13; NIFPI–16; GTFIH–8; UniSA/ForestrySA–10; SmartSat–1



FWPA Current Projects	UniSA Leader	Team	Start/Finish	Total Cash
Establishing the relationship between random and biased testing for structural verification of Australian sawn softwood	Rameez Rameezdeen	Rameez Rameezdeen, Julie Mills, Yan Zhuge, Xing Ma, Mark Ellis, Chris Chow, Jim O'Hehir	1/2021-3/2024	\$90,000
Geospatial positioning and fusion: is real-time sub-metre, accuracy operationally feasible in forestry environments?	Anthony Finn	Arko Lucieer – UTAS, Stefan Peters, Graham Walker, Jim O'Hehir	8/2022-4/2025	\$1,309,918
Assessment of current best practice techniques for handling pesticides in forestry applications	Albert Juhaz	Peter Hoffmann, Jackie Wright, Braden Jenkin, Jim O'Hehir	6/2023-4/2026	\$917,105
Remote Sensing for forest pests and change detection.	Dianne Patzel	Lead - David Bruce Flinders Uni	3/2023-6/2025	\$24,892
FWPA Requested Extension to Clean strip Project	Jim O'Hehir	Braden Jenkin, Des Schebella	4/2023-4/2024	\$113,319
Koala Detection using Biologically Inspired Vision	Anthony Finn	Stefan Peters, Jim O'Hehir	11/2023-10/2026	\$1,647,426
Characterising utility performance and in-grade properties of solid structural timber recovered from radiata pine T2 logs, top logs from CF, and core wood from current sawlogs.	Rameez Rameezdeen	Lead - Jon Shanks UTas, Greg Nolan UTas, Jim O'Hehir	10/2023-12/2024	\$150,000
Operational Transition of PINT Software	Anthony Finn	Stefan Peters, Jim O'Hehir	1/2024-9/2024	\$107,942
Initial assessment of the potential for Australia's plantation E. globulus resource in solid wood products for domestic markets	Rameez Rameezdeen	Lead - Louise Wallis UTas, Jon Shanks UTas, Greg Nolan UTas, Jim O'Hehir	1/2024-6/2025	\$267,000
Integrating APSIM into resource management systems for estate wood flows and valuations that account for climate change.	Jim O'Hehir	Philip Smethurst, Neil Huth, Daniel Mendham (CSIRO), Brian Rawley (Sylmetrica - NZ)	6/2024-6/2028	\$1,483,390
Intelligent Image-based Hazard Identification System for Worker Safety in Forestry Operations	Jing Gao	Ivan Lee, Chris Chow, Rameez Rameezdeen, Jim O'Hehir	9/2024-7/2025	\$350,675

NIFPI Current Projects	UniSA Leader	Team	Start/Finish	Total Cash
Development and implementation of forest health and biosecurity systems and protocols based on quantitative pest risk and economic impact assessment.	Jim O’Hehir	Jeff Connor, Courtney Regan, Dianne Patzel, John Weiss, David Smith, Anna Weekes, Kathryn Sheffield (AgVic)	7/2019-3/2024	\$1,144,221
Characterising softwood sawn products in Australia	Rameez Rameezdeen	Rameez Rameezdeen, Julie Mills, Yan Zhuge, Xing Ma, Mark Ellis, Chris Chow, Jim O’Hehir	8/2019-3/2024	\$1,562,847
Future Proofing SA Blue Gum Plantations through improved detection of koalas in early planning and forestry operations.	Delene Weber	Anthony Finn, Jim O’Hehir, Morgan Schebella	11/2018-3/2024	\$500,000
Optimising the management of plantation, water and environmental assets.	Baden Myers	Jim O’Hehir, Stefan Peters, Guna Hewa Alankarage	4/2019-3/2024	\$1,160,000
A feasibility study of a commercially available remote-controlled and high-rate tree pruning unit to create fuel modified zones in softwood plantations.	Jim O’Hehir	Braden Jenkin (Sylva Systems) - Lead, Jack Desbiolles	5/2022-5/2024	\$450,000
Clean-strip establishment systems for improved plantation outcomes	Jim O’Hehir	Braden Jenkin (Sylva Systems), Jack Desbiolles	6/2023-3/2025	\$556,890
Weed Identification Using Remote Sensing	Anthony Finn	Stefan Peters, Jim O’Hehir, Dianne Patzel	6/2023-10/2024	\$362,012
Addressing the safety risks of multiple in-cab “driver assist” devices in the Australian Forestry Industry.	Jillian Dorrian	Anjum Naweed CQU - Lead, Jim O’Hehir, Amanda Bell, Braden Jenkin	3/2023-8/2024	\$16,005
Plantation water use and environmental asset management in plantation forests	Baden Myers	Eriita Jones Curtin University, Jeff Lawson, Stefan Peters, Guna Hewa	5/2023-6/2025	\$458,677
A development program for future revision of AS/NZS 4063.1:2010 Characterization of structural timber Part 1: Test methods	Rameez Rameezdeen	Jon Shanks UTas, Yachong Xu, Jim O’Hehir	6/2023-8/2024	\$300,276

# Generalised Pathway from Engagement to Implementation:



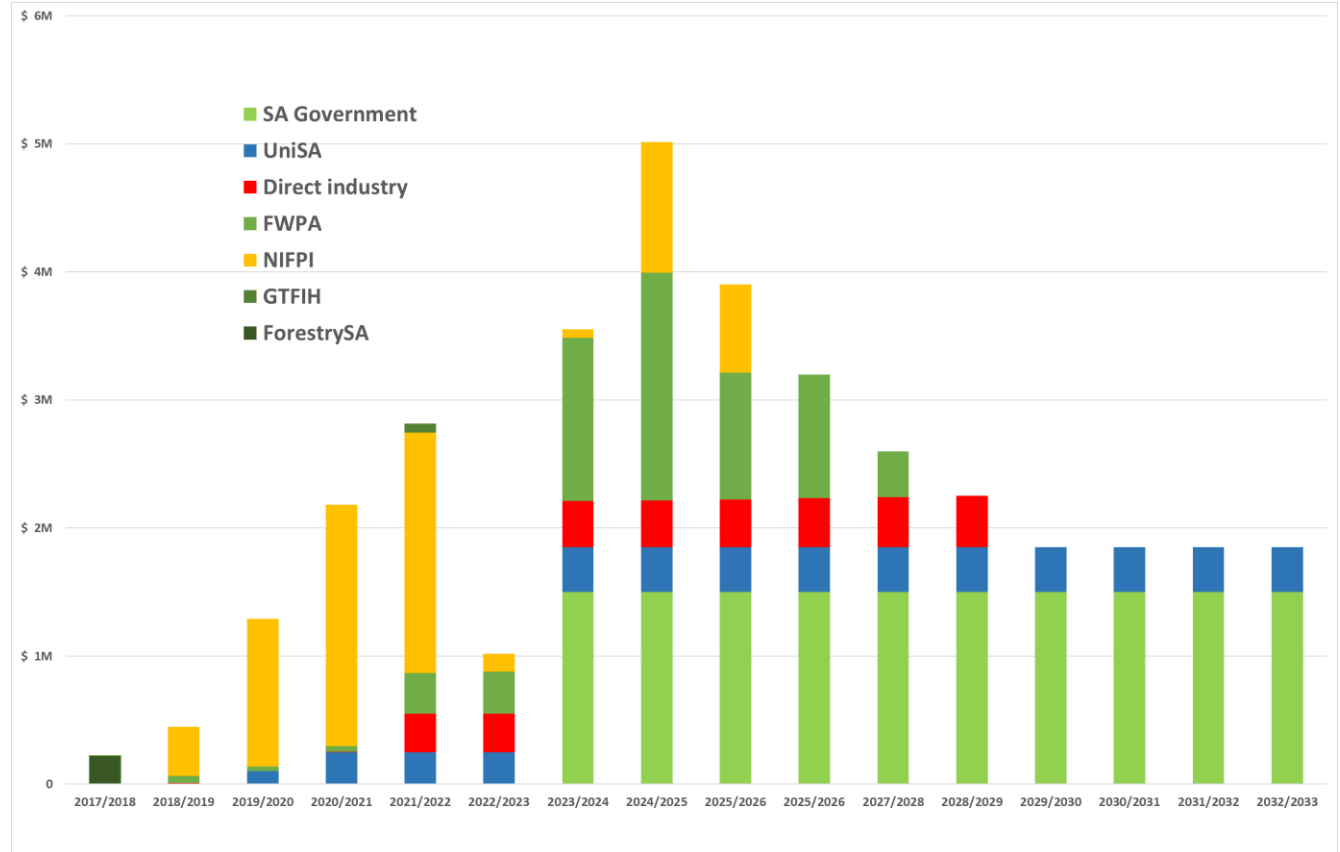
# Has FCoE worked? Funding sources?

2018+

- Projects 2018~2026: NIFPI ~\$5.1m; FWPA ~\$4.5m; GTFIH ~\$0.8m
- 3 year funding agreement with industry (\$1.0m)

2024+

- 10 year funding agreement with SA Government (\$15.0m)
- 10 year funding agreement with UniSA (\$3.5m)
- 5 year funding agreement with industry (\$1.9m)
- New building in Mount Gambier (\$6.5m)
- AFWI Launceston – partner with UTAS



# Core Forestry

versus

Not Core Forestry –

Categories of

Research

## Forestry

Wood science

Silviculture

Forest health

Measurement, growth & yield

## Not forestry

Risk

Fatigue & fatigue

First nations

Engineering

Remote sensing

Pesticides

Construction management

Social license

Animal welfare

Plantation water use

Software industrialisation

Wood product development

Architecture

Breeding

# UniSA model has shown it can meet many of these needs with many benefits.

- Advantages of this model?
  - Access to best practice
  - Rapid access to research for implementation
  - Low risk
  - Adaptive to changing needs
  - High degree of control, researchers stick to their area of expertise & you to yours so few assumptions
  - Cheaper because leverages off other previous project investments
  - Opportunity to recruit some very good people
  - Very good for building social licence & educating influential people on the forest industry
  - Foresters doing what they should & be generalists
  - Fun, meet new people
- Nothings perfect so what research is unmet?

# Disadvantages of this model?

- Heavy reliance on operations foresters to explain what, why & where of their needs
- Need to understand forestry systems which are complex
- Research distraction on competing sectors
- Loss of access to researchers at the end of tasks
- Continuity under project funding
- Geographic separation
- Embarrassing when foresters think they're the experts

# Which of these trends & research needs are foresters expert in?

- National security
- Future environment
- Rapid change in world order
- Technology driven
- Social licence & social media driven
- Systems integration
- Heavy compliance demands
- Short attention spans
- Resource constraints
- Skills shortage
- AI & sensors
- Democratisation of high precision data
- Shortage of information & data overload
- Rapidly changing systems
- Global markets & standards
- Cyber security
- Collaboration



# What did foresters invent?

- Nothing new to foresters; using what others have developed:
  - We invented trees.....irrespective of who you ask we didn't!
  - We invented manual tree measurement; engineers, physicists & GIS specialists invented LiDAR & 100% measurements
  - We invented fire towers; physicists, space scientists, engineers invented satellites & algorithms
  - We invented sawn timber; architects, engineers & construction managers invented design and construction
  - We invented axes & handsaws; engineers invented mechanised harvesters
  - We invented tree breeding; statisticians and quantitative geneticists developed breeding systems, BLUP and rolling front
  - We developed public & student forestry education programs; Zuckerberg etc developed social media
  - We developed work shift schedules; sleep scientists developed fatigue management systems
- When we foresters thought we controlled our systems, other professions developed something better.

# Foresters are very good at.....

- Strategic view of the forest & wood products industry
- Developing & implementing tactical & operational plans to manage forests & natural assets in all aspects
- Educating & training people about forestry
- Core forestry, how many foresters & their age class distribution nationally?
  - Wood science
  - Silviculture
  - Forest health
  - Measurement, growth & yield

# 'Is loss of forest research capacity a Furphy?'

- ✓ So (re)building capacity in core capabilities is essential & should be a focus – not a Furphy!
- ✓ Some good news.....much of the research capacity our sector needs resides elsewhere & can be accessed when we need it with the right networks & funding model – a Furphy there's lack of these researchers!
- Evidence of loss of capacity in core forestry capacity consistent with:
  - Forestry Australia Position Statement 2023, Forest Research, Development and Dissemination <https://www.forestry.org.au/wp-content/uploads/2023/08/09-Forest-Research-Development-Dissemination-August-2023-v2.pdf>
  - ABARES 2018, 'Indicator 7.1e - Capacity to conduct research and development aimed at improving forest management and delivery of goods and services,' Australia's State of the Forests Report 2018, pp. 502-511. <https://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018>
  - Kile, GA, Nambiar, EKS & Brown AG, 2014, 'The rise and fall of research and development for the forest industry in Australia,' Australian Forestry, 77 (3-4), pp. 142-152.
  - Turner, J & Lambert, M, 2016, 'Changes in Australian forestry and forest products research for 1985-2013,' Australian Forestry, 79(1), pp.53-58.
  - Carnegie, A. J., Lawson, S., Mason, J. & Nahrung, H. 2022, Forest health and biosecurity in a changing world, Australian Forestry, 85(4), pp.141-145.

# ‘Is loss of forest research capacity a Furphy?’

- Once the Furphy was a life saver in the water it provided & the opportunity for storytelling and knowledge shared how to stay alive in the trenches.
- But we have to move on; there have been new & better models available now for decades and the horses that pulled them have been replaced too.
- New challenges need new models because the old ones are not fit for purpose anymore.



# ‘Is loss of forest research capacity a Furphy?’



AUSTRALIAN WAR MEMORIAL

REL/12474

