



2025 Forestry Australia Conference

*Restoring forests and landscapes
and securing Australia's future*

Handbook

Monday 20 to Thursday 23 October 2025
Adelaide Convention Centre, South Australia



forestryconference.com.au

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*Scientists, professionals and growers
who manage, study and care for our forests*





PIRSA is a proud Major Sponsor of the Forestry Australia 2025 Conference.

PIRSA is committed to advancing the prosperity and sustainability of our state's primary industries, and working with businesses and the community to promote the future of forestry and wood products in South Australia.



**Government
of South Australia**

Department of Primary
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WELCOME



Jim Wilson
Conference Convenor
& Vice-President

Welcome to the 2025 Forestry Australia Conference

Forestry Australia is delighted to welcome you to Adelaide for the 2025 Forestry Australia Conference – an opportunity to come together as a community of scientists, professionals and growers who manage, study and care for our forests, and explore how we can restore forests and landscapes while securing Australia's future.

The forestry sector has never held greater promise or faced more complex challenges. Climate adaptation, bushfire resilience, carbon reduction, Indigenous partnerships, and meeting Australia's housing needs through sustainable forest products – these aren't distant concerns but immediate opportunities for leadership and innovation.

Our theme, ***Restoring forests and landscapes and securing Australia's future***, reflects this moment of transformation. Over the coming days, you'll engage with leading experts, researchers, forestry professionals, farmers, rangers and restoration practitioners who are actively shaping solutions to these critical challenges.

With Forestry Australia's membership now spanning approximately 1,100 dedicated professionals across all aspects of forest and natural resource management, this conference represents the collective wisdom and diverse perspectives of our growing community. The calibre of speakers and depth of programming demonstrate our sector's commitment to evidence-based practice and collaborative problem-solving.

Your presence here signals your commitment to being part of the solution. As you participate in sessions, network with colleagues, and explore new ideas, remember that you're contributing to a legacy of environmental stewardship that will benefit generations to come.

Let's make these four days count. Together, we can forge pathways that ensure Australia's forests deliver positive environmental, cultural, economic, and social outcomes for our nation and our planet.

With thanks to the 2025 Forestry Australia Conference Committees for their assistance and dedication in organising this event:

2025 Forestry Australia Conference Organising and Program Committee:

Jim Wilson
Ian Blanden
Tegan Brown
Rod Keenan
Jacquie Martin
Mark Hunt
Nathan Paine
Emily Post
Rob Robinson
Sam Van Holsbeeck
Naomi Will
Monique Blason

Field Trip Sub Committee:

Peter Bulman
Andrew Dundon
Amy McMurren
Nathan Paine
Rameez Rameezdeen
Rob Robinson

GENERAL INFORMATION

ACKNOWLEDGEMENT

Forestry Australia acknowledge the Kurna people as the traditional custodians of the Adelaide Plains on which Adelaide / Tarntanya and the Adelaide Convention Centre are located. We acknowledge the Indigenous and First Nations people who are attending this event, and pay our respect to their Elders, past and present. We recognise and value the cultural practices and customs of all Indigenous Australians and First Nations peoples.

REGISTRATION DESK

The Registration Desk is located in the Panorama Foyer of the Adelaide Convention Centre, which can be found on the Upper Level of the venue. It will be open at the below times to assist with any of your Conference enquiries:

Monday 20 October:	8.00 am – 5.30 pm
Tuesday 21 October:	6.30 am – 5.15 pm
Wednesday 22 October:	7.30 am – 4.30 pm

For any enquiries outside of these designated times, please contact Naomi Will on 0439 336 511.

CONFERENCE NAME BADGES

All delegates, speakers and sponsors will be provided with a name badge, which we ask you to wear at all times within the Conference venue. Your name badge will be required for access to all sessions.

EXHIBITION

We are pleased to welcome our Sponsors and Exhibitors to the Conference. Please visit them in the Exhibition Hall during the refreshment breaks, to add extra value to your Conference experience and to thank them for their support of the event.

PRESENTERS AND SESSION CHAIRS

All speakers are asked to visit the Speakers Preparation Room (Panorama Foyer) to upload and test your presentation with an AV technician. We ask that all presentations are uploaded by no later than two refreshment breaks prior to your session.

The hours of operation for the Speakers Preparation Room are:

Monday 20 October:	7.00 am – 4.30 pm
Tuesday 21 October:	7.00 am – 5.00 pm
Wednesday 22 October:	8.00 am – 2.00 pm

Please arrive to your session room at least 20 minutes before your session is scheduled to commence. This will offer you the opportunity to meet your Session Chair, conduct a final check of your presentation and allow time to familiarise yourself with the technology and room. Thank you for your assistance, and we look forward to your great contributions as part of the Conference program.

FIELD TRIPS AND PPE

Participants are required to bring and wear their own Personal Protective Equipment as outlined below. Please see staff at the Registration Desk if you have any queries or need assistance.

FIELD TRIP #1 – Half Day Botanic Gardens and State Herbarium Walking Tour

PPE: No PPE required – sensible walking clothing and footwear.

FIELD TRIP #2 – Restoring Forests & Landscapes

PPE: Closed shoes suitable for walking tracks, sun protection: hat, sunscreen/ long sleeve shirt and pants.

FIELD TRIP #3 – A Journey Through Multi-Use Forestry

PPE: Closed shoes suitable for walking tracks, sun protection: hat, sunscreen/ long sleeve shirt and pants.

FIELD TRIP #4 – Technology, innovation, and design

PPE: Closed toe shoes – please ensure that footwear is suitable for walking in forests.

FIELD TRIP #5 – Creating Foresters Forest

PPE: Shoes suitable for walking.

FIELD TRIP #6 – 3 day Green Triangle Field Trip | From Seedling to Structure

PPE: Safety boots; full length pants (jeans are acceptable); long sleeve tops.

INTERNET ACCESS

Adelaide Convention Centre provides complimentary Wi-Fi to Conference delegates. Please use the below to connect to the network. No password is required.

Wi-Fi Name: ACC_Free

MOBILE PHONES

As a courtesy to other delegates, please ensure that all mobile phones are switched off or put on silent mode during all sessions.

DIETARY REQUIREMENTS

The Adelaide Convention Centre has been advised of any special dietary requirements you have indicated when registering. Please make yourself known to the staff – they will be happy to assist in providing you with your appropriate (and delicious!) food.

CONFERENCE MANAGER

For all conference enquiries, please contact:

EventSphere

Naomi Will

naomi@eventsphere.com.au

Phone: 0439 336 511



SOCIAL FUNCTIONS

Alongside Conference sessions and field trips sits an exciting social program, to extend networking and informal learning opportunities at the 2025 Forestry Conference.

All social functions need to be selected as part of your registration. Please see staff at the registration desk if you need to check if you are registered for a social function, or wish to add it.

WELCOME RECEPTION

Proudly supported by



Date: **Monday 20 October**

Time: **5.15pm to 7.15pm**

Location: **Exhibition Hall**

Cost: **Included in full and student registrations.**
Additional tickets \$80 pp (inclusive of GST).

Following Day One of the Conference, join us at the LOGR Welcome Reception for a casual evening to catch up with colleagues, both familiar and new, and kick off the 2025 conference.

DIVERSITY IN FORESTRY BREAKFAST

Proudly supported by



Date: **Tuesday 21 October**

Time: **7.00am to 8.15am**

Location: **Exhibition Hall & Plenary Room**

Cost: **Included in full and student registrations.**
Additional tickets \$60 pp (inclusive of GST).

This event is open to all delegates attending the conference. The Diversity in Forestry Breakfast will feature a panel of women speaking about their experiences working in the forestry sector, their thoughts on promoting diversity within the sector and a discussion on how to best facilitate women having a rewarding forestry career.

FUTURE FORESTERS INITIATIVE NETWORKING DINNER

Date: **Tuesday 21 October**

Time: **7.00pm to 9.00pm**

Location: **Black Bull Hotel**

Cost: **Included for eligible registrations.**

Invitations for this event are open to Conference delegates aged 35 years and under. A great opportunity to expand networks and meet peers from Australia. The purpose of the Future Foresters Initiative (FFI) is to provide support to students and early career professionals from scientific forestry or related fields – through training, networking, mentoring and other social and professional development activities. Previous FFI engagements have established productive connections and exchanges.

CONFERENCE DINNER

Proudly supported by



Date: **Wednesday 22 October**

Time: **7.00pm onwards**

Location: **Strathmore Hotel, 129 North Terrace, Adelaide SA 5000**

Dress Code: **Smart casual**

Cost: **Included in full and student registrations.**
Additional tickets \$125 pp (inclusive of GST).

Join us for this casual, roaming Conference Dinner, with thanks to Sustainable Timber Tasmania. An evening to network with colleagues, both new and familiar, set amongst the iconic Currumbin Wildlife Sanctuary bushland and rainforest. An opportunity to reflect on the happenings and learnings of the three days of Conference sessions, prior to the Field Trips the following day.



CONFERENCE PROGRAM

Disclaimer: While every effort has been made to ensure the accuracy of this program at the time of publication, details are subject to change without notice.

MONDAY 20 OCTOBER			DAY ONE	
08.00	Registration desk opens			
10.15	Morning tea City Rooms Foyer			
10.45 – 12.30	Conference Workshop #1 City 1 & 2		Conference Workshop #2 City 3 & 4	
	Pathways forward: Strengthening professional development in forestry Mark Brown, <i>University of the Sunshine Coast</i> Tracey Gale, <i>Forestry Australia</i>		Enhancing professional expertise and capacity for forest management in the Pacific – the development of the Pacific Network of Forestry Professionals Graham Wilkinson, <i>Forestry Australia</i> Jalesi Meteboto, <i>Fiji</i>	
12.30	Lunch Exhibition Hall			
13.30 – 15.00	Opening and Plenary Session #1 Plenary Room			
	Chair: Jim Wilson Redefining Forest Success: Multiple Returns, One Landscape Radha Kuppalli, <i>Board Director, Greening Australia and Accounting for Nature</i>			
15.00 – 15.30	Afternoon tea Exhibition Hall			
	Breakout #1 Plenary Room	Breakout #2 City 1 & 2	Breakout #3 City 3	Breakout #4 City 4
	Theme: Future prospects for Australian forestry Chair: Rod Keenan Proudly supported by 	Theme: Social aspects of forest restoration Chair: Delene Weber	Theme: Natural capital and carbon in forest restoration Chair: Tammy Auld	Theme: Alternative plantation models Chair: Jo Sasse
15.30 – 15.50	Why is forestry in Australia so difficult? Rob de Fegeley AM, <i>AR&SM de Fegely Partnership</i>	Restoration to the rescue in Canada’s Western Forests – Old and new strategies Margaret Symon, <i>Canadian Institute of Forestry</i>	Recognising forestry asset values with Natural Capital Dashboards Ziggy Gelman, <i>IDEEA Group</i>	Mid-rotation management for small-scale plantations Jonathan Lambert, <i>Heartwood Unlimited</i>
15.50 – 16.10	The role of forestry in Australia’s bioeconomy: an assessment of the opportunities and challenges with an international comparison Leanda Garvie, <i>University of the Sunshine Coast</i>	Considering social aspects of forest landscape restoration in Victoria Rebecca Ford, <i>The University of Melbourne</i>	Enterprise level natural capital accounting to connect local agroforestry decision making with local and global imperatives for restoration Daniel Mendham, <i>CSIRO</i>	Managing, monitoring and advancing durable eucalyptus species plantations in Victoria Emma Leslie, <i>Heartwood Unlimited</i>

CONFERENCE PROGRAM

MONDAY 20 OCTOBER				DAY ONE
	Breakout #1 Plenary Room	Breakout #2 City 1 & 2	Breakout #3 City 3	Breakout #4 City 4
	Theme: Future prospects for Australian forestry Chair: Rod Keenan Proudly supported by 	Theme: Social aspects of forest restoration Chair: Delene Weber	Theme: Natural capital and carbon in forest restoration Chair: Tammy Auld	Theme: Alternative plantation models Chair: Jo Sasse
16.10 – 16.30	Australian forest policy threatens global action to conserve biodiversity and mitigate climate risk Tyron Venn, <i>The University of Queensland</i>	A retrospective for a new perspective – Facilitating a community journey of Victorian native forestry Wally Notman, <i>Gippsland Forest Dialogue</i>	Sequestering carbon in regeneration: an “elaborate hoax” or landholders making a difference? Cris Brack, <i>Australian National University</i>	Evaluating the growth and commercial viability of different sandalwood species under mixed-species plantation management Duc Bui, <i>Forest Research Institute, University of the Sunshine Coast</i>
16.30 – 16.50	Working with trees and wood in a climate emergency Paul Haar, <i>University of Melbourne</i>	Play in Nature – cultivating connection, fostering healthy people Daniel Burton, <i>Educated by Nature</i>	Residues for climate mitigation: a potential new ACCU methodology Fabiano Ximenes, <i>NSW DPIRD</i>	Testing native species as short-rotation woody crops in NSW David Bush, <i>CSIRO</i>
16.50 – 17.10	A new value-proposition requires a new wood-production paradigm Benjamin Boxshall, <i>Wood4Good</i>	Training in Tasmania’s co-regulatory forest practices system Christine Grove and Laurel Trebilco, <i>Forest Practices Authority</i>	Restoring forests, restoring futures: A case study in hybrid conifer-rainforest reforestation for climate and community resilience Daryl Killin, <i>James Cook University</i>	A medium scale, integrated production – processing model for increasing Australia’s wood supply and natural capital in agricultural landscapes Craig Nitschke, <i>University of Melbourne</i>
17.15 – 19.15	Welcome Reception Exhibition Hall Proudly supported by 			

TUESDAY 21 OCTOBER

DAY TWO

07.00 – 08.15	Diversity, Equity and Inclusion in Forestry Breakfast Exhibition Hall & Plenary Room			
	Creating safe work environments Chair: Chris Briggs Panellists: Kelly Crosthwaite, <i>DECCA</i> Jacquie Martin, <i>Forestry Australia</i> Luci Virgo, <i>OneFortyOne</i> Nora Devoe, <i>Sylvacare International</i>			Proudly supported by  Australian Government Australian Centre for International Agricultural Research
08.30 – 09.30	Plenary Session #2 Plenary Room First Nations and forest management plenary panel Chair: Rod Keenan Panellists: Courtney Hunter-Hebberman, <i>Peramangk Traditional Custodian</i> Rachael Cavanagh, <i>Minyungbal mibany</i> Kim Puruntatameri, <i>Tiwi Plantations Corporation</i> Gibson Farmer Illortaminni, <i>Tiwi Plantations Corporation</i>			
	Breakout #5 Plenary Room Theme: Challenges What keeps me up at night? Chair: Jacquie Martin	Breakout #6 City 1 & 2 Theme: Forestry in Tasmania – The Past, Present, and Future Chair: Elizabeth Pietrzykowski	Breakout #7 City 3 Theme: Innovation in plantation management Chair: Amy McMurren	Breakout #8 City 4 Theme: The role of managed fire in forest restoration Chair: Lachie McCaw
09.40 – 10.00	Anshul Chaudhary, <i>FCNSW</i> Michelle Freeman, <i>Forestry Australia</i> Cameron MacDonald, <i>OneFortyOne</i> David Shelton, <i>New Forests</i>	Forestry in Tasmania – The past, present, and future Dr Elizabeth Pietrzykowski, <i>Private Forests Tasmania</i> Anne Chuter, <i>Forest Practices Authority</i> Suzette Weeding, <i>Sustainable Timber Tasmania</i>	The Forestry Centre of Excellence: A contemporary forest research entity a government, university and industry partnership in regional South Australia Jim O’Hehir, <i>UniSA</i>	Developing the next edition of an Australian in-field fuel assessment guide Samuel Hillman, <i>Department of Energy, Environment and Climate Action</i>
10.00 – 10.20			Innovate, stop, swap, or spot: Managing koalas and forestry worker safety in bluegum plantations Delene Weber, <i>University of South Australia</i>	To remove or not to remove. That is the question, facing fire managers in windthrow affected landscapes Shannon Devenish, <i>FFMVIC</i>
10.20 – 10.40			Overview of implications of water licencing for plantation forest growers Baden Myers, <i>Forestry Centre of Excellence</i>	Understanding seasonal fire risk in live fuels: presenting a new mechanistic live fuel moisture content (LFMC) model Tegan Brown, <i>Department of Energy, Environment and Climate Action</i>
10.40	Morning tea Exhibition Hall			

CONFERENCE PROGRAM

TUESDAY 21 OCTOBER				DAY TWO
	Breakout #9 Plenary Room	Breakout #10 City 1 & 2	Breakout #11 City 3	Breakout #12 City 4
	Theme: Integrating biodiversity and forest restoration Chair: Sebastian Klein	Theme: First Nations approaches to forest and landscape restoration Chair: Blair Freeman	Theme: Innovation in plantation management Chair: Julianne O'Reilly-Wapstra Proudly supported by  ForestrySA	Theme: Innovation in wood products Chair: Ian Blanden
11.10 – 11.30	Biodiversity: driver or impediment to forest restoration and plantation forestry? Brendan Wintle , <i>University of Melbourne</i> Panellists: Brendan Wintle , <i>University of Melbourne</i> Rodney Keenan , <i>University of Melbourne</i> Daryl Killin , <i>James Cook University</i>	Building Aboriginal partnerships: The Nukunu Cool Burn Program Travis Thomas , <i>Nukunu Lead Fire Practitioner</i> Delene Weber , <i>University of South Australia</i>	Assessment of current best practice techniques for handling pesticides in forestry applications Mahima Seeborun , <i>Future Industries Institute, University of South Australia</i>	Engineered wood products for Australian domestic consumption Jeffrey Morrell , <i>University of South Australia</i>
11.30 – 11.50		Development of an endemic sandalwood species for Indigenous led forestry on Cape York Peninsula David Lee , <i>Forest Research Institute, University of the Sunshine Coast</i>	Towards sustainable plantation water management: Insights from monitoring <i>Pinus radiata</i> and <i>eucalyptus globulus</i> water use in South Australia Pasindu Karunatilaka , <i>UniSA STEM, University of South Australia</i>	Big picture, wood products and trees, what is the market demanding? Christine Briggs , <i>WoodSolutions Timber Framing Campaign</i>
11.50 – 12.10		Indigenous-Owned certified forestry on the Tiwi Islands Matt de Jongh , <i>Responsible Wood</i> Hamish Little , <i>Midway</i> Gibson Farmer Illortaminni , <i>Tiwi Plantations Corporation</i> Kim Puruntatameri , <i>Tiwi Plantations Corporation</i>	Enhancing softwood and hardwood plantations site productivity and subsequent operational efficiency by use of an innovative clean-row establishment 'system' Jim O'Hehir , <i>UniSA</i>	Suitability of Victorian plantation-grown eucalypts for rotary veneer production Joanne Lewis , <i>University of Melbourne</i>
12.10 – 12.30		Implementing cultural burning in south-east NSW – challenges and opportunities Tony Bartlett , <i>Bartlett Forestry</i> Peter Dixon , <i>Bega Local Aboriginal Land Council</i>	Effect of moisture content and temperature on the bending and shear properties of in-grade sawn timber Rameez Rameezdeen , <i>University of South Australia</i>	Managed blue gum plantations processed into high-value solid timber products Jon Lambert , <i>Heartwood Unlimited</i>
12.30	Lunch Exhibition Hall			

TUESDAY 21 OCTOBER

DAY TWO

	Breakout #13 Plenary Room	Breakout #14 City 1 & 2	Breakout #15 City 3	Breakout #16 City 4
	Theme: Restoration: the role of Australian forest silviculture Chair: Leon Holt Proudly supported by 	Theme: First Nations approaches to forest and landscape restoration Chair: Tolita Davis-Angeles	Theme: Innovation in forest management FWPA Forest Growers' Research Program Chair: Jodie Mason Proudly supported by 	Theme: Restoration approaches in the Asia Pacific Chair: John Herbohn
13.30 – 13.50	Re-creating healthy forests – silviculture's role in restoration Michelle Freeman, <i>Forestry Australia</i>	Walking together: Building a new future for forestry with Traditional Owner Thomas Holden, <i>Warrgamay Traditional Owner & Nirrwarra Global</i> Showcasing the restoration of the Mungalla Wetlands – Healing Country, reviving culture Jacob Cassady, <i>Nywaigi Traditional Owner & Mungalla Station</i>	Optimising the productivity of hardwood plantations in southern Australia John McGrath, <i>MFS McGrath</i>	The design and implementation of a large-scale reforestation project funded by carbon credits Claudia Romero and John Herbohn, <i>University of the Sunshine Coast</i>
13.50 – 14.10	A history of the thinning of regrowth forests in Victoria, can this guide ecological thinning Michael Ryan, <i>Department of Energy Environment and Climate Change Action</i>		Plantation water use and availability across a topographically complex catchment area Nina Hinko-Najera, <i>University of Melbourne</i>	Trajectories of forest recovery with <i>Acacia mangium</i> in the Philippines: what made it a successful story Jenny Vivian, <i>University of the Sunshine Coast</i>
14.10 – 14.30	Determining carbon outcomes from silvicultural treatments in private native forests on the NSW north coast Jessica Sheehan, <i>NSW DPIRD</i>		IoT Acoustics for proactive monitoring of threatened forest fauna in remote environments James Montgomery, <i>University of Tasmania</i>	Overcoming challenges in assisted natural regeneration for forest and landscape restoration: Insights from the Philippines Tomiwa Oluwajuwon, <i>Forest Research Institute, University of the Sunshine Coast</i>
14.30 – 14.50	Recovering Ash forests in the post-timber harvesting era. Why an innovative solution is needed Owen Bassett, <i>Forest Solutions</i>		Integrating APSIM into resource management systems for estate wood flows and valuations that account for climate change Jim O'Hehir, <i>UniSA</i> Advancing eucalyptus breeding for disease resistance: Tools for managing <i>Teratosphaeria</i> Leaf Disease Bala Thumma, <i>Diversity Arrays Technology</i>	Insights from the implementation of a large-scale forest restoration project funded through carbon credits Claudia Romero and John Herbohn, <i>University of the Sunshine Coast</i>
14.50	Afternoon tea Exhibition Hall			

CONFERENCE PROGRAM

TUESDAY 21 OCTOBER				DAY TWO
	Breakout #17 Plenary Room	Breakout #18 City 1 & 2	Breakout #19 City 3	Breakout #20 City 4
	Theme: Future silviculture Australian forests Chair: Patrick Baker Proudly supported by 	Theme: First Nations approaches to forest and landscape restoration Chair: Tolita Davis-Angeles	Theme: Innovation in forest management FWPA Forest Growers' Research Program Chair: Kathryn Dullard Proudly supported by 	Theme: Farm, trees and agroforestry Chair: Andrew Hurford
15.20 – 15.40	Silviculture in Australia: The past 25 years, the next 25 years Moderated by: Patrick Baker , <i>University of Melbourne</i> Nora Devoe , <i>Sylvaculture International</i> Panellists: Libby Pinkard , <i>CSIRO</i> Lachie McCaw , <i>Forestry Australia</i> Sean Ryan , <i>PFSQ</i> Dianne Patzel , <i>UniSA</i> Tony Brown , <i>FCNSW</i> Owen Bassett , <i>Forest Solutions</i>	Indigenous people working on Bunya Country Adrian Bauwen , <i>Bunya Peoples Aboriginal Corporation (BPAC)</i> Care for Country silviculture projects Ruth Langford , <i>Nayri Niara</i>	PINT – A Program for performing survival counts Anthony Finn , <i>University of South Australia</i> Develop and validate rapid, high-throughput diagnostic protocols for forest biosecurity surveillance Conrad Trollip , <i>Forest Science, NSW Department of Primary Industries and Regional Development</i> Assessing productivity and growth constraints in Eucalypt and Pine plantations for sustainable forestry in Tasmania Auro Almeida , <i>CSIRO</i> Innovative nursery management solutions to sustainably manage root disease, improve nursery utilisation, and enhance resilience and productivity of planted pines Jonathan Plett , <i>Hawkesbury Institute for the Environment, Western Sydney University</i> Safeguarding Australian exports of logs from future withdrawals of methyl bromide Dylan McFarlane , <i>VSICA Research</i> Cost/benefit analysis of the fire risk mitigation impacts of treating pine thinning residues Martin Strandgard , <i>University of the Sunshine Coast</i>	From seed to sawn timber – An agroforestry journey Philippa Noble , <i>Brimin Lodge Pastoral</i> Promoting sustainable land use and agroforestry through collaboration and innovation in South Australia's agricultural landscape Samantha Blight , <i>Coorong District Council</i> Impact of Thinning on Wood Density and Diameter Growth of Corymbia Hybrids in Silvopastoral Systems David Lee , <i>Forest Research Institute, University of the Sunshine Coast</i> Growth and Form of 10-year-old Casuarina obesa Provenances with Frankia on saline avon farmland Robert Hingston , <i>Farm Forestry Advisor</i> Integrating small-scale farm forestry into Australia's supply chains: insights from simulation and cost modelling Li Meng , <i>University of South Australia</i>
15.40 – 16.00				
16.00 – 16.20				
16.20 – 16.40				
16.40 – 17.00				

TUESDAY 21 OCTOBER

DAY TWO

17.00 – 17.45	Networking Drinks and Poster Session Join us for a relaxed and engaging Poster Session, where presenters will share their ideas, projects, research, and initiatives with delegates in an informal, conversational setting. This is a fantastic opportunity to learn and connect with others, exchange ideas, and inspire new collaborations.
17.50 – 18.30	Forestry Australia's Annual General Meeting Plenary Room
19.00 – 21.00	FFI Networking Dinner Black Bull Hotel
	Evening at leisure



Australian Government
Australian Centre for
International Agricultural Research

THE AUSTRALIAN GOVERNMENT'S AGRICULTURAL
RESEARCH-FOR-DEVELOPMENT AGENCY

RESEARCH PROGRAM

Forestry



14 projects

projects across the
Pacific, Asia and Africa

AUD \$4.9 million

invested in forestry research
FY 2024-2025

ACIAR projects aim to reduce poverty, manage natural resources, improve food security and mitigate the effects of climate change. For the past 40 years, about three-quarters of ACIAR forestry research investments have related to agroforestry and smallholder planted forests. The ACIAR forestry research program aims to:

- improve livelihoods of smallholders and communities by enhancing sustainable land and forest management
- foster economic growth through legal, sustainable and value-adding forest and tree-based enterprises in developing countries
- contribute to the Australian Government's international forest-policy priorities, combating illegal logging and reducing deforestation.



ACIAR

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CONFERENCE PROGRAM

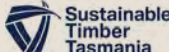
WEDNESDAY 22 OCTOBER			DAY THREE	
08.15	Arrival tea and coffee Exhibition Hall			
08.45 – 10.30	Plenary Session #3 and Awards Plenary Room			
	Chair: Michelle Freeman Global reflections on the complexity of the outlook for production and conservation in forested landscapes – navigating increasing risk, competing values and irrationality Peter Cochrane, Councillor and Vice President of the International Union for Conservation of Nature (IUCN)			
10.30	Morning tea Exhibition Hall			
	Breakout #21 Plenary Room	Breakout #22 City 1 & 2	Breakout #23 City 3	Breakout #24 City 4
	Theme: Forestry in the future Chair: Glenn Dale	Theme: Future Foresters Chair: Jenna Hammond Proudly supported by 	Theme: Plantation management risk and uncertainty Chair: Ruth Ryan	Theme: Technology in forest management and restoration Chair: Mike Sutton
11.00 – 11.20	One Landscape, Many Demands Aaron Soanes, ESG360	Opportunities and challenges for young professionals in Australia’s forestry sector Moderated by: Jenna Hammond, FFI Chair, Forestry Australia Panellists: Jack Davis, Department of Energy, Environment and Climate Action Alex Dudowski, HVP Plantations Caitlin Ellis, HVP Plantations Yasika Subasinghe, Forestry Australia’s Future Foresters Initiative	The Role Risk Plays in Decision Making Belinda Olejniczak and Robbie Sinclair, HQ Plantations	Stem Attribute Imputation from Fused Aerial and Terrestrial LiDAR Scans Anthony Finn, University of South Australia
11.20 – 11.40	Panel: The future of forestry and its role in addressing global sustainability challenges Moderated by: Glenn Dale, Verterra Panellists: Daniel Mendham, CSIRO Blair Freeman, Forestry Australia Aaron Soanes, ESG360 Mia Cassidy, Hurford Forests		Understanding Global Weather Perils and Wildfire Risk Lynn Roehrig, Descartes Underwriting	Accurately estimating aboveground biomass of early-stage reforestation stands in the Philippines using multi-source LiDAR Fellice Gabrielle Catelo, University of the Sunshine Coast
11.40 – 12.00			Spatial variation in damage to plantation trees and characteristics that explain sambar deer damage Dr Alison Hayman, University of Tasmania	Remote sensing of Australian plantation forests: the resolution trade-off Christine Stone, DPI NSW
12.00 – 12.20			Using spatial data to reduce the need for browsing mammal control in forest landscapes James Grimsdale, University of Tasmania	Automating Tree Measurement and Analysis Using the RIEGL LIS Tree Analyzer in RiSCAN PRO Glenne Blyth, Curtin University

WEDNESDAY 22 OCTOBER

DAY THREE

12.20	Lunch Exhibition Hall			
	Breakout #25 Plenary Room Theme: Forest biosecurity challenges Chair: Paco Tovar	Breakout #26 City 1 & 2 Theme: Plantation management, learning from history Chair: David Geddes	Breakout #27 City 3 Theme: Future directions for forest certification Chair: Jeremy Allen	Breakout #28 City 4 Theme: Technology in forest management and restoration Chair: Suzette Weeding
13.10 – 13.30	Risk assessment for Australian forest biosecurity: creating our greatest hits lists Helen Nahrung, <i>Forest Research Institute, University of the Sunshine Coast</i>	Lessons from the last 50 years of plantation forestry in SA Mike Bleby Peter Bulman Lew Parsons Peter Zed	FSC Certification of National Parks – A Global Model for Sustainable Public Land Management and Ecosystem Services Annah Agash, <i>Forest Stewardship Council</i>	Mapping and evaluating the commercial suitability of the native forest estates for timber production in northern and southern NSW, Australia Masoomah Alaibakhsh, <i>NSW DPI</i>
13.30 – 13.50	Eucs on the menu: horizon scanning, global composition and interceptions of Eucalyptus-feeding insects Andy Howe, <i>Forest Research Institute, University of the Sunshine Coast</i>		Effective Stakeholder Engagement – Implications for Forest Managers Ross Garsden, <i>BSI</i>	The Changing Face of Fire in Australia – and How Technology Can Help Us Adapt Rob Vernon, <i>Indicium Dynamics</i>
13.50 – 14.10	Forest product border measures to secure Australia's forestry future Chris Howard, <i>Department of Agriculture, Fisheries and Forestry</i>		From Forest to Shelter – A Journey of Sustainability with FSC Certification Melanie Robertson, <i>Forest Stewardship Council</i>	The use of tree databases, remote sensing and artificial intelligence to assist in urban forest biosecurity preparedness and response David Smith, <i>ArborCarbon</i>
14.10 – 14.30	Overview of Monitoring and Management of Autumn Gum Moth (<i>Mnesampela privata</i>) in the GT Dianne Patzel, <i>University of South Australia</i>		Update on the EU Deforestation Regulation and the response through Australian Standards Simon Dorries, <i>Responsible Wood</i>	Tree pruning but not as you know it; reducing fire risk with a semi-autonomous pruning machine in Radiata pine plantations Braden Jenkin, <i>Sylva Systems</i>
14.30 – 14.50	Biological control of giant pine scale in Australia Dr Umar Lubanga, <i>Agriculture Victoria</i>		The Role of Forest Certification in Securing Australia's Future Matt de Jongh, <i>Responsible Wood</i>	Using drone-based data to increase site selection efficiency and a supervised learning approach to eligibility classification for Philippines reforestation Calum McRae, <i>University of the Sunshine Coast</i>

CONFERENCE PROGRAM

WEDNESDAY 22 OCTOBER			DAY THREE	
14.50	Afternoon tea Exhibition Hall			
	Breakout #29 Plenary Room Theme: Imagine this: Future scenarios for Australia's plantation estate Chair: Lyndall Bull	Breakout #30 City 1 & 2 Theme: Future forestry skills Chair: Anthony Walsh	Breakout #31 City 3 Theme: Adapting to climate change Chair: Tegan Brown	Breakout #32 City 4 Theme: Technology and forestry Chair: Mark Brown
15.15 – 15.35	Panellists: Tammy Auld, <i>Timberlands Pacific</i> Rob de Fégely, <i>AR&SM de Fegely Partnership</i> Diana Hallam, <i>AFPA</i> Braden Jenkin, <i>Sylva Systems</i> Andrew Hurford, <i>Hurford Forests</i>	Future Forestry Skills: Insights and Innovations from the Forestry Workforce Training Program Anthony Walsh, <i>ForestWorks</i>	Monitoring Australian forests: how understanding change in the recent past can support management for the future Belinda Medlyn, <i>Western Sydney University</i>	Expert panel session – Technology in Forestry: From Mechanisation to Forestry 5.0 Steve Walker, <i>Terrafolia</i> Shona Heading, <i>HQP</i> Adrian Wapling, <i>John Deere</i> Francis Richardson, <i>Orana Enterprises</i> Paul Salmon, <i>University of the Sunshine Coast</i>
15.35 – 15.55			The importance of and challenges in doing applied research: adaptive management in the Tasmanian forest practices system Amy Koch, <i>Forest Practices Authority</i>	
15.55 – 16.15			Stressed country and communities, yet managers are further from the issues than ever.....can we fix it, yes we can! Ewan Waller, <i>East Gippsland CMA</i>	
16.20 – 17.30	Closing Session Plenary Room Path to 2035: How might we enable transformation in the Australian forest sector? Chair: Joseph Lawrence, <i>AFWI</i> Panellists: Professor John Warner, <i>Warner-Babcock Institute, USA</i> Andrew Morgan, <i>SFM</i> Nicola Pero, <i>Iberdrola Australia</i> Tim Woods, <i>IndustryEdge</i> Closing remarks Chair: Michelle Freeman			
18.30 – 21.30	Conference Dinner Strathmore Hotel			Proudly supported by  Australian Forest and Wood Innovations 



Field Trips are a wonderful way to have a hands-on learning experience, complementing our Conference session program.

Please refer to the **General Information** section of the Conference Handbook for details on Field Trip PPE.

Participation in Field Trips 1 to 5 are included in all full registrations, and will take place on Thursday 23 October. Additional tickets are available to purchase.

We ask attendees to please meet in the bus zone on **North Terrace** outside the **Adelaide Convention Centre** no later than the times indicated here. The coaches will depart at the times indicated, due to very full itineraries the coaches cannot wait for delegates who are running late.

The trips return time listed are approximate, and we will do our best to ensure return by the stated times – however, please note that we cannot guarantee that you will be back in time to meet flights.

FIELD TRIP #1 – BOTANIC GARDENS AND STATE HERBARIUM WALKING TOUR

Departure time: 8.20am for an 8.30am departure. Please note: this is a walking tour, and you will be walking from the Convention Centre to the Botanical Gardens. Finish at Botanical Gardens by approximately 12.30 pm.

The development of plantation forestry in South Australia and Adelaide's Botanic Gardens are closely linked. This walking tour will explore the famous gardens via a hosted indigenous cultural tour which ends at the Museum of Economic Botany and café. It's then a short walk to the State Herbarium for a hosted visit to its extensive collections and research activities. This is adjacent to the National Wine Centre and participants may decide to visit for lunch and a tasting tour.

FIELD TRIPS

FIELD TRIP #2 – RESTORING FORESTS & LANDSCAPES

Departure time: 8.10 am for an 8.30 am departure
Return: by approximately 6.00pm

This field trip focuses on the theme of *Restoring Forests and Landscapes*, featuring site visits to the Forktree Project, Currency Creek Arboretum, and other sites demonstrating practices in ecological restoration and conservation in South Australia.

The journey begins at the Forktree Project, a community-driven habitat restoration and environmental education project transforming degraded farmland into biodiverse native habitat. This visit will highlight practical approaches to revegetation, nursery/seed orchard management, soil health improvement, and carbon capture, illustrating how degraded landscapes can be regenerated through collaborative stewardship and ecological design. Together, these sites offer valuable insights into the science, practice, and community engagement necessary for restoring forests and landscapes in a changing climate.

Continue to SA Water's Myponga Reservoir to discover how water catchment management integrates with carbon sequestration programs, followed by a scenic lunch break overlooking the reservoir.

The day concludes at Currency Creek Arboretum, where participants will explore one of the world's most comprehensive collections of Eucalyptus species, emphasising the role of scientific research and ex-situ conservation in supporting the resilience of native forests. Discussions will centre on the ecological significance of genetic diversity and the arboretum's contributions to restoring Australia's unique woodland ecosystems.

The field trip will conclude with the group's return to Adelaide, enriched with insights into the challenges and successes of restoring forests and landscapes in a changing environment.



FIELD TRIP #3 – A JOURNEY THROUGH MULTI-USE FORESTRY

Departure time: 8.10 am for a 8.30 am departure.
Return: by approximately 3.30pm.

Explore the multi-use forestry operations at Kuitpo Forest, just an hour from Adelaide CBD. This tour offers forest industry professionals a comprehensive look at innovative recreational and cultural initiatives within sustainable forest operations.

Start with a Kurna Welcome and exploration of a cultural coolamon (shield) and yuki (canoe) cutting site. Visit CABN sites showcasing eco-friendly accommodation amidst radiata pines. Experience TreeClimb Kuitpo, promoting environmental education and conservation through adventure tourism. Finally, tour Chookarloo Campground, ForestrySA's most popular campsite.

Learn how ForestrySA manages over 10,000 hectares of plantation forest and 4,000 hectares of native reserves, balancing timber production, conservation, and recreation.



FIELD TRIP #4 – TECHNOLOGY, INNOVATION, AND DESIGN

Departure time: 8.10 am for a 8.30 am departure.
Return: by approximately 5.15pm.

Dive into the cutting edge of forestry science and timber innovation at UniSA's Mawson Lakes Campus on this technology-focused full-day experience. Tour state-of-the-art facilities including the Design & Construct Laboratory, where you'll see how modern engineering transforms timber into contemporary building solutions, and the Future Industries Institute, showcasing breakthrough research in biochar and chemical testing. Participate in rotating small-group sessions covering plantation water use monitoring, remote sensing technology for forest management, and structural timber testing in world-class engineering laboratories. After lunch, immerse yourself in the future of forestry education and operations through hands-on virtual and augmented reality demonstrations that are revolutionising how

foresters learn, plan, and execute forest management activities. With presentations from leading researchers and academics from UniSA's Sustainable Infrastructure and Resource Management (SIRM) and Forestry Centre of Excellence (FCoE), this tour provides unparalleled access to the technologies and innovations shaping the future of sustainable forestry and timber construction.



FIELD TRIP #5 – CREATING FORESTERS FOREST

Departure time: 10.00 am for a 10.15 am departure.
Return: by approximately 1.00pm.

In 1993 Dame Roma Mitchell – the governor of the time – planted the first tree in Foresters' Forest. Over the decade that followed, community groups and organisations planted the remainder of the area into 12 distinct forest and woodland ecological communities.

This collaboration created an urban forest with 12 areas, each with their own characteristics and species. These 12 areas provide a unique chance to appreciate a diversity of plants and animals in a metropolitan setting. Featuring species endemic to interstate or even overseas, you would only otherwise be able to see these species by travelling far and wide. The Foresters' Forest brings them together in a central location for community to explore.



FIELD TRIP #6 – 3 DAY GREEN TRIANGLE FIELD TRIP | FROM SEEDLING TO STRUCTURE

This is a three-day field trip and is available at an additional charge. Delegates attending this trip are required to meet outside the Adelaide Convention Centre on North Terrace on Thursday 23 October by no later than 7.10 am for a 7.30 am departure. Field Trip #6 is scheduled to return by 4.00pm on Saturday 25 October, however, we cannot guarantee that you will be back in time to meet flights.

This dynamic three-day technical field tour traverses the Green Triangle forestry region, providing an end-to-end exploration of the modern plantation forest products supply chain – from advanced genetics and propagation to harvesting, processing, and final product development. The program highlights innovation, research, and sustainability practices underpinning Australia's largest plantation forestry region.

This tour brings together visits to Tree Breeding Australia and commercial nursery operations (OneFortyOne Glencoe Nursery), investigates the science of genetic improvement, seedling production, and plantation establishment. The itinerary progresses through operational plantation forests and harvesting sites, enabling participants to observe silvicultural practices, fire management infrastructure (including surveillance towers and Australia's largest AI-enhanced fire detection camera systems), and forest health responses to drought, pest, and disease.

Participants will engage with the new South Australian *Forestry Centre of Excellence* to examine active R&D initiatives, workforce development pathways, and integration with university and industry research. Sawmill site visits will demonstrate log processing and engineered wood product manufacturing, followed by an exploration of circular economy solutions through organic waste reprocessing.

Designed for technical professionals, policymakers, and industry stakeholders, this field trip offers a comprehensive and practical overview of the plantation forestry sector's lifecycle, challenges, and opportunities.



THANK YOU TO OUR SPONSORS AND EXHIBITORS

DESTINATION SPONSOR



MAJOR SPONSORS



Australian Government

Department of Agriculture, Fisheries and Forestry

The **Department of Agriculture, Fisheries and Forestry** works to enhance Australia's agricultural, fisheries and forestry industries.

Our vision is a more sustainable and prosperous Australia through biosecurity, agricultural production and trade. We support industry to grow towards a \$100 billion agriculture, fisheries and forestry industry by 2030 amid changing global market conditions.

We work with state and territory governments and industry to create and support productive, profitable, sustainable and internationally competitive Australian forest and forest products industries. This includes delivering a suite of initiatives totalling over \$300 million to support Australia's forest industries to innovate and improve the capacity and capability of the sector.

Additionally, through the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), we produce Australia's State of the Forest Report and provide key industry research and data.

For further information, please visit:
www.agriculture.gov.au



ForestWorks is an industry owned not-for-profit organisation offering services to support skills development of the forest, wood, paper, timber, furnishing and textiles industries. ForestWorks partners with government, industry, unions, workers, and training providers to develop a highly skilled workforce for these sectors. Focus areas include developing new workers, upskilling existing workers and supporting workers through their careers.

Our services include gathering industry intelligence, providing skills development solutions, developing nationally accredited VET training packages, and managing government-funded training programs. We are a collaborative partner and professional service provider to Skills Insight JSC.

Key achievements include the successful Snowy Valley Skills Development Service, and the establishment of the Victorian Forestry Worker Support Program in response to the Victorian Government's Forestry Transition Program. Additionally, we developed a scoping study report for the Forestry Workforce Training Program supported by a \$10 million investment from the Australian Government over four years.

Our success is driven by a Board of Directors, engaged stakeholders, dedicated staff, and expert service providers. With offices in Victoria, New South Wales, and Queensland, ForestWorks ensures high-quality, locally tailored services.



Government of
South Australia

The **Department of Primary Industries and Regions (PIRSA)** is a key economic development agency in the Government of South Australia.

Our passionate team of around 800 people work across metropolitan and regional South Australia.

We protect the prosperity and sustainability the state's extensive primary industries sector including the food, wine, aquaculture, fisheries, forestry, grains, livestock, dairy, and horticulture industries. We also support and develop regional communities.

South Australia's forest and wood products sector is significant to the state's economy and plays an important role in the growth and development of our regional communities.

Our Forest Industries' team works with businesses and the community to promote the future of forestry and wood products in South Australia. This includes seeking opportunities for industry development, leading forestry research, and delivering environmental and economically sustainable practices.

PIRSA has been supporting the delivery of key forestry initiatives including the establishment of the \$16 million Forestry Centre of Excellence in Mount Gambier and the South Australian Wood Fibre and Timber Industry Master Plan. And to keep our forests safe, we've invested in cutting-edge technologies for early fire detection and monitoring. This year, we're also celebrating 150 years of commercial plantation forestry in South Australia, recognising our state's foundational role and ongoing leadership in this vital industry.

SUPPORTING SPONSORS



Forestry Corporation of NSW sustainably grows and manages the ultimate renewable resource – our State forests. NSW State forests both contribute to and complement NSW's conservation estate, delivering a range of benefits to communities, from access for tourism and primary production, protection of cultural heritage, forest health and research, fire protection and production of renewable timber.

We manage around two million hectares of multiple-use public native forests, including coastal native forests, cypress forests and red gum forests, hardwood and softwood timber plantations.

State forests are managed to deliver multiple benefits including environmental conservation, community access and tourism, and renewable timber products. Large areas of State forest are permanently protected and around one per cent is harvested for timber and regrown annually, with an estimated 40 million seedlings replanted or regrown each year.

Our forest management is independently certified to the Australian Standard for Sustainable Forest Management, Responsible Wood, and our operations underpin a vital and vibrant renewable timber industry in regional NSW.



Forest and Wood Products Australia (FWPA) are integral in driving the growth, sustainability, and impact of Australia's forest and wood products industry.

Through collaboration with members, industry, government, and researchers, FWPA strategically invests in research and development, enhances market opportunities, and promotes the environmental, social, and economic benefits of wood.

Our vision is to make wood the material of choice – renewable, versatile, and essential for a sustainable future. With a focus on innovation, collaboration, and measurable outcomes, FWPA empowers the industry to adapt, grow, and thrive, ensuring long-term benefits for people, the economy, and the planet.



Melbourne-based **HVP** is one of Australia's largest private timber plantation companies, and is owned by a combination of Australian and international investors. The 242,000-hectare estate is located across Victoria, extending from Gippsland in the east, the border with South Australia in the west and large holdings in the north-east of the state. About 172,000 hectares of this land is pine and eucalypt plantation. Complementing the plantation area, 47,000 hectares of HVP land is native forest managed for conservation, environmental and cultural values.

Each year, HVP supplies over three million tonnes of timber. HVP's customers in Victoria, South Australia and New South Wales process the timber into a broad range of construction, landscaping and packaging products.

At HVP, our commitment is for sustainable and safe management of our plantations. We strive to balance the needs of our employees, customers, and local communities, all while delivering optimal returns for our investors.



With nearly 120 years of expertise, Raute is a global leader in technologies and services for the engineered wood products industry. We specialise in veneer, plywood, and laminated veneer lumber (LVL) production solutions, helping forest owners and sawmills unlock new value from wood resources.

Our technologies integrate seamlessly with sawmill-related engineered wood product operations, creating opportunities to diversify production and capture additional value from sustainably harvested timber. Raute's commitment to innovations ensures efficient, high-quality, and tailored solutions that meet today's market needs.

We believe that cooperation across the entire value chain—from forest to finished product—is essential. By working closely with forest owners, sawmills, and manufacturers, Raute helps drive the development and commercialization of wood products that meet the growing demand for sustainable, low-carbon construction materials.

THANK YOU TO OUR SPONSORS AND EXHIBITORS

CONFERENCE DINNER SPONSOR



At Sustainable Timber Tasmania, we manage over 800,000 hectares of public production forests. Our role goes beyond timber harvesting – we are responsible for maintaining the health and resilience of our forests, managing them for wood production, conservation, recreation, and community access.

We regenerate what we harvest and protect what we manage, supporting Tasmania's environment, industry, and communities.

Our forests provide renewable timber products while also delivering important environmental services such as carbon storage and habitat for biodiversity.

Our people are passionate about safety, sustainability, and continuous improvement, and they care deeply for the forests in their stewardship.

As a land manager, we provide access to forests for a range of uses, from recreational activities and tourism to leases and community events. We actively engage with local communities, stakeholders, and industry to build trust, share knowledge, and foster meaningful connections.

Sustainability is at the core of everything we do. It guides our decisions today and shapes the legacy we leave for tomorrow. Through responsible, science-led forest management, we are committed to delivering long-term value for Tasmania with forests that remain productive, healthy, and respected for generations to come.

WELCOME RECEPTION SPONSOR



LOGR: Seamlessly Connecting the Forest and Wood-Fibre Supply Chain

LOGR is the modern SaaS platform designed to eliminate silos across the forestry industry. We bring landowners, foresters, contractors, producers, and buyers into a single, collaborative environment, enabling real-time visibility and swift joint decision-making. At its core, LOGR digitises and validates every timber movement, automatically generating multiparty records that secure Chain-of-Custody (CoC) and Chain-of-Responsibility (CoR) data. By facilitating efficient collaboration and ensuring end-to-end transparency, LOGR supports operational integrity and is positioned as a global leader in forward-tracking forestry supply chain management.

DIVERSITY BREAKFAST SPONSOR



Australian Government
Australian Centre for
International Agricultural Research

ACIAR supports Australia's national interests by investing in collaborative research and capacity-building partnerships to improve the livelihoods and resilience of smallholder farming, fishing and forestry communities in the Indo-Pacific. To achieve this, ACIAR partners bilaterally and multilaterally with governments and institutions to grow food more efficiently, increase food system resilience, improve human nutrition, empower women and girls, reduce poverty, and manage natural resources sustainably to adapt to increasing climate variability. These partnerships optimise economic, social and environmental benefits for partner countries, and contribute to the development of our international and Australian partner institutions' research, policy and leadership capacities.

SACHEL SPONSOR



From humble beginnings, 23 years ago, **Technical Forest Services (TFS)** has grown to become a trusted independent service provider in many aspects of Silviculture and Technical forestry fields.

TFS has an enviable mix of practical forestry experience, and staff with tertiary backgrounds in forestry, science, geology, and environmental management.

We are an agile and productive team where our operations and personnel now extend across QLD, NSW, VIC, TAS, SA and WA.

TFS are able to tailor services to meet your needs at all levels of involvement, from full project design and oversight through to the provision of personnel.

SESSION SPONSORS



Australian Forest and Wood Innovations

Australia's \$160 million+ **National Research and Innovation Institute for Forest and Wood Products**, **AFWI** is transforming the sector by uniting industry, research and government. Our 2025–2030 Strategic Plan targets healthier forests, maximised wood fibre through advanced manufacturing and bioproducts, climate solutions positioning timber in the net zero transition, and engineered wood for modern housing. We deliver through national open calls, three research centres with 20+ partners, strategic partnerships, industry forums, and R&D talent development. Supported by the Commonwealth and hosted by the University of Tasmania, AFWI connects Australia with global best practice. Learn more: www.afwi.au.



Centre for Climate-Smart Forestry

AFWI Centre for Climate-Smart Forestry (CCSF)

The Centre for Climate-Smart Forestry is a national research centre hosted by the University of Melbourne under the Australian Forest and Wood Innovation program.

Our mission is helping Australia's forest sector adapt to climate change and seize low-carbon opportunities through collaborative, impact-driven research.

Our research program spans four key themes:

- Integrated landscape management
- Carbon for green industry
- Climate-adaptive silviculture
- Forest monitoring innovations

Cross-cutting themes – Indigenous Australians and Economics, Policy & Society – ensure cultural knowledge and socio-economic policy perspectives are woven throughout our research.

Our priority is building strong partnerships to co-design research that delivers enduring benefit for Australia's forests, communities, and industries.



Eddcon Tree Services Pty Ltd is a seed collection business with a long history of assisting the conservation of Victoria's threatened iconic Ash native forests.

Today, Eddcon is one of the State's major providers of Ash eucalypt seed and other species, collected by our professional climbers under contract.

Eddcon is proposing to co-fund and manage a new, private Ash seed bank. The new facility would be fully integrated with the Victorian Government's own seed bank, to assist their efforts, and be funded by corporate and private donors. All seed will be provided 'gratis' for recovering Ash forests following future bushfires.



ForestrySA is South Australia's trusted commercial and community forest manager since 1875, managing more than 10,000 hectares of Radiata Pine plantations and 16,000 hectares of Native Forest Reserves. With forests at Kuitpo, Mount Crawford, and Second Valley, ForestrySA welcomes thousands of visitors annually for recreation and community events. Celebrating 150 years of forestry in South Australia, we remain dedicated to environmental stewardship and community engagement, ensuring that vibrant, accessible forests continue to thrive on the doorstep of the state's capital.



Forest and Wood Products Australia (FWPA) are integral in driving the growth, sustainability, and impact of Australia's forest and wood products industry.

Through collaboration with members, industry, government, and researchers, FWPA strategically invests in research and development, enhances market opportunities, and promotes the environmental, social, and economic benefits of wood. Our vision is to make wood the material of choice - renewable, versatile, and essential for a sustainable future. With a focus on innovation, collaboration, and measurable outcomes, FWPA empowers the industry to adapt, grow, and thrive, ensuring long-term benefits for people, the economy, and the planet.

THANK YOU TO OUR SPONSORS AND EXHIBITORS

SESSION SPONSORS (CONTINUED)



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Indufor is a global specialist forest sector consulting group. For more than 45 years, Indufor has provided independent, robust advice to a broad range of public and private sector clients worldwide.

Based on deep sectoral expertise and analytical rigour, our advice covers best practice forest management, policy, sectoral strategy, forest valuations and due diligence, climate change and sustainability frameworks to address environmental, social and governance (ESG) considerations.

Indufor has offices in Melbourne, Auckland, Helsinki, Washington DC and Shanghai. For further information, please visit us at www.induforgroup.com.



Founded in 1980, **Midway** is one of Australia's largest high quality woodfibre processors and exporters with operations in Victoria, Queensland,

Tasmania and the Northern Territory. Midway also manages almost 50,000 ha of plantations in Victoria, Northern Territory and Tasmania for large investors and small landholders. The Midway Group's values drive our culture to be a trusted corporate citizen that is respected and valued in the communities in which we operate.

- Safety and the Environment
- Honesty, Integrity and Respect
- Performance
- Sustainability and Community

EXHIBITORS



ArborCarbon is an Australian environmental consultancy combining expertise in forest pathology, remote sensing, surveillance, and strategy. We have developed a range of innovative technologies including the aircraft-mounted ArborCamTM and artificial intelligence to provide rapid and cost effective forest services including inventories, pest and disease monitoring, carbon and biodiversity. Clients span the government and private sectors across Australia, NZ and the UK.



First Super is the super fund that is large enough to perform, and small enough to care. More than 78,000 members trust us to manage \$5.2 billion of their hard-earned savings. We're an industry super fund, which means we're run to benefit our members. We welcome all Australians regardless of their occupation or location, but we have particularly strong links to the timber industry.



Macspred Syngenta are the specialists in forestry, industrial and aquatic weed management. Specialising in these industries for 40 years, researching and developing products specifically for these situations. Proudly Australian grown with office and manufacturing plant continuing in Victoria. Syngenta acquired Macspred in 2023 with the ambition of aligning the strength of both businesses to bring new solutions to the vegetation management industry. For more information speak with your local Macspred Territory Sales Manager or visit www.syngentamacspred.com.au

METAMORF

Metamorf Engineering (incorporating SDA Engineering) is an Industry leading technology and engineering Company, based in Adelaide, that has developed unique patented technologies and products that transform biomass into biochar, heat and related carbon products, that have a significant, positive impact on the environment. Our team of engineers and technical staff work at the cutting edge of development and application of climate positive carbon technologies.



Pano AI is the leader in early bushfire detection and intelligence, working to strengthen resilience across Australia. Our mission is to equip those on the frontlines—land managers, emergency services, utilities, and renewable energy developers—with the best tools to detect and respond to fire threats faster and more safely. The Pano Rapid Detect system integrates advanced cameras, AI, and a real-time software platform, optimised for remote, low-bandwidth environments. Trusted by forward-thinking organisations across the country, Pano AI is proud to partner with industry leaders to improve situational awareness, reduce risk, and protect lives, critical infrastructure and the environment



PSC Insurance Brokers' Plantation Protect helps growers navigate a specialised, capacity-driven insurance market, where cover can tighten as trees increase in value over time. Developed over nearly two years, the product provides tailored protection for fire, windstorm, lightning, explosion and aircraft, with premiums from \$5,000 plus charges. It is underwritten in London by a leading forestry underwriter with 25+ years' experience, and we can also consider cover for plantations with registered carbon credits. As Forestry Australia's appointed partner for plantation insurance, PSC is here to assist members. Visit our stand or contact us to discuss options aligned to your plantation operations.



For over 30 years Remsoft has delivered intelligent planning solutions for forestry, beginning with the industry gold-standard Woodstock optimisation studio. Today Remsoft offers cloud-native planning, operations and analytics across the full forest value chain. Remsoft helps organisations modernise planning with spatial, connected data intelligence

that improves decisions and performance across strategic and tactical planning, forest operations, logistics and mill operations. Remsoft blends scientific rigour with practical tools to turn complex resource data into actionable plans that boost efficiency, transparency and decision confidence.



Responsible Wood is a not-for-profit accredited standards development organisation, licenced by Standards Australia to develop standards. The Responsible Wood certification scheme demonstrates that products produced under those standards are sourced from sustainably managed forests. Responsible Wood is endorsed by, and mutually recognised by, the Programme for the Endorsement of Forest Certification (PEFC), the world's largest forest certification scheme. The Responsible Wood certification scheme, through the new revised joint Australia and New Zealand AS/NZ 4708:2021 Sustainable Forest Management standard covers about 20 million hectares of forest in Australia, making Responsible Wood Australia's largest forest certification scheme.



RIEGL delivers cutting-edge technology in airborne, unmanned, mobile and terrestrial laser scanning solutions. From initial purchase to system integration, as well as training and support, RIEGL stands out as a leader in the industry. The key factors to RIEGL's enduring success are providing cutting-edge innovative solutions and reliable technical support to our valued customers.



Trimble Forestry is the dedicated forestry division of the global technology company Trimble Inc. They provide world-leading software and solutions to manage the entire forest supply chain, operating under their CONNECTED FOREST® concept.

Their comprehensive portfolio includes spatially-enabled management systems like LRM, scalable logistics solutions, harvesting software, and log accounting tools designed to help commercial, government, and non-traditional organizations streamline workflows and optimise operations. Trimble Forestry's solutions enable real-time data collection, communication, and analysis across land management, harvesting, wood procurement, and transportation, ultimately driving productivity and sustainable decision-making globally.



Growing trees
for people, homes
& a sustainable future.



www.hvp.com.au

1. **Quantifying woody biomass residues from sandalwood (*Santalum album* L.) plantations in northern Australia**
Duc Bui, Dr Sam Van Holsbeeck, Dr Trinh Huynh
Forest Research Institute, University of the Sunshine Coast (UniSC), Australia, Sunshine coast, Australia
2. **Biodiversity in a silvopastoral system with *Corymbia* hybrid: Preliminary results**
MSc Tien Chinh Nguyen^{1,2,3}, Associate Professor David Lee⁴, Dr Helen Nahrung⁴, Dr Teresa Eyre⁵, Dr Nahuel Pachas^{4,6}
¹Forest Research Institute, University of the Sunshine Coast, Sippy Downs, Australia. ²School of Science, Technology, and Engineering, University of the Sunshine Coast, Sippy Downs, Australia. ³School of Agriculture and Forestry, Tay Bac University, Son La, Vietnam. ⁴Forest Research Institute, University of the Sunshine Coast, Sippy Downs, Australia. ⁵Department of Environment, Science and Innovation, Brisbane, Australia. ⁶Department of Primary Industries, Nambour, Australia
3. **Exploring Tree Methane Dynamics and Bark Microbial Biodiversity of Australian Upland Rainforests**
Johannes Dittmann¹, Dr Luke Jeffrey¹, Dr Scott Johnston¹, Dr Pok Man Leung², Dr Damien Maher¹
¹Faculty of Science and Engineering, Southern Cross University, Lismore, Australia. ²Department of Microbiology, Biomedicine Discovery Institute, Monash University, Melbourne, Australia
4. **Systems Thinking in Forestry: Evaluating In-Cab Technologies Through Incident Analysis**
Professor Anjum Naweed¹, Ms Amanda Bell², Dr Jim O'Hehir³, Dr Madeline Sprajcer¹, Professor Jillian Dorrian⁴, Dr Braden Jenkin⁵, Dr Sidney Irwin¹
¹Central Queensland University, Wayville, Australia. ²Australian Forest Products Association, Melbourne, Australia. ³University of South Australia, Mount Gambier, Australia. ⁴University of South Australia, Adelaide, Australia. ⁵Sylva Systems, Mount Gambier, Australia
5. **Recovering our iconic Ash forests after fire – 20 years of systems development in Victoria**
Owen Bassett¹, Dr Thomas Fairman²
¹Forest Solutions Pty Ltd, Benalla, Australia. ²FLARE Wildlife Research Group, University of Melbourne, Parkville, Australia
6. **Understanding Industry Perspective on Timber Moisture Management in Storage.**
Oluyimide Akinlawonu, Professor Rameez Rameezdeen
University of South Australia, Adelaide, Australia
7. **Mangroves Biomass from Space: A case study using multiple datasets in South Australia: RADAR, LiDAR and optical data.**
Bassam Waheed, Associate Professor David Bruce
Flinders University, Adelaide, Australia
8. **New Insights into Eucalyptus Reproductive Phenology and the Definition of Reproductive Structures for Phenological Data Collection: An Ontological Approach**
Ms Claudia-Helena Giraldo-Escobar¹, Dr Marie Keatley^{2,3}, Associate Professor Sabine Kasel¹, Dr Julian Di Stefano³, Professor Craig Nitschke¹
¹The University of Melbourne, Burnley, Australia. ²RMIT University, Melbourne, Australia. ³The University of Melbourne, Creswick, Australia
9. **Myco-mercenaries: investigating an entomopathogen based approach to manage *Ips grandicollis* (Coleoptera: Curculionidae: Scolytinae) in Queensland's pine plantations**
Praneet Goundar¹, Diana Leemon², Steven Rice², Madaline Healey¹, Simon Lawson¹, R. Andrew Hayes¹, Michael Ramsden³
¹Forest Research Institute, University of the Sunshine Coast, Ecosciences Precinct, Dutton Park, Brisbane, Australia. ²Queensland Department of Primary Industries, Ecosciences Precinct, Dutton Park, Brisbane, Australia. ³HQPlantations, Red Road, Beerburum, Australia
10. **Efficient weed management strategies in forestry plantations supported by automated weed detection and precision control**
Mr Kamal Raj Aryal^{1,2}, Professor Mark Brown¹, Dr Sam Van Holsbeeck¹, Dr Justin Nairn³, Professor Anthony Finn⁴
¹University of the Sunshine Coast, Sippydowns, Australia. ²Forest Research and Training Centre, Kathmandu, Nepal. ³Massey University, Auckland, New Zealand. ⁴University of South Australia, Adelaide, Australia
11. **Effect of Knot on the Bending and Compression Strength of Australian Radiata Pine solid Sawn timber (SST)**
Abbas Abdulalim Abbara, Professor Raufdeen Rameezdeen, Yingwei Liang
University of South Australia, Adelaide, Australia
12. **Bending creep performance of cross-laminated timber from Tasmanian hardwood plantations**
Dr Yingwei Liang¹, Dr Assaad Taoum², Dr Nathan Kotlarewski³, Professor Andrew Chan², Professor Rameez Rameezdeen¹
¹UniSA STEM, University of South Australia, Mawson Lakes, Australia. ²School of Engineering, College of Sciences and Engineering, University of Tasmania, Hobart, Australia. ³School of Architecture and Design, College of Sciences and Engineering, University of Tasmania, Launceston, Australia
13. **Linking sustainable wood supply and forest and landscape restoration in the Asia Pacific region**
Professor Rodney Keenan¹, Professor Peter Kanowski², Dr Depi Susilawati²
¹University of Melbourne, Melbourne, Australia. ²Australian National University, Canberra, Australia
14. **Forest Carbon Lite Simulator: Decision Support for Adaptive Forest Management Under Climate Change**
Pia Angelike Healthy Forests Foundation



The Australian Government is committed to growing a stronger Forest Industry for a Sustainable Future

The Australian Government is proud to sponsor the Forestry Australia Conference 2025

The Australian Government's **A Better Future for our Regions** and **A Future Grown in Australia** policies affirm the government's commitment to supporting and strengthening Australia's forest industries. They aim to ensure the sector remains sustainable, innovative, and resilient into the future.

The government is delivering a suite of initiatives totaling almost \$300 million to support Australia's forest industries. Some of the initiatives are:

- **Support Plantation Establishment program** is boosting domestic timber supply, contributing to Australia's carbon emission reduction targets, and supporting regional communities
- Driving transformative research, development and innovation through **Australian Forest and Wood Innovations**
- Supporting the delivery of skills and training to meet the requirements of Australia's forestry industries through the **Forestry Workforce Training Program**
- Supporting the medium to long-term sustainability of wood processors through the **Accelerate Adoption of Wood Processing Innovation Program**
- Combating illegally logged products from entering the Australian market supported by recent illegal logging legislative reforms that came into effect on 3 March 2025.

The government is also committed to working with stakeholders to review the 1992 **National Forest Policy Statement**.

The Australian Government continues to support **ABARES independent research** in forest economics and sciences, which provides trusted advice to enable government, industry and the community leaders to make informed decisions on the key issues shaping Australia's forestry sector.

SPEAKERS AND ABSTRACTS
MONDAY 20 OCTOBER

DAY ONE



SPEAKERS AND ABSTRACTS

Please note abstracts are listed in program order and are correct at time of printing.

Conference Workshop #1

Pathways Forward: Strengthening Professional Development in Forestry

Mark Brown¹, Tracey Gale²

¹University of the Sunshine Coast. ²Forestry Australia

Abstract: Australia's forestry profession is at a critical juncture. Following decades of contraction in tertiary and vocational education pathways, we are witnessing a growing skills gap, a shrinking talent pipeline, and the erosion of clear professional development frameworks. In response, Forestry Australia has established a Professional Development Committee to lead a national effort to rebuild, reimagine and future-proof professional learning pathways for foresters.

This session will introduce the Committee's early work and invite all members of the profession—from students and early-career professionals to experienced practitioners and educators—to contribute to the design of a new, nationally supported framework for professional development. The session will include short provocations on current challenges, emerging opportunities (e.g., AI, carbon markets, forest fire science), and successful models from allied fields. These will be followed by interactive discussions to add participants' ideas to the committee's working ideas.

Intended outcomes:

- Raise awareness of the Committee's role and objectives.
- Gather member feedback on the priority skills, knowledge areas, and learning formats for the next generation of CPD offerings.
- Strengthen engagement with members, educational partners, and employers to co-develop relevant, high-impact professional learning pathways.
- Build a shared vision for maintaining integrity and excellence in forestry as a modern, climate-critical profession.

This session will help ensure that Forestry Australia's professional development strategy is shaped by the needs and aspirations of its members and aligned with the rapidly evolving demands of our sector.

Presenters: **Mark Brown** has over 25 years' experience in forestry and biomass supply applied research and innovation. His work focusses on research implementation across forest product, bioproduct and bioenergy supply chains, integrating and adapting traditional product supply with emerging bioenergy, bioproducts and circular economy opportunities.

Mark is an internationally recognised RD&I leader in partnership establishment and development with diverse industry, government, and academic partners and has leadership roles in IEA Bioenergy in the Executive Core Group, and is currently the Chair and Biomass Supply Task Leader. Mark also provides leadership, governance, and management as an independent non-executive director with the Australian Forest Contractors Association, Social Chamber representative on the Standards Development Group for the Australian Forest Stewardship Council Standard, and as board member with the Australian Journal of Forestry.

Tracey Gale is a skilled communicator and experienced Learning and Development Professional having held a wide-range of roles across telecommunications and the energy industry, RTO's, not-for-profits, and the Victorian Public Service. Along with a Degree in Adult Learning and Development, she brings extensive knowledge in leadership training, learning program development, and facilitation. Passions of Tracey's include life coaching, leadership, mentoring, and she gets a real kick out of seeing other people achieve their goals. Whenever she can, you will find her off exploring and traveling with her family.

Conference Workshop #2

Enhancing professional expertise and capacity for forest management in the Pacific - the development of the Pacific Network of Forestry Professionals

Graham Wilkinson¹, Jalesi Mateboto²

¹Fellow, Forestry Australia, Hobart, Australia.

²Pacific Network of Forestry Professionals

Abstract: Delegates from Pacific Island Countries will identify the key challenges for the management of their forests and tree resources and they will highlight the active and diverse roles that forestry professionals will play into the future to mitigate the impacts of climate change and forest degradation, and improve livelihoods for their communities.

Delegates will provide an update on progress with the development of associations of forestry professionals within their countries and they will identify the priorities for enhancing the professional expertise and capacity of their forestry professionals.

The session will explore the manner in which the Pacific Network of Forestry Professionals can connect professional associations and forestry professionals within Pacific Island Countries and Australia, to facilitate the sharing of information and resources, including programs for training, professional development and support.

Presenters: **Graham Wilkinson** has worked in forest management, research and regulation within Australia and the Asia-Pacific region. He is a Fellow of Forestry Australia and a former national director, chair of the Registered Forestry Professionals Committee and chair of the Foresters without Borders Committee.

Jalesi Mateboto has worked extensively as a senior forestry advisor throughout the Pacific. He was the leader of the Sustainable Forests and Landscapes Program within the Land Resources Division of the Pacific Community (SPC). He is now a Senior Technical Advisor with the GIZ Pacific program on Human Mobility in the context of climate change.

Graham and Jalesi are currently working with Forestry Australia and Pacific nations to develop the Pacific Network of Forestry Professionals.

PLENARY SESSION #1

Redefining Forest Success: Multiple Returns, One Landscape



Radha Kuppalli,
*Board Director, Greening
Australia and Accounting for
Nature*

Abstract: Australia's forests and landscapes hold enormous untapped potential to restore nature and secure the country's future. In the 1990s, forestry optimised for a single output—

timber. Today, opportunities span timber, climate mitigation, biodiversity and nature repair, water, and cultural values. This keynote explores how forestry is evolving from single-product operations to systems integrating production and nature restoration, delivering multiple outcomes across the same hectares.

Forestry leaders must embrace five essential transformations: scaling integrated production and restoration models; engaging communities and government to secure social license for unprecedented reforestation; linking carbon and biodiversity markets to achieve net zero and nature-positive outcomes; adopting new economic models to value natural capital; and positioning Australia as a global investment destination in the sustainable land use transition.

Through practical examples and case studies, this keynote demonstrates how trade-offs can be reframed as portfolio opportunities, where ecological, social, and financial returns are mutually reinforcing. The keynote calls on forestry leaders to rethink success: the future is not timber or nature—it is timber with nature, integrated for value, resilience, and long-term impact.

Presenter: **Radha Kuppalli's** purpose is to create economic value for nature—in service of a resilient and prosperous future for people and planet. She has spent 25 years executing investment solutions to address climate change, nature restoration, and sustainable land management.

Radha is a Board Director and Advisor globally to growth businesses, fund managers, and NGOs focused on accelerating the transition to net zero and nature positive. She is on the boards of both Greening Australia and Accounting for Nature and serves as a member of the Australian Government's Nature Finance Council. She recently also served as a board director and executive of Re-Vi, an Australian climate tech company developing institutional scale biochar projects.

Radha previously helped grow New Forests into one of the world's leading sustainable forestry and natural capital investment firms. Her achievements include delivering a multi-billion dollar capital base from blue-chip institutional clients, embedding a deep sustainability culture, and driving innovative investments in carbon, biodiversity, and blended finance across Australia, New Zealand, the United States, and Southeast Asia.

While the transformation ahead is tough and the stakes for people and planet are high, Radha draws inspiration every day from the beauty and magic of nature to keep collaborating and working on solutions.

BREAKOUT #1 – Future prospects for Australian forestry

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Why is forestry in Australia so difficult?

Rob de Fegeley AM, AR&SM de Fegely Partnership

Abstract: Australia is the 6th most forested country in the world according to the United Nations Food and Agriculture Organization (FAO) and yet we are not self-sufficient in wood products. We have the forests, land, skills and wealth to be much more than self-sufficient perhaps even a major exporter like our agricultural industry. So why aren't we?

Everyone loves forests and wood products which we use every day, and it is renewable with the bonus of our forests sequestering carbon and our wood products storing carbon.

What has made forestry in Australia so difficult and why do we import nearly \$7 billion of wood products and accept an annual trade deficit of over \$4 billion?

SPEAKERS AND ABSTRACTS

Why are wood and forests not more prominent in the solution to fight against climate change?

The answer is complex and lies partly in our history and our industry structure, politics, and emotion. Unfortunately, the problem it is not science. This paper will reflect on the evolution of Australian forestry and reflect on past policy mistakes and successes that have contributed to our current challenges of a declining plantation estate and falling harvests from our natural forests. There can be a much brighter future, but it will require change and some political will. However, if successful we can create a foundation for a new era where the natural values and multiple uses of our forests are recognised for their contributions to both society and our environment.

Presenter: Rob de Fégely AM has worked in Australian forestry for over 40 years starting his career in softwood plantations and natural forests in southern New South Wales, before becoming a consultant in the early 1990's working on major forest industry reviews that led to the National Forest Policy Statement, Regional Forest Agreements and Plantations 2020. He was Chair of the Commonwealth Forest Industry Advisory Council from 2015 to 2023 and has served as a Non Executive Director of VicForests and is currently a Non-Executive Director of Forestry Corporation of NSW and Chair of the Board of Sustainable Timber Tasmania.

The role of forestry in Australia's bioeconomy: an assessment of the opportunities and challenges with an international comparison

Dr Leanda Garvie, Professor David Lee,
University of the Sunshine Coast

Abstract: The global community faces challenges associated with pollution, waste generation, biodiversity loss, and landscape alteration and degradation, as well as a warming planet and climate change caused by greenhouse gas emissions. Decoupling economic growth and development from natural resource consumption is gaining support as a strategy to address these global challenges. This is the main principle of a bio-based economy or bioeconomy, the renewable component of a circular economy. Forests have the potential to contribute renewable, biological resources including fibre and energy, thereby reducing our dependency on non-renewable sources of carbon like fossil fuels. Forest-based bioenergy, timber for construction, bio-based packaging and pulp and paper products can replace fossil-fuel based products like coal, gas, and plastics, thereby reducing emissions and helping to mitigate



Specialty tree climbers and seed collectors



Welcome to Forestry Australia's 2025 Conference.

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At Eddcon, we are committed to assisting the forest management community achieve its objective of restoring Victoria's forests and landscapes.

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climate change. This move from fossil-fuel-based resources to renewable sources of carbon is especially important for countries like Australia which have large, dispersed forest resources alongside a well-established fossil-fuel based sector. This study focuses on summarising Australia's progress towards national and sub-national bioeconomy policy development, and to better understand the role that forestry might play in a more sustainable future. As well, a comparison is made to other well-established forestry markets around the world, such as exists in the European Union and North America, where circular economy and bioeconomy strategies are better established.

Hence, this study aims to contribute knowledge about the nexus between forest-based industries and bioeconomy policies, suggesting future research areas and policy implications for Australia.

Presenter: Dr Leanda Garvie is an accounting academic and interdisciplinary researcher at the University of the Sunshine Coast. Her PhD with UniSC's Forest Research Institute investigated the potential for forest residues to contribute to Australia's emerging bioeconomy. Her research spans sustainability reporting, circular economy strategies to manage waste, and forestry resources to mitigate carbon emissions, generate innovative products, and deliver socio-economic benefits. Dr Garvie is interested in the conversation around forest policy and economics and hopes to contribute new knowledge and sustainable solutions to challenging problems facing Australia and the global community.

Australian forest policy threatens global action to conserve biodiversity and mitigate climate risk

**Dr Tyron Venn¹, Ms Zuhui Huang¹,
Ms Jaanvi Lachhwani²**

¹The University of Queensland, Brisbane, Australia.

²University of Queensland, Brisbane, Australia

Abstract: Well-intentioned regional policy interventions that aim to improve carbon sequestration and biodiversity conservation in timber production forests generally decrease harvest volumes by reducing the intensity of production or prohibiting harvesting altogether. However, such policy interventions are highly vulnerable to leakage because of globalised commodity markets where products are highly substitutable, demand is relatively inelastic with respect to price (particularly in developed countries), and global markets are large relative to the size of individual policy interventions. Internationally, there are surprisingly few published ex-post evaluations of timber leakage. Australia has three decades of empirical evidence associated with forest policy interventions that have incrementally reduced harvest volumes (e.g. 73 % decline in domestic hardwood sawlog production between 1996 and 2022). This paper analyses Australian timber production and trade data to determine the extent

to which domestic forest policy drives international leakage that threatens global action to conserve biodiversity and mitigate climate risk.

Presenter: Dr Tyron Venn is a natural resource economist at the University of Queensland with 25 years of research experience in natural resource management, policy and economics. He is an ANU BSc Forestry graduate from 1997.

Working with trees and wood in a climate emergency

Paul Haar, *Principal Honorary Fellow at University of Melbourne School of Architecture and Building, Australia*

Abstract: Building industry accounts for over 20% of Australia's total greenhouse gas emissions. To reasonably preserve the natural and human systems we rely on, we have 25 years at best to reach net-zero emissions and be well underway with deep atmospheric carbon drawdown. Healthy forests will play a crucial role in meeting this difficult goal.

Core challenges for foresters, timber processors and building professionals will be to identify, implement and advocate for ways of working with trees and wood that tell an undisputably good story in this emergency. Key elements for that will include:

- Silviculture that's centred on making natural and plantation forests more carbon rich, biologically active and resilient to wildfire, drought and heat-related decline.
- Wood processing that sees as much as possible of the carbon removed from a forest in its management and harvest converted into long-lived building product.
- Architecture and engineering that draw on forest and climate friendly timber products for durable, flexible, lean, low-carbon construction detailed also for disassembly and reuse.

Nimble localised enterprise with trees and wood can see our disciplines working closely together with a focus on forest health and climate action. This can drive new business investment and shift timber markets across Australia.

Presenter: Through 45 years in practice, architect **Paul Haar** has developed a keen interest and expertise in trees, wood and architecture. Towards addressing our climate emergency and nature crisis, he regards timber as amongst the best or the worst materials to use in construction, depending very much on where and how it's sourced. This has motivated him to develop timber product guides for the Mullum Creek eco-housing estate, to establish CERES Fair Wood as a timber aggregation network for the growing green demographic of wood users, and to broadly share knowledge amongst building professionals around environmentally responsible timber selection and design.

A new value-proposition requires a new wood-production paradigm

Benjamin Boxshall, *Wood4Good*

Abstract: To ensure forestry makes a big and lasting contribution to our future security, we need to cultivate a new paradigm that creates a value proposition capable of activating a new alignment of stakeholders that includes investors, communities and conservationists.

Society needs multi-functional solutions that combine mitigation and adaptation and that address climate and nature challenges simultaneously. Yes, wood supply and associated technology are critical to creating a clean, safe and sustainable economy, but we should be developing processes of primary production that also help build resilience and demonstrably benefit a broader suite of stakeholders.

We can choose a path that reduces opportunity costs and risks and that extracts more value from wood production systems by generating The Ultimate Renewable™ in ways that help restore the function and resilience of ecosystems and better protect water catchments and communities from future impacts. Wood production can become a tool for restoration and repair. It can help de-risk and finance rational changes in land use designed to regenerate degraded colonial landscapes.

Plantation forestry is now considered part of a broader Natural Capital asset-class, which, along with emerging technologies, creates new opportunities - for integration, diversification and expansion. Now is the right time to invest in the development of a new paradigm that delivers demonstrably for nature and offers more highly integrated, diverse and versatile systems of wood-production.

So, what are the key methodologies that might define this new paradigm for planted forests?

By cultivating a holistic, solutions-focused perspective, I believe we can win the backing of new stakeholders to help strengthen our social license, scale finance for new, working forests and bring the benefits of 'regenerative' forestry to new landscapes and communities.

Presenter: **Ben Boxshall** is a forest scientist, silviculturist and entrepreneur with a passion for systems that work for people and nature. He has extensive experience designing, creating and managing enterprises and assets that successfully integrate woody native plants and trees into agroecosystems, catchments and communities. Ben is the Managing Director of wood4good and has been pioneering regenerative silvicultural practices in Australia for 30 years.

BREAKOUT #2 – Social aspects of forest restoration

Restoration to the rescue in Canada's Western Forests - old and new strategies

Margaret Symon, *Canadian Institute of Forestry*

Abstract: Just as Australia and numerous other countries around the world are grappling with the causative agents of, and vast reductions of forest cover, Canada's forests have undergone devastating losses in recent decades because of natural disasters and anthropogenic factors. In British Columbia, on Canada's Pacific coast, mass insect infestations, catastrophic wildfires, invasive species, urban sprawl, and a wide range of weather events (including atmospheric rivers, drought, heat bombs, and prolonged arctic freezes) have damaged and/or destroyed thousands of hectares of forests. The forest landscape is undergoing major changes. Ecosystem health is becoming the standard measurement of ecosystem health. Forest practitioners are needing to develop new strategies for managing healthy forest ecosystems and vibrant, forest-dependent communities. As human activity and climate change impose increasing pressures on our forests, ecological restoration is gaining prominence. The need to restore degraded and damaged ecosystems is being addressed through innovative new strategies and a revival of some ancient practices.

From the microcosm of a regional district coping with threats to its forested parklands, to the much broader scale of the entire province facing losses in its forest cover, this presentation focuses on various abiotic and biotic threats to BC's forests. Mitigation to restore forest ecosystems is developing on integrated fronts, and includes increased wood utilization, more natural regeneration and a wider mix of species, assisted migration tools, and indigenous practices, such as cultural and prescribed burning - all of these aimed at increasing forest resiliency.

Presenter: **Margaret Symon** is a Registered Professional Forester (RPF) and manager of a forestry consulting firm on Vancouver Island, BC. During her career she has helped to promote innovative practices to increase resiliency of forest ecosystems and forest dependent communities. Key areas of practice include wildfire hazard assessment, forest harvesting safety systems, and ecological restoration (including working with First Nations to develop cultural and prescribed burning).

Margaret volunteers with several forestry organisations, and is the Past President of the Canadian Institute of Forestry. She is also a paramedic with BC's Emergency Health Services.

Considering social aspects of forest landscape restoration in Victoria

Dr Rebecca Ford, *The University of Melbourne, Melbourne, Australia. Tribhuvan University, Kathmandu, Nepal*

Abstract: Forest landscape restoration (FLR) has been in focus internationally for over a decade. In parts of Australia, a shift away from commercial timber harvesting in native forests raises questions about what landscape restoration might mean for these forests. FLR as a practice incorporates stakeholder perspectives and local use and management of forests such that it is important to consider these aspects in the Australian context. In this paper, recent research is used to explore aspects of a forest restoration social ecological system: interactions between forests and the public; government- community relationships; and social license for restoration practices. Interactions between forests and the public vary from visual aesthetics and recreation to place attachment and cultural connection, with different implications for forest

management. Government community relationships range from interactive and relational types which incorporate high levels of community participation to authoritative and managerial approaches which are more common in Australian forest management. Findings about social license for forest restoration derived from focus group discussions and a survey show broad public support for practices such as reseedling following bushfires. However, research participants urge governments to incorporate local, Indigenous and scientific knowledge alongside professional expertise during implementation. These findings point toward opportunities for government forest managers to adopt higher levels of stakeholder and community engagement where landscape restoration of native forests is a key aim of management.

Presenter: **Rebecca Ford** is an honorary senior fellow at the University of Melbourne and an adjunct researcher at Tribhuvan University, Nepal. She draws on psychological and interdisciplinary frameworks to study people and their interactions with forests and forest and fire management by observing aspects such as values, human-forest relationships, social license, institutions and decision-making.

SOUTH AUSTRALIA'S HOMEGROWN LEADER IN FOREST MANAGEMENT, CONSERVATION AND ECO-TOURISM SINCE 1875



A retrospective for a new perspective – Facilitating a community journey of Victorian native forestry

Wally Notman, *Gippsland Forest Dialogue, Gippsland, Australia. Department of Energy, Environment & Climate Action, Victoria, Australia*

Abstract: In the wake of the closure of native forest timber harvesting in Victoria, the public narrative around forests has largely moved to issues such as mooted future land tenure changes and prescribed fire. While these particular issues are not new, they are proving to be equally polarising and in the case of the land tenure debate, attracting a huge following.

On social media, views on forest management are freely expressed, with limited moderation or self regulation, and distressingly often, with an unhealthy dose of ignorance. Gross distortion of facts spread quickly and become truth, often generating great angst amongst the participants who perceive that their's, or the forest's values are being compromised. Government appointed taskforces have been added to the realm of the distrusted, alongside government agencies and politicians. Even at the local level, the forest management organisation's ability to cut through this noise is hamstrung by the diminishment of local functions and public contact points and a more centralised control structure.

While public discourse continues in ways that seem destructive to social cohesion, the opportunity exists to chart a different course in contemplating the future of forests and their management.....one grounded in humility, curiosity and community. This presentation proposes different ways of engaging about forests and retrospectively and presently examining our management of them. The forest itself is central, meaning most engagement happens in it. The often neglected practitioners, both retired and present, are involved and valued. It is not led by government, but by locals.

Presenter: **Wally Notman** is a technically trained forester from West Gippsland, with a grounding in the ethic of managing State forests for multiple uses and values. Although currently working in farm forestry, most of Wally's 37 year career has been in the native forests of Gippsland and the Central Highlands. The annual cycle of harvesting and regeneration and early exposure to forest research by way of Victoria's Silviculture Systems Project, led Wally to a lifelong love of silviculture and a desire to explore avenues for continuous practice improvement, as well as sharing other's and his own stories and experiences.

Play in Nature – cultivating connection, fostering healthy people

Daniel Burton, *Educated by Nature*

Abstract: Educated by Nature's mission promotes 'resilience through connection', advocating that engaging with nature nurtures both personal health and environmental stewardship. By encouraging creative, unstructured play in natural settings and advocating for more time to deeply connect with the natural world, we cultivate physical, emotional, and cognitive resilience in individuals, particularly children. This connection fosters a deeper appreciation and responsibility for forest conservation, inspiring lifelong commitment to preserving our forests. This presentation highlights the mental and physical benefits of exploring nature and the impact of children's reduced access to natural environments.

Presenter: **Daniel Burton** is the CEO of Educated by Nature, a world leader in play-based nature education since its establishment in 2014 and has a background as a qualified teacher, consultant, rites of passage facilitator and nature connection mentor.

Daniel's passion for nature and commitment to holistic education shines through his work. He combines current research with practical examples, drawing on a lifetime of learning to provide comprehensive programs and transformative experiences for adults and children. Through Educated by Nature, Daniel continues to advocate for the importance of play and outdoor learning, empowering individuals to explore, discover, and thrive in nature's classroom.

Training in Tasmania's co-regulatory forest practices system

Christine Grove, Laurel Trebilco, *Forest Practices Authority*

Abstract: The Tasmanian forest practices system turned 40 years old this year. Established by the Tasmanian Forest Practices Act 1985, the system is based on adaptive management and continual improvement. We will focus on one objective listed in the Act – an emphasis on consultation and education.

The Forest Practices Authority (FPA) administers the system, in which powers are delegated to trained Forest Practices Officers (FPOs) to authorise forest practices plans and other forest practices matters. It is critical in this co-regulatory system that FPOs have the skills and tools to carry out their roles to the standards required by the FPA. Training plays an important role in this, with some courses being a requirement to fulfill specific roles in the system.

The FPA has delivered face-to-face training courses since the first FPOs were trained and appointed in 1987. These courses have a reputation for effectively meeting the training needs of people working within the forest practices system and other related sectors.

Forestry companies operating in Tasmania indicated over a decade ago that their preferred training model for FPA training was cost-effective, Tasmanian-specific courses. In response, the FPA has moved away from nationally accredited VET units, with increasing focus on consulting to identify emerging training needs as the forest practices system evolves.

Consultation takes place through various channels such as a periodic Training Review Working Group. Feedback shows that the FPA's training program is valued by learners and their organisations.

This unique Tasmanian model may have elements applicable to other regions.

Presenters: After a forestry MSc at Oxford University, **Christine Groves** worked in Uganda and Indonesia in forest conservation.

Moving south, Chris worked in Cairns on training and agroforestry. Moving even further south, she has worked with the Forest Practices Authority for more than 20 years and is the Communications and Training Manager.

Laurel Trebilco has worked in science communication and training for over 15 years. Hailing from California where she earned her BSc and MSc, she spent time in Canada adapting to cooler temperatures before moving to Tasmania. She has enjoyed working as FPA's Communications and Training Officer for the past 4 years.

BREAKOUT #3 – Natural capital and carbon in forest restoration

Recognising forestry asset values with Natural Capital Dashboards

Ziggy Gelman, Lachlan Dawson, Mark Eigenraam, IDEEA Group

Abstract: Globally, there is growing recognition that forestry assets provide valuable ecosystem services beyond timber, from species habitat and carbon sequestration to recreation and water regulation. Yet many forestry managers and investors lack the tools to effectively measure and communicate these additional benefits.

Natural Capital dashboards address this gap by integrating environmental data and ecosystem service analysis into an interactive, user-friendly platform.

Using a case study for forestry, we demonstrate how a tailored Natural Capital dashboard recognises the value of forestry assets by showcasing the ecosystem services and biodiversity benefits it provides. We explore how measuring these values highlights the advantages of integrated forestry management and attracts outcome-focused investment.

The dashboard integrates spatially explicit data collected by asset managers with public data sources to quantify and visualise key ecosystem services and biodiversity trends. This approach significantly advances the alignment of environmental and economic data, enabling forestry operations to communicate their positive impact more effectively.

Dynamic maps, charts, and scorecards illustrate the benefits of high-quality forestry assets clearly and compellingly for both stakeholders and the market. The dashboard is replicable, customizable to user needs, and aligned with international natural capital reporting standards, including the United Nations' System of Environmental-Economic Accounting.

Presenter: **Ziggy Gelman** is an experienced economist, passionate about identifying the contribution that ecosystems have to our economy and society. In his role with IDEEA Group, Ziggy provides technical analysis of economic and environmental data and supports organisations to understand and integrate a natural capital approach into their operations.

Ziggy has extensive experience compiling natural capital accounts in Australia, having worked on ecosystem accounts for urban Melbourne, the Great Ocean Road Coast and Parks, Victoria's forests and Victoria's marine and coastal region.

Prior to working at IDEEA Group, Ziggy worked with the Victorian Department of Energy, Environment and Climate Action.

Enterprise level natural capital accounting to connect local agroforestry decision making with local and global imperatives for restoration

Dr Daniel Mendham¹, Dr Anthony O'Grady², Dr Stephen Stewart², Dr Jacqui England³, Dr Suzanne Prober¹, Dr Thomas Baker⁴, Dr Shaun Brooks², Ms Molly Marshall⁵, Dr Martin Moroni⁶, Dr Chris Ware², Dr Aysha Fleming², Dr Stephen Roxburgh¹, Dr Sue Ogilvy⁷

¹CSIRO, Canberra, Australia. ²CSIRO, Sandy Bay, Australia. ³CSIRO, Clayton, Australia. ⁴Sustainable Timber Tasmania, Hobart, Australia. ⁵Private Forests Tasmania, Burnie, Australia. ⁶Department of State Growth, Hobart, Australia. ⁷Integrated Futures, Gundaroo, Australia

Abstract: Forestry and agroforestry will be critical to achieving Australia's global and national targets for biodiversity conservation, net zero, and increasing food and fibre production, while at the same time ensuring that our rural and regional communities benefit from these transitions and thrive on the opportunities that they can bring. Decision-making around trees on farms has typically been based on a limited number of factors – especially environmental

SPEAKERS AND ABSTRACTS

or production benefits. However, the role that trees play in our landscapes is more nuanced, and they can confer a wide range of both public and private benefits that should be factored into decision-making. Through the Perennial Prosperity project we explored the development of novel enterprise-level natural capital accounts to quantify the existing and future ecosystem services that trees on farms can bring, both to the landowner (in terms of animal welfare, crop and pasture production, and forest products), and to the broader public through biodiversity and carbon sequestration. In this presentation we synthesise the outcomes from the Perennial Prosperity project, and demonstrate that the tools developed can be used by both the farmer and the agrifood value chain to transparently value the integration of more trees on farms in a holistic and sustainable way. We also demonstrate that scaling up these tools to landscape level will be critical for connecting on-ground action (tree planting and/or restoration) with achieving global and local imperatives.

Presenter: Daniel Mendham is the leader of the Landscape and Forest Function team, CSIRO Environment. He leads and delivers on projects that aim to solve our national and international challenges associated with achieving targets for restoration, conservation, net zero, food and fibre production and thriving communities, both in Australia and internationally.

Sequestering carbon in regeneration: an “elaborate hoax” or landholders making a difference?

Associate Professor Cris Brack, *Australian National University, Canberra, Australia. FlintPro, Canberra, Australia*

Abstract: The majority of forests and woodlands in Australia are privately managed leasehold or private property. These wooded estates have the potential to make substantial contributions to the nation's carbon sequestration accounts, biodiversity and other natural resource capital. In fact, the 42 million hectares of privately managed land in the Human Induced Regeneration program (HIR) of the Australian Government is one of the world's largest nature-based carbon sequestration projects and generates almost a third of Australia's carbon credits while simultaneously improving the biodiversity and the robustness of rural communities. Recently however, some individuals have publicly questioned the value of the HIR, going as far as labelling it a “scam”. These individuals used a national-scale model of forest cover to support their hypothesis that HIR projects were not responsible for any sequestration and that the “vast majority of HIR projects are selling nothing more than thin air”.

This presentation reviews the use of national-scale models in Australia's forest and woodland management and demonstrates the problems when

these models are inappropriately used to pursue an argument about HIR project failure. Extensive data from ground measurements and other sources will demonstrate the assertions made about the lack of growth in HIR are incorrect. The presentation will also review methods to improve the quantification of substantial areas of regenerating forests.

Presenter: Professor Christopher Brack is an expert in natural resource management, forest measurement, and carbon accounting. With a PhD from UBC and extensive academic and industry experience, he has led key projects in forest inventory and management, urban forestry, and climate change adaptation. As Chief Biometrician at FlintPro and an Honorary Associate Professor at ANU, he develops cutting-edge models for supporting sustainable land use. His contributions to forestry, urban greening, biodiversity conservation, and emissions reduction are widely recognised, supported by numerous awards and over 100 peer-reviewed publications. His expertise informs government and private industry information collection and innovative decision-support system

Residues for climate mitigation: a potential new ACCU methodology

Fabiano Ximenes, *NSW DPIRD*

Abstract: The Australian Government has initiated a new approach for carbon methodology development for the Australian Carbon Credit Units (ACCU) scheme, where proponent-led concepts are considered. Currently there are limited opportunities for the forestry sector to participate. As forests are harvested and the wood processed, large volumes of residues are generated. Though some of the residues are already used for climate beneficial outcomes, there is still great potential to generate carbon abatement from climate smart uses of residues.

In the case of harvest residues, residue management refers primarily to the use of a proportion of harvest residues that would have otherwise been left to burn or decay in the forest i. It is important to retain certain residue fractions (e.g. leaves, bark, hollowed out stem and branch sections) for nutrient retention and biodiversity needs. There may also be opportunities for using wood-processing residues, such as sawdust and offcuts. For example residues may be used to displace fossil fuels used for the transport sector (e.g. aviation fuel). Those options have an advantage of resulting in immediate climate benefits – by directly reducing the amount of fossil fuels used.

Residues may also be used to produce engineered wood products that can displace concrete or bricks in construction and store carbon for a long period of time. Similarly use of residues to produce biochar can lead to very long timeframes of carbon storage.

In this talk the potential for a new ACCU residue use methodology will be discussed, with opportunities and challenges identified.

Presenter: Fabiano Ximenes is a Senior Research Scientist with the Forest Science Unit at the NSW DPIRD, with over 25 years experience in a wide range of forest carbon projects. Fabiano was a lead author for the IPCC Good Practice Guidance on Harvested Wood Products, and he has led many applied, collaborative industry research projects. Fabiano is also a Bioproducts theme lead for the NSW Decarbonisation Hub.

Restoring forests, restoring futures: A case study in hybrid conifer- rainforest reforestation for climate and community resilience

Daryl Killin, *James Cook University*

Abstract: The LRF061 Pilot Project in Queensland's Wet Tropics presents an innovative, multi-functional model for ecological restoration that combines high-density native conifer plantings with biodiverse rainforest revegetation. Delivered under the Queensland Land Restoration Fund, the project has rehabilitated 8.35 hectares of degraded ex-dairy and beef land to deliver carbon, biodiversity, and socio-economic co-benefits.

Native conifer species such as *Agathis robusta* and *Araucaria cunninghamii* provide not only exceptional long-term carbon sequestration but also marketable timber value and potential for agroforestry (e.g. *Araucaria bidwillii* – bunya nut production). These species serve as cyclone-resilient “nurse crops” that facilitate passive rainforest regeneration while supporting landholders with diverse income streams—from timber and food to carbon credits and ecosystem service payments.

The project integrates scientific innovation, including FullCAM scenario modelling and LiDAR biomass mapping, and has demonstrated that native conifer systems significantly outperform conventional models in total carbon sequestration over time. However, existing ERF methodologies under-credit this potential, and licensing barriers—particularly the Retail Australian Financial Services Licence (AFSL) requirement—have obstructed wider adoption.

Despite these challenges, the project delivers strong socio-economic outcomes, including registered carbon leases, regional employment, skill- building, and local procurement. This case study highlights a scalable, landscape restoration model that aligns with Australia's climate, biodiversity, and economic development priorities—and calls for urgent policy reform to support integrated forestry systems that reflect how farmers actually want to manage their land.

Presenter: Daryl Killin combines over three decades of dedication to forest science and environmental management with a core mission to develop innovative climate change mitigation projects that foster meaningful emissions reductions and carbon sequestration. His work focuses on facilitating action, with a strong preference for the delivery of outcomes.

Daryl's core competencies lie in steering complex projects that utilise technological advancements for efficiency improvements. With a demonstrated track record in overseeing forestry and NRM projects, Daryl's work contributes to reshaping the conversation around deep carbon sequestration methods, pathways, and outcomes, and championing decentralised models of revenue-sharing by cutting out the “middle-man”.

BREAKOUT #4 – Alternative plantation models

Mid-rotation management for small-scale plantations

Jonathan Lambert, *Heartwood Unlimited*

Abstract: Blue gum (*Eucalyptus globulus*) has been grown commercially in southern Australia for decades. Primarily introduced as a species for rapid growth, light colour and high pulp yield, blue gum's sawn timber value has often been questioned.

Heartwood Unlimited has been managing blue gum plantations for sawn timber over the last 25 years. Some of these plantations have recently been harvested and processed by Radial Timber Australia into a range of solid wood appearance products. This includes green products such as board and baton and dry products such as lining boards.

This presentation provides information on growth performance, timber recovery, timber quality, and market response to these new products.

Presenter: Jon Lambert is a forest scientist who has worked across Australia and internationally including receiving a Churchill Fellowship in 2004 to Europe and undertaking extensive development work in Africa.

Jon is presently the Managing Director of Heartwood Unlimited, based in Gippsland Victoria. Heartwood is Victoria's foremost agroforestry company established in 1995, managing 2,500 hectares of hardwood sawlog plantations in combination with livestock, carbon and conservation enterprises.

Jon is also the founder of the charity Beyond Subsistence (2008), co-founder of the Australia and New Zealand Durable Eucs Growers Forum (2018), and a recipient of the Gottstein Fellowship in 2022.

Managing, monitoring and advancing durable eucalyptus species plantations in Victoria

Emma Leslie, *Heartwood Unlimited*

Abstract: Growing durable eucalyptus species for solid wood products has had limited uptake in southern Australia.

Heartwood Unlimited has been managing and advancing durable eucalyptus plantation species in Victoria for over 25 years. Focusing on species such as yellow stringybark (*Eucalyptus muelleriana*), spotted gum (*Corymbia maculata*), southern red mahogany (*E. botryoides*), sugar gum (*E. cladocalyx*) and silvertop ash (*E. sieberi*), Heartwood has collected decades of growth data, undertaken a broad range of silvicultural trials and made numerous operational advancements.

While durable hardwood sawlog markets remain strong, there is a need to improve knowledge, growth, operational efficiencies and reduce risk to encourage greater uptake in this sector.

This paper provides an overview of recent key improvements in the growth and management of durable eucalypts for solid wood production undertaken by Heartwood and partners. This includes advancements through the use of drone technology, growth modelling, thinning and pruning equipment, nutrition models, residue use, and improved genetics.

Presenter: Emma Leslie has been a professional forester for almost 20 years. She has bachelor's degree in science and forestry (Melbourne University) and master's degree in forestry (Australian National University). Emma has travelled extensively, been involved in international development work, and previously been employed working with Caribbean pine in north Queensland. She has been with Heartwood Unlimited (formerly Heartwood Plantations) since 2013 in a range of operational and business management roles with a current focus on plantation development of durable eucalypt timbers. Heartwood is Victoria's foremost agroforestry company that is vested in forestry, farming, carbon and conservation in landscapes that flourish.

Evaluating the growth and commercial viability of different sandalwood species under mixed-species plantation management

Duc Bui, Dr Sam Van Holsbeeck, Dr Trinh Huynh

Forest Research Institute, University of the Sunshine Coast (UniSC), Australia,

Abstract: Sandalwood (*Santalum spp.*) is a hemi-parasitic species that relies on host plants for optimal growth, making it well-suited for mixed-species configurations in both agroforestry systems and large-scale plantations. Unlike conventional timber plantations, which prioritise wood production, sandalwood cultivation focuses on heartwood and essential oil extraction. Consequently, substantial biomass residues from both sandalwood and its host trees remain unutilised post-harvest, representing a missed opportunity for sustainable forest resource management.

This study quantified aboveground biomass residues following the harvest of *Santalum album* L. and three key host species—*Senna siamea*, *Cathormion umbellatum*, and *Dalbergia lanceolaria*—in a 15-year-old northern Australian plantation. Using a destructive sampling approach, we found that *S. album* plantations produced 97.7–137.3 tonnes ha⁻¹ of oven-dry biomass, depending on the specific plating configuration. After retaining 17.8 ± 2.2 tonnes ha⁻¹ of *S. album* stems as the primary commercial yield, 116.4–184.0 m³ ha⁻¹ of woody residues remained.

Findings from this study highlights the potential of sandalwood plantation residues in bioeconomic applications, contributing to waste reduction and biofuels. Further research on strategic host selection and optimised planting configurations could increase the availability of woody residues, supporting circular bioeconomy models. Additionally, mixed-species systems promote sustainable forest management, potentially improving ecological resilience, facilitating the restoration of degraded landscapes, and providing a viable alternative to monoculture plantations. This approach aligns with global sustainability objectives by integrating economic viability with environmental benefits, while reinforcing climate change adaptation and mitigation strategies.

Presenter: Duc Bui is researching the development of sandalwood species (*Santalum spp.*), emphasising their growth, sustainability, and potential applications. His work also focuses on forest restoration, forest enrichment, and management, aiming to enhance ecosystem health and resilience. This includes studying and implementing methods to restore degraded forests, promote biodiversity, and ensure sustainable forest management for long-term ecological and economic benefits.

Testing native species as short-rotation woody crops in NSW

**Dr David Bush¹, Mr Michael McLean²,
Ms Jessica Sheehan², Dr Fabiano Ximenes³**

¹CSIRO, Canberra, Australia, ²NSW Department of Primary Industries and Regional Development, Menangle, Australia, ³NSW Department of Primary Industries and Regional Development, Parramatta, Australia

Abstract: Novel forest-based bioproducts have the potential to provide renewable energy generation, carbon storage, fossil fuel displacement and environmental restoration. Examples include bioenergy, activated charcoal, green steel process, soil carbon supplements (biochar) and environmental credits for biodiversity and sequestration. A project testing native tree feedstocks for diverse sites in NSW has commenced in 2018. Many Australian species are well adapted to challenging sites, including marginal parts of farms and dryland. Planting less-productive areas could diversify income opportunities for landholders, providing an opportunity to generate feedstock in areas where demand is likely to be high.

The objective of the research was to test mallees and proven tall eucalypts and acacias at sites in NSW including Yanco, Orange, Glen Innes, Tamworth, Trangie and Scone. Mallees included *Eucalyptus polybractea* (an industry standard), *E. castrensis*, *E. horistes*, *E. infera*, *E. pumila*, and *E. viridis*. Tall eucalypts include *E. camaldulensis*, *E. cladocalyx*, and *E. benthamii* amongst others. *Acacia* species include *A. saligna* and *A. dealbata*. The establishment and first-rotation biomass growth of these species was assessed using both non-destructive measures, and harvest of above-ground biomass, allowing development of relationships for carbon accumulation and inventory purposes.

We report on best-performing species in terms of survival and biomass accumulation after the first rotation: several promising taxa for varying site types were identified. Relationships between non-destructive measures and harvested aboveground biomass for the species provide important inputs to biometric models and carbon modelling tools such as FullCAM. Coppicing ability and second-cycle growth are being assessed on an ongoing basis.

Presenter: David Bush is Director of the CSIRO Australian Tree Seed Centre. His research interests include conservation, domestication and breeding of Australian tree and shrub species and identifying new products and applications for them.

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

**Professor Craig Nitschke¹, Mr Jon Lambert²,
Mr. Chris McEvoy³, Dr Benjamin Wagner¹,
Dr Tyron Venn⁴, Professor Wendy Wright⁵,
Professor Thomas Baumgartl⁵, Professor
Patrick Baker¹**

¹University of Melbourne, Richmond, Australia. ²Heartwood Unlimited, Yarram, Australia. ³Radial Timber Australia Ltd, Yarram, Australia. ⁴University of Queensland, Brisbane, Australia. ⁵Federation University, Churchill, Australia

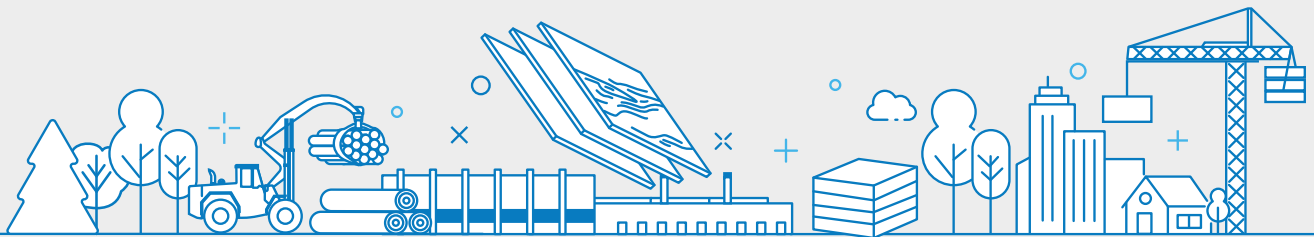
Abstract: The lack of affordable productive land and serious concerns from local communities about large-scale industrial plantations severely constrain the establishment of new plantations in southeastern Australia. In contrast, support amongst local agricultural communities for increasing trees on farms and agroforestry integrated into their farm practice, is high.

Unfortunately, the scale, diversity, and logistical challenges of farm forestry limit its contribution as a dependable source of wood for Australia's timber in the near term. However, increasing tree cover in agricultural landscapes aligns strongly with emerging markets for natural capital, particularly for carbon and biodiversity values. The economic, ecological, and social issues associated with native forests, industrial plantations, and farm forests have been studied. Much less is known about the potential for small- to medium-size plantations that are linked to local processing facilities to fill in the gap between farm forestry and industrial plantations and increase domestic wood supplies. Here we present the INtegrated FORestry at Medium Scale (INFORMS) model as alternative option for providing a sustainable wood supply, community acceptance and benefits, and increasing natural capital in agricultural landscapes. Our project evaluates the plantation-production cycle in the Heartwood Unlimited – Radial Timber Australia INFORMS model operating in Gippsland, Victoria through the consideration of financial and natural capital benefits and trade-offs. Our case study will provide the empirical foundations to support investment by local landowners, enterprise, and government in integrated medium-scale growing and processing hubs in regional Australia.

Presenter: Craig Nitschke is a forest and landscape ecologist with expertise in climate change impacts on forests, socio-ecological systems, biodiversity conservation, and sustainable forest management. He uses field studies, remote sensing and ecological modelling to address challenging social and ecological questions. He is a non-practicing registered forester with Forest Professionals British Columbia.

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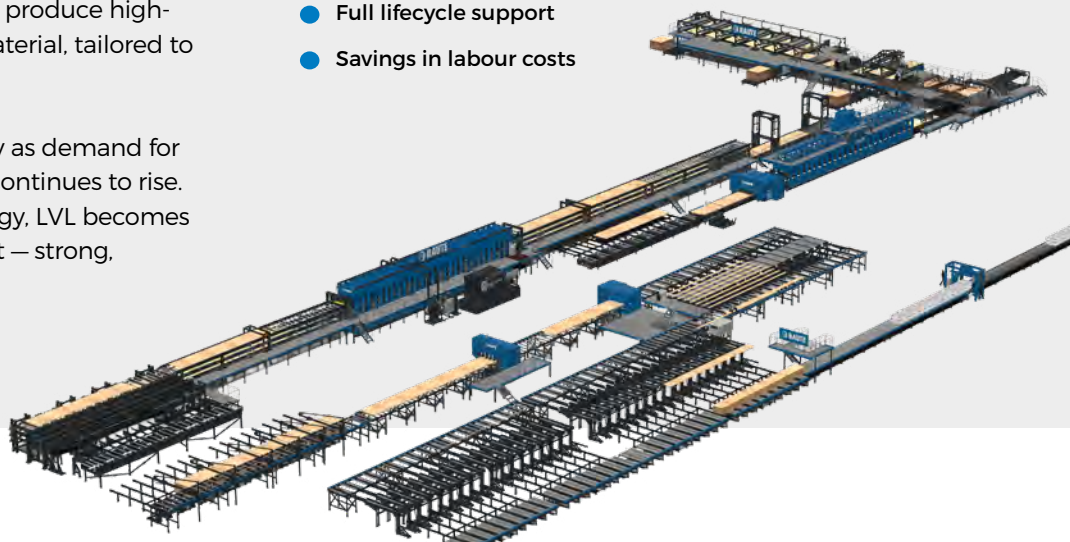
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SPEAKERS AND ABSTRACTS
TUESDAY 21 OCTOBER

DAY TWO

Diversity, Equity and Inclusion in Forestry Breakfast

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Forestry for all: Building a safe and inclusive culture

Abstract: Forestry is changing – and so are the people shaping its future. In this thought-provoking and inspiring panel, voices from across the forestry profession will come together to share their diverse experiences, from moments of challenge to stories of success. Together, they'll explore what a safe and inclusive workplace looks like, the qualities that foster collaboration and belonging, and how diversity strengthens not just our profession, but the forests and communities that rely on them. Expect honest reflections, practical insights, and ideas to help us grow a forestry culture where everyone can thrive.

Panellists:



Kelly Crosthwaite is the Deputy Secretary of Bushfire and Forest Services with the Victorian Department of Environment, Energy and Climate Action (DEECA).

Kelly has worked in natural resources and environmental management for 25 years, in legal, regulatory, policy and leadership roles; and across

multiple jurisdictions.

Prior to her current role, Kelly did a five-year stint in a corporate role, as Executive Director of People and Culture at DEECA.

Kelly has law and environmental science degrees, post-graduate qualifications in fisheries management and is a qualified forest firefighter.



Dr Nora Devoe is a professional forester and silviculturist with a PhD from Yale University. She has worked across Africa, Latin America, the Asia-Pacific, USA, New Zealand and Australia in sustainable timber production, biodiversity conservation, and rural development. Her background spans public policy, academia and forestry for

development, with a strong interest in the social dimensions of forestry and forest restoration.



As CEO of Forestry Australia since 2019, **Jacquie Martin** has led the organisation through significant growth and transformation, driving a strong focus on evidence-based decision making and active management while championing an inclusive and forward-looking forestry sector. Under her leadership, the

organisation has expanded its role as the peak body for forest scientists, managers, and growers. She has overseen the introduction of new professional development opportunities while strengthening member satisfaction and engagement, helping create a vibrant community.

With more than two decades in not-for-profit leadership and a Master of Business Administration, Jacquie is passionate about building workplaces, and a profession, where diverse voices collaborate and drive innovation – producing stronger outcomes for forests and the people who manage, study and care for them.



Luci Virgo, who was born in Mount Gambier an undisclosed number of years ago, has never wandered too far from home, with deep roots in the Limestone Coast.

From seedling to sapling, she grew through school and a stint at the abattoir before putting down lasting roots at the Jubilee Sawmill, where she's

proudly carried on a three-generation family tradition in timber for more than 30 years.

In mid-2020, Luci walked into work as herself – a proud transgender woman – and hasn't looked back.

These days, when she's not at the sawmill, you'll most likely find her at her favourite café, unashamedly fuelling her coffee habit.



Facilitator: Christine Briggs has had a 3-decade long career in our industry, having held GM roles in marketing with the major Australian softwood sawmillers, starting at CSR, then Weyerhaeuser, Gunns, Timberlink and AKD. Her leadership experience covers change management, culture and brand alignment, team and

people development, strategic planning, stakeholder engagement, marketing and supply chain strategy.

Christine transitioned in 2023 from her exec career to a combo of being the principal now of her own consulting business, as well as a Board career. She has 12 years of Director experience to date including FWPA for 9 years until 2023. She is currently a director on two industry Boards - Responsible Wood and AFWI (Australian Forest and Wood Innovations).

She is passionate about our industry brand being known for sustainability and strongly believes two key ingredients for this are collaborative innovation and workforce diversity in all its aspects.

PLENARY SESSION #2

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First Nations and forest management

First Nation communities own or control nearly 80 million hectares of Australia's forest, 60% of the total forest area, including Indigenous Protected Areas, land under Indigenous Land Use Agreements, and forested land subject to Native Title. This panel explores the growing role of Australian First Nations peoples in forest and land management and forest restoration, highlighting how traditional ecological knowledge can be integrated with western science to create new forest management paradigms that reflect cultural values, maintain biodiversity, build climate resilience, and generate sustainable economic opportunities for local communities. The session will discuss challenges and requirements for successful collaborations between First Nations communities, government agencies, and the forestry sector to achieve long-term cultural, ecological and economic outcomes in forest landscapes across Australia.



Panellists: Courtney Hunter-Hebberman is a Peramangk fire custodian, cultural educator, and advocate dedicated to protecting Country through traditional knowledge and practice.

Courtney works across community, art, and environmental stewardship, she leads cultural fire projects

that restore ecosystems, strengthen Indigenous knowledge systems, and build resilience against climate change. An award-winning artist and poet, she shares story and law through creative expression, public speaking, and education. Her leadership honours ancestral responsibilities while inspiring future generations to walk gently with Country, keeping fire as a tool for healing and renewal.



Rachael Cavanagh is a respected Cultural Fire Keeper and Indigenous knowledge holder with over two decades of experience working across Australia's environmental sector. Her work bridges cultural practices and contemporary environmental management, offering a powerful voice for Country and

the custodians who care for it.

As a consultant, Rachael works with organisations, governments, and communities to embed Indigenous knowledge systems, science, and cultural ways of being into environmental policy, land management, and climate resilience strategies. She is a leading advocate for Indigenous-led decision-making and cultural governance and has been instrumental in supporting Indigenous stewards to reclaim and strengthen their roles as leaders and protectors of Country.



Gibson Farmer Illortaminni is a Senior Tiwi Aboriginal man, dedicated to forestry on the Tiwi Islands, providing income and jobs for Tiwi people. Gibson is the Deputy-Chairman of Tiwi Plantations Corporation, a 100% Tiwi owned company linked to all 8 clan groups. Gibson played a key role developing Port Melville, equipping it for

woodchip exports. Gibson is the Chair of Port Melville Pty Ltd. He was born in Milikapiti on Melville Island, educated in Darwin and Mackay (QLD), and began working in forestry at the age of 17. Previously Gibson served as Chair of the Tiwi Land Council for 11 years.



Kim Puruntatameri is a Senior Tiwi Aboriginal man, who is Chair of the Tiwi Plantations Corporation. Kim has worked tirelessly for the long-held ambition for large scale forestry and employment on the Tiwi Islands. The Tiwi Plantations Corporation board, led by Kim has representation from all 8 clan groups and is connected to

all Tiwi people. Kim is also the Deputy Chair of Port Melville Pty Ltd and has previously served on the Tiwi Land Council.

BREAKOUT #5 – Challenges | What keeps me up at night?

Panel Challenges | What keeps me up at night?

Abstract: In this thought-provoking session, a panel of leaders from across the forest sector will share candid insights into the challenges, uncertainties and risks they see shaping the future of our forests, our profession and the communities we serve. What are the issues that keep them awake at night? What are the biggest risks to the sector's future – from climate change and public perception to workforce capability, policy uncertainty and market dynamics? And most importantly, how can we, as a sector, work together to turn these challenges into opportunities? Join us for an honest, solutions-focused conversation that will help frame the priorities for active and adaptive leadership in forestry going forward.

Panellists: **Anshul Chaudhary** is an accomplished executive leader with over two decades of experience spanning finance, corporate services, and strategic leadership roles across both the private and public sectors. He is currently the Chief Executive Officer of Forestry Corporation of NSW, a state-owned corporation managing over 2 million hectares of sustainably managed forests, where he previously served as Chief Financial Officer.

A passionate advocate for public value, innovation, and sustainable development, he has led transformational programs in digital modernisation, commercial partnerships, and organisational culture and strategy. He has also been an active contributor to his local Western Sydney community, supporting initiatives in homelessness and social inclusion.

Dr Michelle Freeman FFA GAICD is a forest scientist, a Registered Forestry Professional, and President of Forestry Australia. She is a Commissioner with the Australian Centre for International Agricultural Research, a Director of FWPA, and has worked in research, regulation, operations and governance of native forests. Her PhD with the University of Melbourne and CSIRO examined Tiwi Islands savanna fire and carbon. Integrity, compassion, and open engagement are at the core of Michelle's values. She now leads Calyx, a boutique consultancy that links science with practice to support ecological forest management, policy and evidence-based advocacy and community outcomes.

Cameron McDonald is currently the Executive General Manager – Australia for OneFortyOne, a vertically integrated Trans-Tasman forest products company. In his current role he has responsibility for the management of the company's Australian operations incorporating the radiata pine estate in the Green Triangle and the Jubilee sawmill in Mt Gambier. Prior to joining OneFortyOne he was the Chief Operating Officer of HVP Plantations and before

that the Director – Strategy and Corporate Affairs at VicForests. Over his 35-year career in the forest products sector he has undertaken roles spanning operations, finance, strategy and corporate affairs in both the native forests and plantation sector. Mr MacDonald is currently the Chair of the Green Triangle Forest Industries Hub and a Director of Forest and Wood Products Australia. He has a degree in Forest Science from the University of Melbourne, an MBA from the Melbourne Business School and is a Graduate of the Australian Institute of Company Directors. Mr MacDonald is a member of Forestry Australia and the Gottstein Fellow.

David Shelton is New Forests Managing Director for Australia and New Zealand, and has responsibility for overall strategy and direction for the New Forests and New Agriculture group, in these regions. Primary focus through this role is investment performance, as well as product development and wider company strategy. Dave has a long history with the business, and is also responsible for Investment team coordination across the whole group, covering Australia, NZ, USA, Asia and Africa. These teams are responsible for sourcing and evaluating new investment opportunities, including structuring and executing transactions, financial analysis, business planning, negotiation, due diligence, and tax planning. Dave has led the investments of New Forests' funds in Australia and New Zealand since 2006, now totalling almost AUD 12 billion in funds and assets under management across the whole group. These investments have made Dave one of the most experienced investment specialists covering Timberland and Agriculture globally, also making New Forests the largest forestry investment manager in Australia, and a rapidly growing manager of Agricultural assets.

BREAKOUT #6 – Forestry in Tasmania – The Past, Present, and Future

Forestry in Tasmania – The Past, Present, and Future

Dr Elizabeth Pietrzykowski¹, Anne Chuter², Suzette Weeding³

¹Private Forests Tasmania, Hobart, Australia.

²Forest Practices Authority, Hobart, Australia.

³Sustainable Timber Tasmania, Hobart, Australia

Abstract: Tasmania's forestry industry has evolved significantly over the years, driven by innovation, science, and sustainability. This session, presented by Private Forests Tasmania, the Forest Practices Authority and Sustainable Timber Tasmania, will explore the industry's history, current practices, and future challenges and opportunities.

As the Forest Practices Authority celebrates its 40th anniversary, the session highlights Tasmania's leadership in sustainable forest management. Tasmania is the only state in Australia that benefits from the combined expertise of Private Forests Tasmania, the Forest Practices Authority and Sustainable Timber Tasmania working alongside each other to ensure forestry practices are not only environmentally responsible but also economically viable. The Forest Practices Code, grounded in decades of scientific research, ensures the sustainable management of Tasmania's forests, enabling wood production while protecting biodiversity, water quality, and ecosystem health.

Private forest owners play a crucial role in this system, managing their land to balance economic and ecological goals. Their stewardship contributes to Tasmania's natural heritage and supports sustainable timber production.

The session will also reflect on Tasmania's complex forestry history, including the challenges of the Managed Investment Scheme (MIS) era, which saw rapid expansion of the plantation estate and ended in controversy. Despite these challenges, the industry has shown resilience, adapting to changing market demands and environmental expectations. Today, Tasmania's forestry sector is a model of sustainable, well-regulated forest management.

Looking ahead, the session will address future opportunities and challenges, including climate change, shifting market dynamics, and the growing demand for certified sustainable products. The role of forest management in carbon neutrality and sustainability will be explored, showcasing Tasmania's dedication to continuous improvement of forest practices for ongoing success.

Presenters: **Dr Elizabeth Pietrzykowski** was appointed Chief Executive Officer of Private Forests Tasmania in September 2023 for a five-year term. With over 20 years of experience in natural resource management, Elizabeth brings deep expertise in both strategic and operational leadership across the forestry, agriculture, and environmental sectors.

She is passionate about horizon leadership, identifying long-term, integrated solutions that benefit the economy, communities, and the environment. A self-motivated and values-driven leader, Elizabeth is committed to supporting Tasmania's private forest industry in growing a resilient and sustainable sector for future generations.

Prior to joining Private Forest Tasmania Elizabeth, has held a number of senior leadership roles including as Commercial and Business Manager at the Tasmanian Institute of Agriculture (UTAS) and as State Operations Lead with Greening Australia. She is experienced in all facets of forest management, including stakeholder engagement, strategic planning, policy development, and change leadership.

As a Forest Health Scientist, Elizabeth has delivered expert solutions across not only Australia's forestry landscape, but also the forests of Papua New Guinea and Solomon Islands. Her work has spanned forest health diagnostics, forest practices planning, biodiversity assessments, and the design of regeneration and restoration plans, including for forest carbon projects. Her practical and scientific knowledge is matched by her experience working alongside landowners to support sustainable land use and productivity.

Outside of work, Elizabeth enjoys designing and building gardens and competes in equestrian events with her horse 'Willow'.

Suzette Weeding is a forest industry professional and a senior executive at Sustainable Timber Tasmania. She has over 25 years direct experience in the Australian Forestry Industry holding senior roles directly responsible for environmental management, operational management, management of natural and cultural values, and development and integration of sustainable forest management systems. She has wide-ranging experience in all facets of forest and land management, in both Government and private sectors. Her current role with Sustainable Timber Tasmania is General Manager – Conservation and Land Management. Suzette is also vice chair international Programme for the Endorsement of Forest Certification (PEFC), chair of the Gottstein Trust, deputy chair Forest Education Foundation, director of the Healthy Forests Foundation, chair of the AFPA certification subcommittee and on the executive committee of the Growers Research Advisory Committee FWPA and member of Tasmanian State Fire Management Council.

With nearly two decades of experience in government roles supporting Tasmania's forestry sector, **Anne Chuter** brings deep expertise in forest ecology, regulation, and policy. As Chief Forest Practices Officer at Tasmania's Forest Practices Authority, Anne leads the implementation of sustainable forest management systems across Tasmania.

Her career has included senior leadership as Director of Resources at the Department of State Growth, where she oversaw forestry and mining policy teams. Anne also contributes to national forestry strategy as a member of the Strategic Forest and Renewable Materials Partnership.

Anne is a passionate advocate for sustainable forest management and clear regulatory guidance. She has championed Tasmania's co-regulatory forest practices framework, integrated science-based conservation into forest operations, and led strategic policy development. Her collaborative approach sees her working closely with landowners, industry, researchers, and professionals to promote responsible and sustainable forest management.

BREAKOUT #7 – Innovation in plantation management

The Forestry Centre of Excellence: A contemporary forest research entity a government, university and industry partnership in regional South Australia

Jim O’Hehir, UniSA

Abstract: Forest industry research needs are ongoing to continually improve current practices and address new challenges. A loss of research capacity, created an opportunity to rebuild local research capability to service the regional Green Triangle forest industry, evolving to a national client base.

A flexible model provided immediate benefits where industry networked with capable researchers, and established Forest Research Mount Gambier, as part of UniSA. The initial NIFPI and FWPA funding models did not provide a guarantee of ongoing research capacity.

In 2022, the industry identified core research capacity needed in the GT, including: wood science and wood products, forest health and biodiversity, forestry systems and silviculture. The SA Government provided funding: an \$15m, 10-year agreement with UniSA for a Forestry Centre of Excellence (FCoE) located in Mount Gambier, South Australia. The funding allowed the recruitment of high calibre researchers through offering longer term contracts. The FCoE commenced in January 2024 with Director, Professor Jeff Morrell, a wood products scientist, commencing in 2025.

The FCoE represents a contemporary model of government, university and industry partnership that supports strategic research through the whole forestry, processing and construction/end product supply chain. The model is very efficient, adaptive and responsive to the needs of the industry and is from 2026 well-placed within the Adelaide University.

Presenter: Dr Jim O’Hehir has spent 40 years in the plantation forest industry, beginning in 1984 with the Woods and Forests Department/Department of Primary Industries and later at ForestrySA in executive and senior technical roles, and Board and Chair positions at Tree Breeding Australia. General Manager Forest Research at UniSA in 2018 and Forestry Centre of Excellence in 2024.

Jim has qualifications in forest science, including a Bachelor of Science (Forestry) from ANU and a Master of Forest Science and PhD from the University of Melbourne.

Innovate, stop, swap, or spot: Managing koalas and forestry worker safety in bluegum plantations

Professor Delene Weber¹, Professor Anthony Finn¹, Dr Morgan Schebella¹, Dr Laith Al Shimaysawee¹, Associate Professor Russell Brinkworth², Associate Professor Desley Whisson³

¹University of South Australia, Mawson Lakes, Australia. ²Flinders University, Tonsley Park, Australia. ³Deakin University, Burwood, Australia

Abstract: Koalas are a beloved species in Australia and internationally, and the forestry industry is committed to supporting their survival. But what happens when koalas inhabit forests planned for harvest? Any impact on koalas will affect a company’s social licence to operate. Traditional approaches to protection involve the use of human spotters to detect and monitor koalas during harvesting operations but this creates a serious safety risk to these forest workers. While there are calls nationwide for koala reserves, stopping harvesting is not a commercially viable option. Companies can consider replacing blue gums with pines but in koala-dense areas this will still have associated problems for koalas that could impact welfare and consequently social licence to operate. One option is to develop innovative technology that can accurately detect koalas and minimise the number of spotters required during the harvest process. This session will explore alternative detection modes that reduce risk to forest workers and enhance protection for koalas. It will highlight research that has been developed using biologically inspired vision techniques based on the insect vision system. The techniques developed can improve the signal-to-noise ratio, which is an important factor when small species are hidden by leaves and far from a camera, as well as suppressing the background clutter in a forest, and thus allowing accurate detection and low incorrect identification.

Presenter: Delene Weber is a Professor of Environmental Science at the University of South Australia and a lead investigator in the NIFPI Koala Detection Project. She has also worked with Koala Life and Cleland Wildlife Park on koala-related education projects. The focus of her research is human dimensions of natural resource management issues, with most attention on fire and park planning issues. She has published on the use of virtual reality and public participation GIS in these areas.

Overview of implications of water licencing for plantation forest growers

Dr Baden Myers^{1,2}, Mr Pasindu Karunatilaka², Dr Ben Umali³

¹Forestry Centre of Excellence, Mount Gambier, Australia. ²University of South Australia, Adelaide, Australia. ³ICT International, Adelaide, Australia

Abstract: Water allocation plans have become a crucial component of water resource management in Australia to protect surface and groundwater resources and ecosystems that depend on them. In areas where surface water or groundwater resources are under stress, water allocation plans have often led to licensing of water resources, where industry and agriculture access water rights on an open market with a portion of the resource reserved for environmental and community interests. Plantation forest owners have generally not been included in water markets because plantations are typically not irrigated through a metered supply. However, in the South Australian portion of the Green Triangle growing region, plantation growers have been included as part of the Water Allocation Plan for the Lower Limestone Coast Prescribed Wells Area since 2013. Under the terms of this plan, which aims to ensure the long-term sustainability of a critical groundwater resource, plantation forests owners must maintain a licence for using a quantity of water for their plantation forest which accounts for the interception of rainfall by the plantation and – in some cases – direct groundwater extraction. This presentation discusses the implications of this water policy for forest growers in the region. Key impacts include the cost of water licencing, the decline of plantation area in the region since forestry was included, the need for research and to ensure adequate personnel are informed enough to meaningfully and effectively participate in periodic water allocation planning review and amendment processes with other water licence holders.

Presenter: Baden Myers is a hydrologist from the University of South Australia and Forestry Centre for Excellence. Baden has been researching plantation water use in the Green Triangle region since 2018. Key research outputs have included measurement of plantation water use in plantations focussing the depth to which extraction may occur, the impact of clay layers and collecting data to support remote sensing. Baden is also interested in development of models which can more effectively account for forest water use whilst ensuring that policy remains easy to implement for forest growers and licencing authorities.

BREAKOUT #8 – The role of managed fire in forest restoration

Developing the next edition of an Australian in-field fuel assessment guide

Dr Samuel Hillman¹, Dr Thomas Duff²

¹DEECA, Melbourne, Australia. ²CFA, Melbourne, Australia

Abstract: Although a natural occurrence, recent fire activity in Australia in both fire adapted landscapes (e.g. South-eastern and south-western Australia) and ecosystems which have not previously supported fire regimes (e.g. rainforest of Eastern Australia) have highlighted novel social, environmental and economic impacts of fire. Land and fire managers and researchers conduct fire behaviour modelling to investigate climate, vegetation, and fire interactions to help better protect and inform communities. Accurate in-field fuel data is imperative for these purposes as well as to investigate how fuel treatments can alter vegetation structure and improve our understanding of fire ecology.

Whilst current approaches implemented across Australia represent best-practice, there are opportunities for improvement to ensure that field assessments are fit for the contemporary purposes of validating fuel inputs and monitoring fuel changes from fuel treatments and bushfire.

A national Disaster Ready Fund project 'Fueling the Fire Behaviour Models of the Future' will build on Australia's extensive fuel measurement legacy to create a comprehensive fuel assessment manual applicable across Australian landscapes. In this presentation we will highlight the results from an extensive literature review into fuel assessment methods (including remote-sensing) used across the world. Secondly, we will present an updated set of attributes to be collected in-field and identify how these attributes support meeting both fire modelling and land management needs.

Through the delivery of a new fuel assessment method, we envisage that land managers will be on the forefront of understanding fuel condition to proactively manage fire into the future leading to more resilient landscapes.

Presenter: Sam Hillman is a passionate fire and remote sensing practitioner, enthusiastic about linking innovative scientific developments with field operations. Sam currently works as an applied fire scientist for Forest Fire Management Victoria where he is involved in validating fire simulators, implementing novel 3D remote sensing technology to measure vegetation structure and fire fighting operations. Previously Sam completed a PhD at RMIT University and post-doctoral research with the US Forest Service.

To remove or not to remove. That is the question, facing fire managers in windthrow affected landscapes

Shannon Devenish, FFMVic

Abstract: Recent severe storm events have caused extensive damage to forested areas across Victoria, including the Dandenong Ranges, one of the highest bushfire risk areas in Australia, a biodiversity hotspot, and containing critical infrastructure that provides drinking water to 5 million people. Destructive winds of over 140km/h caused a significant amount of fallen and hazardous trees and debris, including significant “wind-thrown” tree stems resulting in a critical change to forest fuel structure.

While many forest firefighters have directly experienced altered fire behaviour and access and safety issues from coarse fuels when suppressing bushfires or delivering planned burning, there is limited peer reviewed evidence of this in the Australian literature. Compounding this is that the current fuel classification system used in Australia for eucalypt forests focuses primarily on fine fuels to estimate direct attack effectiveness and forward rate of spread.

With the frequency of windthrow events seemingly increasing, and significant public pressure from Environmental NGO's to leave the material in situ, Forest Fire Management Victoria must make informed and evidenced based decisions on whether “to remove or not to remove” fallen debris. To address this a small team of fire behaviour and operational firefighting experts from FFMVic, and the Country Fire Authority were brought together to synthesise knowledge and practice, using the Dandenong Ranges as a case study, to develop an objective based decision-making framework and risk assessment tool to guide land and fire managers in how to manage and restore forest landscapes post wind-throw events.

Presenter: Shannon Devenish has over 15 years experience in bushfire, emergency and forest management, including as the Deputy Chief Fire Officer for DEECA's Port Phillip Region. She is a leader in forest and fire management in Victoria, bringing strong technical knowledge from her bachelor's degrees in Science, Environmental Science and Masters in Forestry, practical experience from field-based roles and over 10 years as a general firefighter. She is currently the Director of Planning and Authorisations within DEECA's Forest and Fire Operations Division, leading reform of the operational and tactical planning framework for forest and fire management works on public land.

Understanding seasonal fire risk in live fuels: presenting a new mechanistic live fuel moisture content (LFMC) model

Dr Tegan Brown^{1,2}, Dr W. Matt Jolly², Mr Elliott Conrad², Dr Zachary Cope³, Dr Samuel Hillman^{1,2}

¹Department of Energy, Environment and Climate Action, East Melbourne, Australia. ²Missoula Fire Sciences Laboratory, US Forest Service, Missoula, USA. ³Center for Forest Disturbance Science, US Forest Service, Athens, USA

Abstract: Quantifying fuel moisture content accurately is critical for understanding vegetation flammability and bushfire risk. Models for dead fuel moisture content are relatively advanced, however, the mechanisms underpinning changes in live fuel moisture content (LFMC) have been more difficult to capture.

Here we present a mechanistic model that combines ecophysiology and combustion traits to determine LFMC. The model decomposes LFMC into leaf mass area (LMA), relative water content (RWC), surface-area-to-volume ratio (SAV), and the volumetric saturated water holding capacity (κ). We evaluate model performance in six shrubs common to the inter-mountain west USA. Finally, we demonstrate how these inputs can be used to parameterise a physics-based coupled fire model (QUIC-fire) and assess how shrub seasonal dynamics impact modelled fuel consumption.

We collected 860 foliage samples to test the mechanistic model. Ten model variants were tested, using combinations of fixed and time-varying inputs to understand model performance using summarised inputs. The best performing model included time-varying LMA and RWC, and seasonally fixed inputs for SAV and κ ($r^2=0.89$, $MAE=11.38\%$) across all shrub species. Physical and chemical model inputs from a single species were then input to QUIC-Fire, where fuel consumption changed from 2.37% early in the season, to 97.33% toward the end of summer.

LFMC inputs from the same physical and chemical variables used to parameterise the fire model represents a step forward in our capacity to link ecophysiology and combustion science. This will enable us to bridge gaps between disciplines and enhance our capacity to predict LFMC across plant functional types.

Presenter: Tegan Brown is a land and fire manager working at the intersection of research, policy and implementation in Victoria, Australia. Starting her career as a Science Graduate with the Victorian government, Tegan has worked across bushfire planning and recovery, forest policy and planning and climate fire research. Tegan completed a PhD at the University of Melbourne in 2022, and then a post-doctoral research fellowship at the US Forest Service's Missoula Fire Lab, where she focussed on physiology-based approaches to estimating flammability in living vegetation. Tegan currently works in the Applied Fire Science team for Forest Fire Management Victoria.

BREAKOUT #9 – Biodiversity: driver or impediment to forest restoration and plantation forestry?

Professor Brendan Wintle, *University of Melbourne*

Abstract: Investment in biodiversity and nature positive outcomes is accelerating with international developments such as the Taskforce on Nature-related Financial Disclosures (TFND) and national policy drivers such as the Federal Government's Nature Positive Plan. However, the path to integrating nature impacts and benefits into corporate and financial decision making is still unclear. Lack of agreed condition metrics, baselines, projection tools and market mechanisms make it difficult for corporate entities to construct informed business cases for native positive investment. These aspects are particularly challenging for investment in forest and landscape restoration involving a mix of production and conservation activities and a range of tree species and situations.

The speakers selected for this panel bring a wealth of experience and range of perspectives as trailblazers in natural capital measurement and investment. This session will focus on the opportunities for forest and farm owners and managers to invest in and benefit from nature positive investment, how to integrate nature-positive outcomes into corporate forest and farm strategies and potential synergies with timber and agricultural production and with markets for environmental services such as carbon and water.

Presenter: **Professor Brendan Wintle** is a global leader in conservation ecology and ecological modelling research toward species conservation. He is a Professor in Conservation Ecology at the University of Melbourne, recent Director, Melbourne Biodiversity Institute, and one of the Principal Investigators in the Quantitative and Applied Ecology group (QAECo). His research is characterised by the development of quantitative methods, and insights into key issues facing the discipline, including national and global leadership in conservation science and practice. He is interested in uncertainty and conservation decision making and has published on a wide range of technical and policy issues around conservation and natural resource management, including optimal conservation investment, optimal monitoring and adaptive management, systematic conservation planning, population viability analysis, and habitat modelling and mapping.

Panellists: **Daryl Killin** combines over three decades of dedication to forest science and environmental management with a core mission to develop innovative climate change mitigation projects that foster meaningful emissions reductions and carbon sequestration. His work focuses on facilitating action, with a strong preference for the delivery of outcomes.

Daryl's core competencies lie in steering complex projects that utilise technological advancements for efficiency improvements. With a demonstrated track record in overseeing forestry and NRM projects, Daryl's work contributes to reshaping the conversation around deep carbon sequestration methods, pathways, and outcomes, and championing decentralised models of revenue-sharing by cutting out the "middle-man".

Radha Kuppalli is a Board Director and Advisor globally to growth businesses, fund managers, and NGOs focused on accelerating the transition to net zero and nature positive. She is on the boards of both Greening Australia and Accounting for Nature and serves as a member of the Australian Government's Nature Finance Council. She recently also served as a board director and executive of Re-Vi, an Australian climate tech company developing institutional scale biochar projects.

Radha previously helped grow New Forests into one of the world's leading sustainable forestry and natural capital investment firms. Her achievements include delivering a multi-billion dollar capital base from blue-chip institutional clients, embedding a deep sustainability culture, and driving innovative investments in carbon, biodiversity, and blended finance across Australia, New Zealand, the United States, and Southeast Asia.

David Shelton is New Forests Managing Director for Australia and New Zealand, and has responsibility for overall strategy and direction for the New Forests and New Agriculture group, in these regions. Primary focus through this role is investment performance, as well as product development and wider company strategy. Dave has a long history with the business, and is also responsible for Investment team coordination across the whole group, covering Australia, NZ, USA, Asia and Africa. These teams are responsible for sourcing and evaluating new investment opportunities, including structuring and executing transactions, financial analysis, business planning, negotiation, due diligence, and tax planning. Dave has led the investments of New Forests' funds in Australia and New Zealand since 2006, now totalling almost AUD 12 billion in funds and assets under management across the whole group. These investments have made Dave one of the most experienced investment specialists covering Timberland and Agriculture globally, also making New Forests the largest forestry investment manager in Australia, and a rapidly growing manager of Agricultural assets.

BREAKOUT #10 – First Nations approaches to forest and landscape restoration

Building Aboriginal partnerships: The Nukunu Cool Burn Program

Professor Delene Weber¹, Mr Travis Thomas¹, Dr Julie Nichols², Ms Jayne Boase^{1,3}, Dr Jared Thomas^{4,3,5}

¹University of South Australia, Mawson Lakes, Australia. ²University of South Australia, City West, Australia. ³Nukunu Wapma Thura Aboriginal Corporation, Adelaide, Australia. ⁴University of South Australia, Adelaide, Australia. ⁵SA Museum, Adelaide, Australia

Abstract: Aboriginal Australians experience significant disadvantages compared to most Australians across various aspects of life, including income, education, and health. The reintroduction of cultural burning in many parts of Australia has been associated with improved environmental, social, and health outcomes. In the Southern Flinders Ranges, the Nukunu People have led a range of initiatives to get people back on Country, to provide meaningful employment, and improve landscapes. This presentation will focus on the barriers that have been overcome and the enablers that have made their cool burning program successful. It will include an interactive discussion on how forestry companies could contribute to Aboriginal employment, what the advantages are, and provide suggestions for how concerns can be overcome.

Presenter: Travis Thomas has served as the Co-Lead of the First Nations Clean Energy & Emissions Reduction Advisory Committee to the Federal government, Chair in the Nukunu Wapma Thura Aboriginal Corporation & as Co-Chair of the First Nations South Australia Aboriginal Corporation, which is a peak body for advocating for First Nations across South Australia. As part of his role he works with the South Australian Aboriginal Community Controlled Organisation Network around closing the gap initiatives & advocacy for Aboriginal Community Controlled Organisations. He has been advocating and assisting in the advancement of First Nations interests & sharing & protection of culture & the incorporation of its values into policy & practices across multiple sectors in an effort to generate better outcomes for First Nations. Travis has completed studies in Applied Science in Conservation & Park Management & also leadership. He has undertaken guest lecture roles with the University of South Australia & Oxford Brooks University & at national forums & events. He has worked to create partnerships in community development projects. He has operational experience working in both Defence & the Emergency Services. Travis has also

served as a Volunteer Firefighter for over 20 years and has experience in firefighting operations & command & control at significant fires & emergencies within South Australia & interstate. Travis enjoys sport, has competed at state & national levels & also enjoys spending time on Country. If he gets spare time he likes to go surfing or work on his PhD.

Delene Weber is a Professor of Environmental Science at the University of South Australia and co-coordinator of UniSA's Fire and Culture award that has received the Yaitya Tirka Award for Excellence in Aboriginal Learning and a national citation from Universities Australia for Outstanding Contributions to Student Learning. Together with her Aboriginal colleagues, Delene has been privileged to work with the Nukunu Wapma Thura Aboriginal Corporation on a cool burning social enterprise project over the past 5 years.

Development of an endemic sandalwood species for Indigenous led forestry on Cape York Peninsula

Associate Professor David Lee¹, Mr Anthony Burridge², Dr Aaron Brunton¹, Mr Nicholas Thompson^{3,4}

¹Forest Research Institute, University of the Sunshine Coast, Sippy Downs, Australia.

²Department of Primary Industries, Gympie, Australia. ³Gudang/Yadhaykenu Group, Injinoo, Australia. ⁴Apudthama Land Trust, Injinoo, Australia

Abstract: On Cape York Peninsula (CYP), opportunities for Traditional Owner-led industry development are limited. However, research suggests that northern sandalwood (*Santalum lanceolatum*) plantations and related products could offer valuable economic opportunities for local communities. This includes the potential to incorporate sandalwood into existing Indigenous land management plans, selling sandalwood seed and producing seedlings in local nurseries, and providing an opportunity to sustainably use an endemic species. Unfortunately, sandalwood in the northern region of CYP was over harvested between 1860 and 1940, and there is little regeneration in the wild and the surviving populations are highly clonal.

Hence, a sandalwood domestication and breeding program has been initiated, with informed Traditional Owner assent, to allow sandalwood to be planted back into the wild and also to provide improved germplasm that can be used to establish plantations on Indigenous land on the Cape York. Two sandalwood plantings have been established. Six-year survival in a trial that was irrigated for 12 months was good (81%) and moderate in an un-irrigated trial (72 %). Growth in the irrigated trial was also superior with sandalwood trees averaging 3.2 m height and 4.4 cm diameter at breast height over bark (DBHOB). In contrast the un-irrigated trial averaged 2.3 m height and 3.1 cm DBHOB.

This paper outlines the interventions to improve sandalwood conservation in the CYP, as well as efforts to domesticate sandalwood so that the Traditional Owners can benefit from this species. Impediments to the development of sandalwood plantations and enrichment plantings are also discussed.

Presenter: Associate Professor David Lee, from the University of the Sunshine Coast has over 30 years' experience in domestication, breeding, and wood quality research. His work focusses on *Santalum*, *Corymbia*, *Eucalyptus*, and *Pinus* species in Australia and overseas. He has over 200 publications.

Indigenous-Owned certified forestry on the Tiwi Islands

Matt de Jongh¹, Hamish Little², Gibson Farmer Illortaminni³, Kim Puruntatameria³

¹Responsible Wood. ²Midway. ³Tiwi Plantations Corporation

Abstract: As Australia faces increasing challenges in balancing economic development, environmental conservation, and community expectations, the role of sustainable forest management has never been more critical. Certification schemes such as Responsible Wood provide assurance that forest products are sourced from well-managed forests, fostering public trust and social acceptance.

An independent report comparing Responsible Wood and FSC has demonstrated the credibility and sustainability of both schemes, reinforcing their role in responsible forest stewardship. These findings highlight that certification is not just a market tool but a crucial mechanism for ensuring long-term forest sustainability, supporting biodiversity, and mitigating climate change.

Further strengthening this understanding, the University of Melbourne is currently conducting a research project investigating the impacts of chain of custody and forest certification. This study will provide valuable insights into how certification contributes to sustainable supply chains and the broader socio-economic benefits for regional communities.

This presentation will explore how Responsible Wood certification aligns with Australia's future sustainability goals, supports social licence, and enhances community engagement. By fostering collaboration across industry, government, and stakeholders, certified forests can continue to deliver economic, environmental, and social benefits while ensuring long-term stewardship of Australia's forest resources.

Presenters: Matt de Jongh is a forester with over 20 years' experience in both operational and policy roles and is also a Director and Registered Forestry Professional for Forestry Australia. Matt is the Sustainability Manager for Responsible Wood, which is the national governing body for the Programme for the Endorsement of Forest Certification (PEFC),

the world's largest forest certification scheme. Matt is passionate about promoting and communicating about sustainable forest management and ethical and responsible supply chains.

Hamish Little is a senior executive with 25+ years of experience leading forestry, agriculture, and mining operations, specialising in carbon markets, large-scale investment, and sustainable growth. He is recognised for building high-performing teams and delivering transformative projects with major corporate and institutional partners.

Gibson Farmer Illortaminni is a Senior Tiwi Aboriginal man, dedicated to forestry on the Tiwi Islands, providing income and jobs for Tiwi people. Gibson is the Deputy-Chairman of Tiwi Plantations Corporation, a 100% Tiwi owned company linked to all 8 clan groups. Gibson played a key role developing Port Melville, equipping it for woodchip exports. Gibson is the Chair of Port Melville Pty Ltd. He was born in Milikapiti on Melville Island, educated in Darwin and Mackay (QLD), and began working in forestry at the age of 17. Previously Gibson served as Chair of the Tiwi Land Council for 11 years.

Kim Puruntatameri is a Senior Tiwi Aboriginal man, who is Chair of the Tiwi Plantations Corporation. Kim has worked tirelessly for the long-held ambition for large scale forestry and employment on the Tiwi Islands. The Tiwi Plantations Corporation board, led by Kim has representation from all 8 clan groups and is connected to all Tiwi people. Kim is also the Deputy Chair of Port Melville Pty Ltd and has previously served on the Tiwi Land Council

Implementing cultural burning in south-east NSW – challenges and opportunities

Dr Tony Bartlett¹, Mr Peter Dixon²

¹Forestry Australia, Canberra, Australia. ²Bega Local Aboriginal Land Council, Bega, Australia

Abstract: This presentation will describe recent work undertaken with the Bega Local Aboriginal Land Corporation to prepare a template for Aboriginal groups to use to enhance understanding and implementation of cultural land management in forests, particularly the implementation of cultural burning. Bega Local Aboriginal Land Corporation has successfully implemented some cultural burns in recent years on its lands in south-east NSW and wishes to scale up the implementation of these practices on its lands and in partnership with other land managers on other forest lands. Their cultural burning adjacent to the coastal township of Tathra reduced the impacts of a devastating bushfire in March 2018 which destroyed 65 houses. Unfortunately, the Local Aboriginal Land Corporations are very poorly resourced to undertake cultural land management and there are a large number of other constraints that impede greater implementation of cultural burning. The presentation will describe the

SPEAKERS AND ABSTRACTS

practices and benefits of cultural land management and explore the constraints and opportunities to scale up cultural land management in public and private native forests in southern NSW.

Presenter: Dr Tony Bartlett AFSM has worked in Australian and international forestry for 47 years and has worked in various forestry roles for the Commonwealth, ACT and Victorian governments and on forestry development projects in Nepal and Vanuatu. He has extensive experience in forest fire management, including risk-reduction-based planning, implementing large-scale prescribed burning programs and performing senior operational roles in the suppression of large wildfires. He has worked with some Aboriginal communities to understand the impacts of wildfires and to support enhanced implementation of cultural land management programs on forested lands.

Peter Dixon is a proud Kamilaroi Nganyaywana man who has worked for the Bega Local Aboriginal Land Council for 13 years and he is currently the Projects Officer. He is passionate about the importance of reintroducing cultural land management across the landscape and has been involved in cultural burning for 9 years.

BREAKOUT #11 – Innovation in plantation management

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ForestrySA

Assessment of current best practice techniques for handling pesticides in forestry applications

Mahima Seeborun¹, Shuping Qiang², Albert Juhasz¹

¹Future Industries Institute, University of South Australia, Mawson Lakes Campus, 5095, Australia.

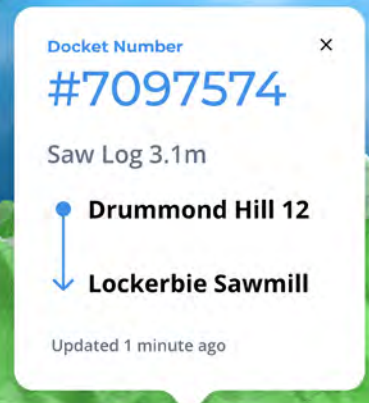
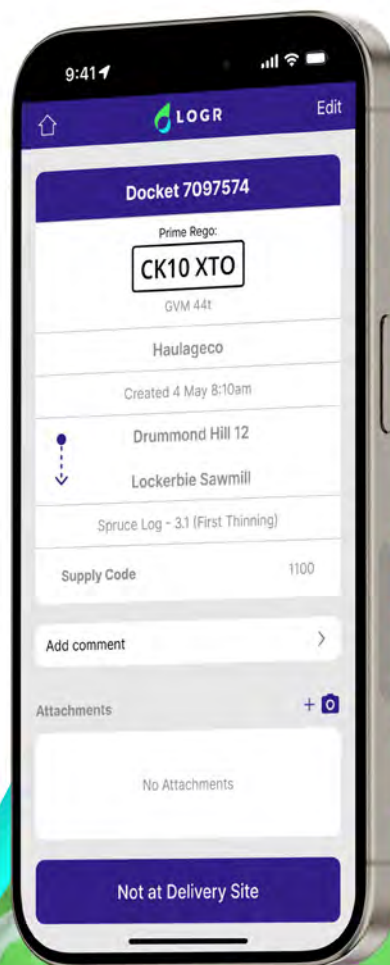
²UniSA Clinical & Health Sciences, City East Campus, 5000, Australia



Operations with Geo-Polygons creating eDockets with built in Chain of Custody



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Abstract: A key component of forestry management is the use of pesticides to remove weed interference at establishment and in early growth stages. During pesticide handling, risk management practices are used to minimise exposure although the effectiveness of these measures is yet to be quantified. This study assessed glyphosate exposure during pesticide mixing, loading and application for drone and knapsack crews using environmental monitoring and biomonitoring approaches. Environmental monitoring determined the concentration of glyphosate in 'dermal patches' (legs, arms, chest, back) and in breath zone air during spraying events while biomonitoring measured urinary glyphosate concentration over a 24-hour period. This provided an indicative estimate of the magnitude of dermal and inhalation pathways and a direct measure of exposure through urine analysis. Patch analysis identified that legs and back were the predominant locations for dermal exposure, particularly for knapsack spot sprayers (up to 790 and 10,500 ng cm⁻² potentially in contact with the skin) while glyphosate in breath zone air (0.63–8.5 µg m⁻³) was approximately 3- and 7-fold higher in drone mixer/loaders and knapsack spot sprayers respectively compared to drone pilots. Glyphosate was detected in the urine of all participants although concentrations varied depending on the time of urine collection and work activity. Cumulative urinary glyphosate excretion ranged from 0.52 to 71.5 µg L⁻¹ with concentrations from drone pilots < drone mixer/loaders < knapsack spot sprayers. However, glyphosate concentrations were over 2 orders of magnitude lower than the EFSA's acceptable operator exposure level (100 µg kg⁻¹ body weight day⁻¹) highlighting effective practices for exposure minimisation.

Presenter: Mahima Seeborun is currently working as a Technical Officer in pesticide assessment at the University of South Australia. With a Bachelor's degree in Environmental Science, she has built a strong foundation in understanding environmental risks, particularly in relation to soil contamination. She is dedicated to advancing her knowledge and practices in environmental protection, focusing on sustainable solutions to mitigate soil contamination.

Towards Sustainable Plantation Water Management: Insights from Monitoring *Pinus radiata* and *Eucalyptus globulus* Water Use in South Australia

Mr Pasindu Karunatilaka¹, Dr Baden Myers², Dr Beng Umali¹, Associate Professor Guna Hewa¹, Dr Jim O'Hehir²

¹UniSA STEM, University of South Australia, Adelaide, Australia. ²Forestry Centre of Excellence, University of South Australia, Mount Gambier, Australia

Abstract: As groundwater resources in South Australia are shared among plantation forestry, agriculture, and natural ecosystems, their extraction is regulated through a licensing system and subject to allocation limits and associated costs. This study

examined water use dynamics in *Pinus radiata* and *Eucalyptus globulus* plantations in the Lower Limestone Coast region, with a focus on the depth of groundwater extraction by *Pinus radiata* and the influence of soil clay content on groundwater uptake by *Eucalyptus globulus*.

Research plots of approximately 400 m² were established across three *Eucalyptus globulus* and two *Pinus radiata* plantation sites to investigate water use dynamics, soil water variability, and plantation growth over a 12-month monitoring period. At each site, all components of total stand evapotranspiration—namely transpiration, rainfall interception, and forest floor evaporation were quantified. Observations indicated that *Pinus radiata* plantations were capable of extracting groundwater from depths of up to 8.5 meters below ground level. In contrast, *Eucalyptus globulus* plots located on soils with higher clay content exhibited moderated groundwater extraction rates compared to plots with lower clay content, which appeared to constrain plantation growth. Findings highlight the interplay between species-specific water use strategies, soil characteristics, and groundwater dependency in plantation systems.

In addition, the study observed the physiological response of these species to extreme weather events such as periods of drought. Therefore, having a comprehensive water use monitoring program provides additional insightful information which contribute to improving water resource management practices in plantation landscapes and inform sustainable forestry planning under variable climatic and edaphic conditions.

Presenter: Pasindu Karunatilaka is a PhD Candidate at UniSA STEM and the Forestry Centre of Excellence at the University of South Australia, specialising in forest hydrology. Pasindu holds a Bachelor of Engineering (Honours) in Civil and Construction Engineering from Curtin University (2020). My research focuses on estimating plantation forest water use in South Australia's South East, specifically examining interactions between *Pinus radiata* plantations and deep water tables, as well as the influence of soil clay content on the water use in *Eucalyptus globulus* plantations.

Enhancing softwood and hardwood plantations site productivity and subsequent operational efficiency by use of an innovative clean-row establishment 'system'

Dr Jim O'Hehir¹, Professor Anthony Finn², Mr Braden Jenkin³

¹UniSA, Mount Gambier, Australia. ²UniSA, Adelaide, Australia. ³Sylva Systems Pty Limited, Warragul, Australia

Abstract: This presentation will report the results of radiata pine and bluegum plantation establishment trials in South Australia, Victoria and Queensland

using new technologies/systems: a V-rake combined with a coulter wheel system to create a clean-row of exposed and tilled soil for planting into. The harvest residues from the previous crop are concentrated in the adjacent row over the inter-row. The trials extend across 7 sites.

Management of harvest residues can improve productivity, site moisture and enhance the efficacy of all other components of establishment. Managers seek these benefits while creating a safer working environment.

Expected benefits:

- Reduced trip and jarring hazards for planting contractors.
- Maintaining and potentially improving site productivity by better management of nutrients and soil moisture.
- A more uniform plantation with enhanced survival and initial tree growth that better expresses the crops genetic potential.
- A reduction in time between harvest and re-establishment by negating a need to allow harvest residues to dry-out with a parallel reduction in time to harvest of the next crop.
- A better allocation of costs between the other elements of establishment, with a potential for overall savings in total establishment costs.
- Meetings of obligations under certification to sustainably manage sites and make less use of chemicals.

This project has used the latest in drone-based scanning platforms for the 100% assessment of the sites, residues and seedlings. This technology allows high precision analysis of the planting unit scale treatments in a way that has not been possible previously with in field assessments.

Presenter: Dr Jim O'Hehir has spent 40 years in the plantation forest industry, beginning in 1984 with the Woods and Forests Department/Department of Primary Industries and later at ForestrySA in executive and senior technical roles, and Board and Chair positions at Tree Breeding Australia. General Manager Forest Research at UniSA in 2018 and Forestry Centre of Excellence in 2024.

Jim has qualifications in forest science, including a Bachelor of Science (Forestry) from ANU and a Master of Forest Science and PhD from the University of Melbourne.

Effect of moisture content and temperature on the bending and shear properties of in-grade sawn timber

Professor Rameez Rameezdeen, Dr Yingwei Liang, Abbas Abbara, University of South Australia, Adelaide, Australia

Abstract: The effects of moisture content and temperature on the structural properties of clear wood are well understood. However, studies examining these effects on in-grade timber boards remain limited. This study aims to provide a comprehensive understanding of how temperature and moisture content, within the range of Australian climates, influence the structural properties of in-grade timber boards (*Radiata Pine*). With broader climate extremes and increasingly hotter summers predicted for the future, a key concern is how Australian buildings will withstand these conditions. This study simulates the performance of timber boards in structural applications under such extreme environmental conditions. Two environmental conditions will be evaluated (hot-dry and hot-wet), with results compared to a reference group maintained at 23°C and 50% relative humidity (RH). The modulus of elasticity (MOE) and bending strength (MOR) of the timber boards will be determined through four-point bending tests, while three-point bending tests will be conducted to assess the flexural shear strength of the sawn boards. The findings of this study will provide insights into the impact of environmental conditions on the structural properties of in-grade timber, which will also help in identifying the optimal conditions for timber performance.

Presenter: Rameez Rameezdeen is a Professor at the University of South Australia's (UniSA) STEM academic unit and an active researcher at the Centre for Sustainable Infrastructure and Resource Management (SIRM). He leads SIRM's timber research facility at UniSA's Mawson Lakes campus. Rameez has developed an internationally recognised profile in sustainable construction, timber characterisation, circular economy and reverse logistics. He is currently investigating the most efficient ways to recover value from softwood-sawn products for the forestry industry through projects funded by FWPA, NIFPI, GRAC and AFWI.

BREAKOUT #12 – Innovation in wood products

Engineered wood products for Australian domestic consumption

Jeffrey Morrell, University of South Australia

Abstract: This presentation will briefly discuss the current state of engineered wood products (EWP's) in Australia, potential pathways for upgrading our existing timber resource, the new developments in mass timber construction and the future opportunities for these materials. Australia has long been a net importer of timber products, but it also has a substantial plantation resource. Interestingly, much of the imported timber enters in the form of engineered wood products (EWP's), while domestic production has largely concentrated on timber framing. Both

products are essential for addressing Australia's housing shortage, but EWP's provide opportunities to add value, use materials from smaller trees, and create more innovative products with our existing resource.

EWP's are not new to Australia but domestic production fell off markedly in the early part of this century due to a combination of resources that could not meet the engineering needs and offshore competition. Recently, we have begun to see a shift in this process, led by the increasing use of mass-timber in buildings. Mass timber products include laminated veneer lumber, glue-laminated timber, cross laminated timber and mass plywood. All of these products allow timber to be used in mid-to high rise structures that were formerly the domain of steel and concrete. These developments have come at a time when architects and engineers are working to reduce their carbon footprint. Carbon neutral timber offers a tremendous opportunity to accomplish that goal with an attractive, renewable, and easily worked material.

Presenter: Jeffrey Morell is Director of the Forestry Centre of Excellence at the University of South Australia. He holds a PhD in Forest Pathology and Mycology from the State University of New York and spent 35 years directing the timber durability program at Oregon State University before spending five years as Director of the Centre for Timber Durability and Design Life at the University of the Sunshine Coast. He has broad interest in enhanced timber utilisation.

Big picture, wood products and trees, what is the market demanding?

Christine Briggs, *WoodSolutions Timber Framing Campaign*

Abstract: Big picture and a big topic in 15 minutes! Christine will cover generic B2B market wants, what decades of customer market research has revealed for timber markets.

The presentation will also outline a map of the softwood market from sawnwood product mix, through channel customer mix and to end use application segments.

This map will highlight the importance and value of knowing your customers' customers and provide some insights for forest growers on this with timber fabricators, as well as for sawmillers with home building companies.

Timber framing, for which she currently manages a promotional campaign for FWPA under the WoodSolutions program, will be used as an example of some of the above aspects. That is, what the framing market wants, the map to market, the customers' customers i.e. builders and end user wants. It will also outline the steel framing threat and the reasons for their success with ongoing long-term share growth.

For foresters, she hopes the topic will highlight the complex and sometimes fragmented supply

chain that flows from forest to frame and how more collaboration will enable more shared value discovery for forestry and timber markets to be sustainable, secure and growing.

Presenter: Christine Briggs has had a 3-decade long career in our industry, having held GM roles in marketing with the major Australian softwood sawmillers, starting at CSR, then Weyerhaeuser, Gunns, Timberlink and AKD. Her leadership experience covers change management, culture and brand alignment, team and people development, strategic planning, stakeholder engagement, marketing and supply chain strategy.

Christine transitioned in 2023 from her exec career to a combo of being the principal now of her own consulting business, as well as a Board career. She has 12 years of Director experience to date including FWPA for 9 years until 2023. She is currently a director on two industry Boards - Responsible Wood and AFWI (Australian Forest and Wood Innovations).

She is passionate about our industry brand being known for sustainability and strongly believes two key ingredients for this are collaborative innovation and workforce diversity in all its aspects.

Suitability of Victorian plantation-grown eucalypts for rotary veneer production

Ms Joanne Lewis¹, Dr Robert McGavin², Dr Benoit Belleville¹, Dr Rodney Keenan¹

¹*University of Melbourne, Melbourne, Australia.*

²*Queensland Department of Primary Industries, Brisbane, Australia*

Abstract: The supply-demand gap in the Australian structural timber market could be mitigated by engineered wood products manufactured from hardwood plantation grown veneer. Studies have shown that small diameter log resources that are not suited to conventional sawing, such as thinnings from hardwood plantations, could be utilised more efficiently by being peeled using spindleless lathe technology. This technology has been proven internationally, however there has been little exploration of processing Victorian hardwood plantation species using this method.

This study investigates the suitability for rotary veneer production of three plantation species (*Corymbia maculata*, *Eucalyptus muelleriana*, *E. botryoides*) across two site types (Gippsland Plains, Strzelecki Hills) and a range of age classes (9.5 – 17.5 years). Tree characteristics such as diameter, taper, sweep and branching were assessed for their likely influence on resource utilisation. Green veneer recovery was estimated for different plantation types and utilisation scenarios; the best estimate being 53m³/ha (clearfall).

Recoveries at the lathe ranged from 48 – 66% (plantation averages). Better performance was evident for sites exhibiting lower taper (hill sites at higher stocking) and species exhibiting less sweep (Spotted

Gum). Branch geometry thresholds of acceptability were estimated that correspond with knot width grade thresholds in the Australian structural plywood standard. Estimated branch diameter thresholds ranged from 20–60mm for A-D grade veneer (live branches), and 10–40mm for dead branches. The study can be used to inform the management of plantations for peeler log production, and to assist processors in the adoption of spindleless lathe technology.

Presenter: Joanne Lewis holds Bachelor degrees in Forest Science & Environmental Science from the University of Melbourne, where she is currently a Master of Philosophy candidate. Her research explores whether Victorian hardwood plantations will be a suitable feedstock for rotary veneer production using a spindleless lathe. Adoption of this technology could improve utilisation of small-diameter timber resources in Australia whilst also enhancing the return on investment for long-rotation plantations. Jo has experience in hardwood sawlog plantation management in Gippsland, Victoria, and South-East Queensland, and is enthusiastic about advancing silvicultural strategies that help realise better value in the Australian hardwood plantation estate.

Managed blue gum plantations processed into high-value solid timber products

Jon Lambert, Heartwood Unlimited

Abstract: Blue gum (*Eucalyptus globulus*) has been grown commercially in southern Australia for decades. Primarily introduced as a species for rapid growth, light colour and high pulp yield, blue gum's sawn timber value has often been questioned.

Heartwood Unlimited has been managing blue gum plantations for sawn timber over the last 25 years. Some of these plantations have recently been harvested and processed by Radial Timber Australia into a range of solid wood appearance products. This includes green products such as board and baton and dry products such as lining boards.

This presentation provides information on growth performance, timber recovery, timber quality, and market response to these new products.

Presenter: Jon Lambert is a forest scientist who has worked across Australia and internationally including receiving a Churchill Fellowship in 2004 to Europe and undertaking extensive development work in Africa.

Jon is presently the Managing Director of Heartwood Unlimited, based in Gippsland Victoria. Heartwood is Victoria's foremost agroforestry company established in 1995, managing 2,500 hectares of hardwood sawlog plantations in combination with livestock, carbon and conservation enterprises.

Jon is also the founder of the charity Beyond Subsistence (2008), co-founder of the Australia and New Zealand Durable Eucs Growers Forum (2018), and a recipient of the Gottstein Fellowship in 2022.

BREAKOUT #13 – Restoration: the role of native forest silviculture

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Re-creating healthy forests – silviculture's role in restoration

Michelle Freeman, Forestry Australia

Abstract: 'Healthy forests' is an appealing and, on face value, intuitive concept. However, this intuitiveness quickly dissolves when we realise that a 'healthy forest' not a single end state but a set of ecological, cultural and social functions and relationships shaped by people's values and beliefs. Australia is now in the thick of grappling with these issues as forest policy decisions open new opportunities, while climate change compounds disturbance and drives ecosystem change. Drawing on the literature, I discuss definitions of healthy forests and how the interplay between disturbance and resilience can shape how we go about maintaining or restoring them. Silviculture, as the art and science of caring for forests, provides a toolkit for active, intentional management that can renew heterogeneity, reduce risk and grow the next cohort in ways that fit place and purpose. I outline some key silvicultural interventions and promote approaches to monitoring that ensure success is evidenced, not assumed. As forest managers, our goal should be to define a transparent pathway from values to interventions to measured learning that answers to a clear vision for forests. The time is now to modernise Australia's forest policy and practice to ensure healthy forests, embracing silviculture as a key restoration tool.

Presenter: Dr Michelle Freeman FFA GAICD is a forest scientist, a Registered Forestry Professional, and President of Forestry Australia. She is a Commissioner with the Australian Centre for International Agricultural Research, a Director of FWPA, and has worked in research, regulation, operations and governance of native forests. Her PhD with the University of Melbourne and CSIRO examined Tiwi Islands savanna fire and carbon. Integrity, compassion, and open engagement are at the core of Michelle's values. She now leads Calyx, a boutique consultancy that links science with practice to support ecological forest management, policy and evidence-based advocacy and community outcomes.

A history of the thinning of regrowth forests in Victoria, can this guide ecological thinning

Michael Ryan, *Department of Energy Environment and Climate Change Action*

Abstract: Thinning has been a key silvicultural tool in Victoria's forests and continues to be used nationally and internationally in natural forests and plantations. In Victoria, the primary objective of thinning had traditionally been to achieve desirable tree growth objectives for future timber production. However, thinning has also been implemented with the intent of achieving other objectives, including increasing water yield, producing minor forest products such as firewood, reducing fuel hazard and delivering ecological outcomes such as accelerated development of older tree characteristics. Given the extensive area of post wildfire and post timber harvesting regrowth there is renewed interest in how silvicultural practices could be targeted towards achieving ecological outcomes rather than stand improvement from a timber production focus. There is a need to understand where practises such as thinning can achieve positive outcomes, where they will be less effective and where they need to be avoided. This information can support policy, strategy and operational delivery for multiple values. Here, I summarise the history of thinning in Victoria and the rationale for it being undertaken. I examine where there have been key trials and discuss the outcomes with respect to the challenges and opportunities for future work in four specific areas 1) Wildfire damage mitigation 2) carbon sequestration 3) faunal habitat and 4) Water yield.

Presenter: Michael Ryan is a Forest Ecologist with the Victorian Government Department of Energy Environment and Climate Change Action. He has an extensive career in native forest silviculture and how this can be modified to achieve other forest land management objectives. Michael's nocturnal work has focussed on whether changes in management practices permit persistence of key fauna species and how this changes with time. In his fire role Michael works as a fire behaviour analyst.

Determining carbon outcomes from silvicultural treatments in private native forests on the NSW north coast

Ms Jessica Sheehan, Dr Fabiano Ximenes, *NSW DPIRD, Sydney*

Abstract: Private Native Forests are expected to have added pressures placed on them to meet Australian timber demands. High grading over the years has left forests depleted of quality stands, where high competition is evident, and defective stems are utilising space and resources. There are currently limited incentives to manage these areas with long-

term planning of resources in mind, and knowledge gaps on how to accomplish this. Landholders may be unaware of their management options, unversed in the available markets for classically non-merchantable materials or have no financial incentive. Although there are options under the Australian Carbon Credit Units (ACCU) Scheme for landholders to participate in the carbon market via conservation-based projects, there are no options which involve continued production objectives. Availability of carbon revenue may provide extra incentives for private native forests to be managed to achieve a variety of different outcomes.

This project aims to determine carbon outcomes following silvicultural treatments where either Australian group selection (AGS) or thinning regimes are being trialled. The carbon implications of biomass use following treatments will be quantified. These will include traditional markets (e.g. firewood) and emerging options such as biochar and liquid biofuels. Plots will be monitored long term, with carbon stocks in various pools monitored over time. In this presentation we will be discussing preliminary results following the implementation of treatments across a range of sites on the NSW North Coast.

Presenter: Jessica Sheehan has been working in the Forest Carbon group from DPIRD for over five years, with involvement in a variety of research projects in both plantations and native forest systems. Primarily, implementing research trials and offering technical expertise in both field and laboratory procedures to inform carbon outcomes. This work covers wood science, derivation of allometric equations for estimating biomass, biomass for bioenergy, and more.

Recovering Ash forests in the post-timber harvesting era. Why an innovative solution is needed

Mr. Owen Bassett¹, Dr Thomas Fairman²

¹*Forest Solutions Pty Ltd, Benalla, Australia.* ²*FLARE Wildlife Research Group, University of Melbourne, Parkville, Australia*

Abstract: Alpine Ash forests are an iconic forest ecosystem in SE Australia, and have been severely impacted by frequent, extensive bushfires in Victoria since 2003.

These fires, with severe intensities following drought, have reburnt the landscape at intervals shorter than the reproductive age of Alpine Ash, leading to localised population collapses. Following these fires, the extent of surviving mature-age forest has shrunk, while the area of young regrowth at risk from future bushfires has increased.

Alpine Ash forest in Victoria is therefore under threat, representing a major forest management challenge. Forest managers from the State government, private and academic sectors have partnered to develop systems and processes designed to reduce risk, identify damage post-fire, and recover the Ash forests predicted to imminently collapse.

SPEAKERS AND ABSTRACTS

During these last two decades, an aggregate 50,000 ha of young fire-killed regrowth on the brink of collapse has needed our active management to recover. Using systems and silvicultural techniques developed and refined as each fire occurred, these forest managers have successfully recovered half of this extent. However, the other half will likely collapse in localised patches across Victoria's Alps, highlighting the extent and seriousness of the challenge.

Although we now have more knowledge with advanced systems of recovery in place, *further development is needed to increase the proportion saved and/or prioritise areas to save*. Our poster presents the recovery process currently used, and highlights the ongoing challenges and need for further development to team capability, funding initiatives, seed collection capacity and seed delivery systems.

Presenter: Owen Bassett (*B.For.Sci. Melb.*), MFA is the founding Director of Forest Solutions Pty Ltd, a private consultancy providing ecology and silvicultural services to organisations managing native eucalypt forests. Owen has had a leading role in the recovery of Ash forests since the 2003 Alpine fires, managing Victoria's Tactical Silviculture Specialist Unit to undertake post-fire damage assessments. In the early 1990s he began what is today the world's longest annual floral monitoring program, enabling the forecasting of Ash flowering events and availability of seed in forest canopies for its collection and use in forest recovery.

BREAKOUT #14 – First Nations approaches to forest and landscape restoration

Walking together: Building a new future for forestry with Traditional Owner

Thomas Holden, Warrgamay Traditional Owner & Nirrwara Global

Abstract: The Australian forestry sector is invited to embark on a new journey of collaboration and shared responsibility with First Nations peoples. Language Lines, Songlines, Creation Stories, Trading Routes, and Lore offer a deeper cultural framework for understanding and managing Country – and how this knowledge can meaningfully enrich forestry practices today. Partnerships with Traditional Owners empowered as co-managers, innovators, and equity participants in forestry and land-based enterprises will set the stage for forest and landscape restoration.

Four key themes will be presented that provide foundation to restoring forests and landscapes and securing Australia's future jointly with First Nations

People. Embedding Free, Prior and Informed Consent (FPIC), adopting FPIC as a foundational principle ensures that Traditional Owners are genuinely informed and involved in decisions affecting their land, resources, and cultural heritage, embedding this standard across the forestry sector fosters trust, transparency, and ethical engagement; Integrating Traditional Ecological Knowledge (TEK), the inclusion of TEK enhances forestry science, planning, and operations by drawing on generations of deep ecological understanding, integrating this knowledge system alongside Western science supports more sustainable, culturally-informed, and locally responsive forest management practices; Creating pathways for Indigenous employment, ownership, and leadership, building employment and leadership pathways across the forestry value chain empowers Indigenous people to participate meaningfully—whether as workers, business owners, or decision-makers, these pathways strengthen community development and foster economic independence; Advancing reconciliation and self-determination, the forestry sector has a vital role to play in reconciliation by actively supporting self-determination, this means moving beyond consultation to true collaboration, where Traditional Owners lead the conversation on how Country is cared for and how benefits are shared. Additionally, forestry leaders need to embrace walking in step with Traditional Owners Respecting cultural protocols and Indigenous governance structures is essential to building strong, meaningful partnerships.

Walking in step with Traditional Owners honours their authority, connection to Country, and right to guide how forestry activities intersect with their cultural landscapes, and Unlocking opportunities for Indigenous-led forestry innovation, there is growing potential for Traditional Owners to lead forestry innovation, particularly in areas like biodiversity credits, carbon markets, and culturally driven land restoration. Supporting Indigenous-led enterprises helps unlock economic, cultural, and environmental value. When combined and incorporated into restoration planning, these themes can secure the future for Australia's forests. This is a call to action: to walk together, not behind or ahead, and to build a forestry future grounded in respect, reciprocity, and shared stewardship.

Presenter: Thomas Holden is a respected Warrgamay Traditional Owner and community leader based in Townsville, Queensland. He is CEO and Co-Founder of Nirrwara Global, a First Nations-owned company advancing Indigenous-led sustainability and cultural governance initiatives across Northern Australia.

Thomas also serves as Chairperson of both the Warrgamay Traditional Owners Aboriginal Corporation RNTBC and Girringun Aboriginal Corporation, representing nine tribal groups in North Queensland. His work bridges Traditional Owner knowledge with modern environmental and ESG frameworks, focusing on cultural heritage protection, Indigenous economic empowerment, and sustainable land and sea management.

Showcasing the Restoration of the Mungalla Wetlands – Healing Country, Reviving Culture

Jacob Cassady, *Nywaigi Traditional Owner & Mungalla Station*

Abstract: This presentation highlights the transformative journey of the Mungalla Wetlands Restoration Project on Nywaigi Country in North Queensland. Once degraded by decades of colonially imposed land use and invasive weeds, the wetlands have been revived through a groundbreaking partnership between the Nywaigi Traditional Owners, environmental scientists, and government agencies. Led by Jacob Cassady and the Mungalla Aboriginal Business Corporation, this project has successfully removed invasive ponded pastures, restored vital freshwater ecosystems, and reconnected the land to tidal flows. The result is a thriving wetland now supporting over 229 bird species, native fish nurseries, and improved water quality flowing to the Great Barrier Reef. Beyond environmental impact, the project has empowered Indigenous-led

land management, supported youth employment and training, and become a model of cultural and ecological restoration. This session will explore the science, the story, and the spirit behind the healing of Mungalla Wetlands.

Presenter: **Jacob Cassady** is a Senior Nywaigi/Manbarra Man, Environmental Steward, and Cultural Educator. And a Nywaigi Traditional Owner and the Managing Director of Mungalla Station, an 880-hectare property near Ingham, Queensland. Under his leadership, Mungalla has transformed from a degraded cattle station into a thriving hub for ecological restoration, cultural education, and Indigenous empowerment.

Born and raised in the Herbert River district, Cassady is the eldest of nine children. His deep connection to the land is both ancestral and personal—he is a descendant of Tambo, a Manbarra man who was taken to the United States in the 1880s to perform in Barnum and Bailey's circus. Tambo's remains were repatriated and buried on Palm Island in 1994, a story that Cassady shares through exhibitions at Mungalla Station.



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Breakout #15 – Innovation in forest management | FWPA Forest Growers' Research Program

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Optimising the productivity of hardwood plantations in southern Australia

Dr John McGrath^{1,2}, Dr Tom Baker³, Dr Philip Smethurst⁴, Mr Ian Dumbrell⁵, Dr Barrie May⁶, Dr Danielle Wiseman⁷, Dr Daniel Mendham⁸

¹MFS, Perth, Australia. ²Murdoch University, Perth, Australia. ³Uni Melbourne, Melbourne, Australia. ⁴PJS Consultants, Hobart, Australia. ⁵MFS, Busselton, Australia. ⁶TreeMod, Melbourne, Australia. ⁷WAPRES, Bunbury, Australia. ⁸CSIRO, Canberra, Australia

Abstract: The "yield gap" refers to the difference between the actual yield and the potential yield that could be achieved under optimal conditions. Understanding the factors limiting yield provides managers with the knowledge to make decisions about the location and management of plantations. Optimal yield in plantations by was derived by (i) estimating potential wood yield, (ii) determining the main causes of differences between potential and actual yield, (iii) determining the management options to reduce gaps.

From trial and inventory data, water supply and temperature were identified as the primary limitations to yield. Rain-limited potential yield varied about 180–380 m³/ha at age 10 years across 600–1200 mm and productivity was lower in colder areas.

For planted *E. globulus* on former agricultural land, the yield gap was up to 150–200 m³/ha, largely due to low nutrition. Responses to nitrogen fertiliser were up to 150 m³/ha, with smaller effects from soil depth, weed competition and stocking.

As nutrition was the main limitation to optimum yield, responses to fertilization were investigated with key findings:

- Phosphorus and K applications generally appear unnecessary on ex-agricultural sites.
- Applying 200 kg N/ha increased yield on many sites. Responses to mineral N last between 3–5 years and maintaining N supply resulted in high growth rates across the rotation.
- Strongest responses to nitrogen were observed on relatively warm wet sites with lower responses on colder (Tasmanian) sites.

The APSIM process-based model and the fertilizer prediction tool ProFert are being calibrated to deliver this knowledge to managers.

Presenter: Dr John McGrath has nearly 50 years experience in ecophysiological research in plantation and farm forestry species (broadleaf and conifers) across Australia. This work has focussed on understanding the climatic, soil, water, and nutrient limitations to tree growth across Australia. This has provided an understanding of the strategies required for the effective management of plantations and tree crops for a range of products and has led to improved silvicultural practices for timber plantations and tree crops.

Plantation water use and availability across a topographically complex catchment area

Dr Nina Hinko-Najera¹, Mr Toby Alker-Jones², Dr Tarryn Turnbull³, Dr Philip Noske⁴, Dr Richard Benyon⁴, Professor Patrick Lane⁴

¹University of Melbourne, Creswick, Australia. ²HVP, Benalla, Australia. ³HVP, Churchill, Australia. ⁴University of Melbourne, Parkville, Australia

Abstract: Productivity and survival of forest ecosystems, including planted forests, are at great risk from the predicted hotter and drier climate in southern Australia. *Pinus radiata* plantations are an important economic component in the forestry sector and extensive across southern Australia. Current management practices and stocking densities might not comply with future available resources and thus, better understanding is needed of how to maintain plantation productivity with decreasing water availability.

In this study rigorous plot-scale water use (transpiration) and soil moisture observations with variable plant available water (PAW) measurements across variable stocking densities and along a natural gradient of soil depth and micro-climate within a topographically complex catchment area is used to quantify interactions and improve understanding between spatially varying water stores, stand water use and growth dynamics. This will allow to parameterize a forest growth model to optimise productivity-water use dynamics under varying water availability to ensure productivity.

Presenter: Nina Hinko-Najera is a Research Fellow within the School of Agriculture, Food and Ecosystem Sciences at the University of Melbourne. Her primary research interests are in forest carbon dynamics from carbon flux processes at stand level to carbon stock distributions at landscape level, their temporal variability and vulnerability under climate change. She is part of TERN-OzFlux and the management of EC-flux towers, of a collaboration on biocultural monitoring of traditional owner led forest management, recently worked on forest windthrow severity mapping and currently working on pine plantation water use dynamics.

IoT Acoustic Detectors for Proactive Monitoring of Threatened Forest Fauna in Remote Environments

Dr James Montgomery¹, Dr Saurabh Garg¹, Dr Marie Yee², Dr Ananda Maiti³, Professor Michael Charleston¹

¹University of Tasmania, Hobart, Australia.

²Sustainable Timber Tasmania, Hobart, Australia.

³Deakin University, Melbourne, Australia

Abstract: Sustainable forest management requires monitoring of the effectiveness of land management activities to adapt practices and ensure the safeguarding of Australia's natural heritage, including threatened fauna. In recent years, passive acoustic monitoring has become an important supplement to field surveys in threatened species monitoring. However, deployments of acoustic recorders are typically short, sometimes requiring multiple site visits to replace batteries and collect recordings, and back-at-base analysis, which can result in lengthy delays in deriving key information to inform management decisions. At the same time, many monitoring sites are not covered by high-bandwidth cellular networks, precluding timely transmission of acoustic data for analysis.

What is required are Internet-of-Things (IoT) acoustic devices that perform species identification onboard using machine learning tools, and which can transmit summaries of those detections using low-power wireless technologies such as LoRaWAN. We will present current progress of an ongoing project that aims to develop devices that are suitable for a sensor network with long deployment capabilities, with targeted detection goals focusing on threatened species: swift parrot presence, breeding activity, and threats; wedge-tailed eagle breeding activity; masked owl presence; koala presence; yellow-bellied glider presence; and early detection of potential illegal wood harvesting. This forms the basis for future deployments covering more species.

The project is a collaboration between the University of Tasmania, Sustainable Timber Tasmania, Forico, and HVP Plantations, with direct involvement of relevant government agencies including Natural Resources and Environment Tasmania and Department of Primary Industries NSW. This project is supported by an FWPA RD&E grant.

Presenter: Dr James Montgomery is a Senior Lecturer in the School of ICT at the University of Tasmania. His research spans optimisation, machine learning and ecoacoustics, which is the application of acoustic analysis to perform ecological monitoring. He is currently leading a team at the University of Tasmania in an FWPA and industry-funded project to develop of IoT devices to remotely detect threatened forest fauna.

Advancing Eucalyptus Breeding for Disease Resistance: Tools for Managing Teratosphaeria Leaf Disease

Dr Bala Thumma, Diversity Arrays Technology, Canberra, Australia

Abstract: This project aimed to develop practical tools for managing Teratosphaeria leaf disease (TLD) and to integrate these tools into breeding programs to improve disease resistance in *Eucalyptus* plantations. TLD is a major threat to Eucalyptus forests in Australia, particularly affecting the species *Eucalyptus globulus* and *Eucalyptus nitens*, with the potential for greater damage due to climate change. By focusing on breeding *Eucalyptus* trees that are naturally more resistant to TLD, the project developed improved methods for identifying resistant trees. Building on previous research, we used advanced genomic techniques to discover DNA markers that are linked to TLD resistance. These markers were then used to predict which trees are most likely to have the best resistance, making the breeding process faster and more accurate. The project's main achievement was the creation of reliable tools for routine screening of *Eucalyptus* trees, which will help improve the long-term health of plantations and provide a model for managing other plant diseases.

Presenter: Dr Thumma has over 30 years of experience in molecular genetics and forest genomics, specialising in marker discovery, genomic selection, and trait association studies in Eucalyptus. He spent 13 years at CSIRO focusing on forest tree genetics before leading the development of a targeted genotyping platform at Gondwana Genomics. Following its acquisition by DArT in 2024, Dr Thumma became Principal Scientist at Diversity Arrays Technology, where he leads forest genomics initiatives. He has published extensively in genomic prediction and tree breeding integration.

Breakout #16 – Restoration approaches in the Asia Pacific

Insights from the implementation of a large-scale forest restoration project funded through carbon credits

Professor John Herbohn, Associate Professor Grahame Applegate, Dr Claudia Romero, Dr Liz Ota, Dr Nestor Gregorio, Dr Dora Carias, Dr Alexandra Catling, Dr Adriana Vega, Dr Robert Fisher, Dr Nick Kokkas

University of the Sunshine Coast, Sippy Downs, Australia

Abstract: Project Tarsier is a forest restoration project being implemented in the Philippines funded through the generation of carbon credits. The project involves working with communities to restore degraded grassland areas through reforestation. The project commenced in February 2022 and to date, has partnered with around 20 communities. The communities involved each hold tenure over the lands through Community Based Forestry Management Agreements which also provide them with ownership of the carbon generated. In this paper, we outline the key elements of project include the planting systems being implemented, role of key stakeholders and the challenges that have been faced. A discussion of how the policy environment within the Philippines has impacted on the project is also discussed.

Presenters: Professor John Herbohn is an experienced forestry researcher with substantial practical forest industry experience. He is an international expert in small-holder and community forestry systems, especially in the Philippines where he has led collaborative projects with Filipino counterparts for over 25 years. He has substantial experience in establishing and leading large multi-disciplinary teams, including being the Foundation Director of the both the University of the Sunshine Coast Forest Research Institute (FRI) and the Tropical Forests and People Research Centre. He has 12 years of corporate strategic leadership experience as a non-executive company director of two large NZ forest management companies.

Claudia Romero has a foundation in tropical ecology with emphasis on applied interdisciplinary research. Major focus on conservation and development tradeoffs related to land-use change and natural resource management. Long-standing relationships with key actors in forest conservation and policy stakeholders in several countries. Expertise in the evaluation of conservation interventions informed by familiarity with regional and national policies as well as with regulatory issues including measures designed to tackle illegal resource use. Additional experience in coordinating multi-disciplinary research on the evaluation of incentives to enhance tropical forest conservation, improve local livelihoods, and minimise climate change threats.

Trajectories of forest recovery with *Acacia mangium* in the Philippines: what made it a successful story

Jenny Vivian, Alexandra A. Catling, Alison Shapcott, Robin Chazdon, David J. Lee

University of the Sunshine Coast, Sippy Downs, Australia

Abstract: Tropical forest restoration is fundamental to ensure the future of countless species and the livelihood of numerous anthropic communities. Seeking a win-win situation, projects aiming to re-establish ecosystem services of tropical forests

often considered the plantation of economically valuable fast-growing trees to provide economic and environmental benefits. In this context, *Acacia mangium* has been extensively used for reforestation and support of local communities, given its ability to cope with harsh conditions. However, this characteristic has made it an invasive species in many places in the tropics. Nevertheless, recovery of the historical above- and belowground forest conditions can be achieved with this species, as demonstrated by our study in the Philippines. But what made this success possible? What was different from the other places in which *A. mangium* became invasive? Focusing on the environmental conditions, we investigated the fundamental characteristics and actions needed to increase the probability of forest restoration success with *A. mangium*. We observed that management practices and natural and anthropogenic disturbances determine the failure or success of a restoration project with tree species having similar traits, along with the topographical setting and the ecological traits of the tree species living within the analyzed landscape. Our analysis can guide future actions for a successful forest restoration project, which considers both the amelioration of the ecosystem to re-establish its historical conditions and the economic needs of local communities.

Presenter: Jenny Vivian is a PhD candidate at the University of the Sunshine Coast (Australia), working on tropical forest restoration and biodiversity conservation. She obtained a Bachelor's degree in Environmental Sciences (University of Ca' Foscari, Italy), and a Master's degree in Ecology and Ethology for Nature conservation (University of Parma, Italy), to build her knowledge and passion for natural ecosystem conservation and dynamics. She combined these studies by attending summer schools in Poland, and Spain, workshops, and conferences, sharing her research outcomes while engaging in networking. Experiencing different cultures, she integrated her academic knowledge with social and management skills.

Overcoming Challenges in Assisted Natural Regeneration for Forest and Landscape Restoration: Insights from the Philippines

Tomiwa Oluwajuwon, Professor Robin Chazdon, Dr Nestor Gregorio, Dr Liz Ota, Professor John Herbohn

Forest Research Institute, University of the Sunshine Coast, Sunshine Coast, Australia

Abstract: Forest degradation and deforestation pose significant challenges globally, threatening biodiversity, ecological functions, and the livelihoods of rural communities. Various Forest and Landscape Restoration (FLR) initiatives have been introduced to address these issues, including Assisted Natural Regeneration (ANR)—a set of low-cost interventions to accelerate natural recovery and enhance ecological

functionality in degraded forest landscapes. Despite its recognised benefits, the implementation of ANR in FLR projects has been limited and largely unsustainable, undermining its potential impact. Using a case-study methodology and a mixed-method qualitative survey approach, this study examines the challenges associated with ANR implementation across multiple socio-ecological and policy dimensions in the Philippines and proposes actionable solutions. We categorised the key barriers to ANR into eight major themes. The most critical obstacles include short-term and insufficient funding, limited livelihood integration, and environmental threats like forest fires and local community pressures. Moreover, the absence of sustainable protection and monitoring plans, weak policy and governance support and rugged terrain have substantially hindered the long-term viability of ANR. Current institutional policies, such as restrictions on native tree use, further constrain opportunities for integrating natural regeneration into broader FLR strategies. To enhance the effectiveness and sustainability of ANR in FLR initiatives, we recommend extending project timeframes, securing long-term funding, improving site protection and maintenance, integrating sustainable livelihood programs, and strengthening policy support and evidence-based advocacy by the government, restoration agencies, and NGOs to attract diverse financing mechanisms.

Presenter: Tomiwa Victor Oluwajuwon is a PhD student at the Forest Research Institute, University of the Sunshine Coast, Australia. His research focuses on forest restoration, ecology, and remote sensing, with an emphasis on Assisted Natural Regeneration (ANR) for enhancing tropical Forest and Landscape Restoration (FLR). He holds a double Master's in Sustainable Tropical Forestry from Bangor University, UK, and Dresden University, Germany, under the Erasmus Mundus Scholarship. His work integrates ecological and social dimensions of restoration, using field surveys and remote sensing. He is an ambassador for EverGreening Alliance and Youth4Nature, advocating for nature-based solutions and climate action.

Harnessing the problem as a solution: managing *Imperata* for reforestation in the tropics

Dr Alexandra Catling¹, Professor John Herbohn¹, Luiz Pereira¹, Professor Arturo Pasa², Professor Francis Putz^{1,3}

¹Forest Research Institute, University of the Sunshine Coast, Sunshine Coast, Australia.

²Department of Forest Science, Visayas State University, Baybay City, Philippines. ³Department of Biology, University of Florida, Gainesville, USA

Abstract: Low survival and growth of trees limits the success of reforestation projects and benefits provided by them to communities. Many target areas

for reforestation in the tropics have been exhausted by anthropogenic activity and are now dominated by prolific grasses which shade seedlings and increase effort needed for ongoing site maintenance. In a reforestation project in Eastern Visayas, Philippines, we tested approaches for managing *Imperata cylindrica* and their feasibility for up-scaling to maximise benefits from labour investment at the time of planting. We treated *Swietenia macrophylla* and *Pterocarpus indicus* seedlings with either 1 m diameter clear-cut ring-weeding, a wider cutting area (2 m diameter), or mulching using cut *Imperata* biomass. We also installed root barriers to measure the effects of *Imperata* on seedlings from below- and above-ground interactions. We found mulching effectively suppressed *Imperata*, reducing the number of resprouts and halving aboveground biomass present four months after planting compared to other approaches. Survival was high and heights were similar across treatments, but mulched seedlings had more aboveground biomass and twice as many leaves than those with cut grass only. From a cost-benefit analysis our study shows mulching is worthwhile for improved seedling growth using a freely available material that can be quickly implemented, and reduced future efforts locating seedlings for maintenance ring-weeding and drone-based monitoring that would otherwise be overtopped by *Imperata*.

Presenter: Dr Alexandra Catling has worked within the Forest Research Institute at the University of the Sunshine Coast as a Postdoctoral Research Fellow on a large-scale reforestation for carbon project since 2023. Her expertise is in understanding ecophysiological impacts of environmental change on plant communities. Her previous research focused on thermal tolerance and demographic responses to competition along water availability gradients in Australian eucalypt forests and wildflowers. Alex enjoys the transdisciplinary nature of community-based projects and working towards better outcomes for plants and people.

The design and implementation of a large scale reforestation project funded by carbon credits

Professor John Herbohn¹, Dr Claudia Romero¹, Dr Liz Ota¹, Associate Professor Grahame Applegate¹, Dr Nestor Gregorio¹, Dr Arturo Pasa², Dr Adriana Vega¹, Dr Alexandra Catling¹, Dr Dora Carias¹, Dr Nick Kokkas¹, Professor Jack Putz¹, Professor Robin Chazdon¹, Mr Luiz Pereira¹, Mr Calum McRae¹, Dr Robert Fisher¹, Dr John Meadows¹, Professor Jerry Vancley³

¹University of the Sunshine Coast, Sippy Downs, Australia. ²Visayas State University, Baybay, Philippines. ³Souther Cross University, Lismore, Australia

Abstract: Project Tarsier is a forest restoration project being implemented in the Philippines funded through the generation of carbon credits. The project involves working with communities to restore degraded grassland areas through reforestation. The project commenced in February 2022 and to date, has partnered with around 20 communities. The approach used within the project is novel and is potentially a model that can be applied more broadly. This session will explore in detail the following aspects:

- Project structure and financing
- Estate planning and monitoring using remote sensing including drones for identifying planting sites and monitoring performance
- Preparation of documentation associated with listing the project for carbon credits
- Opportunities and challenges in working with Peoples Organisations to undertake reforestation
- Sourcing germplasm for restoration
- Forest-based livelihoods and their role in supporting restoration
- Modelling tree growth and carbon yields
- Training and capacity building challenges
- The role of research in project design and guiding best practice
- The impact of national and international policy environments and the project
- Lessons learnt for the design of other project seeking to fund restoration via carbon credits

Presenters: **Professor John Herbohn** is an experienced forestry researcher with substantial practical forest industry experience. He is an international expert in small-holder and community forestry systems, especially in the Philippines where he has led collaborative projects with Filipino counterparts for over 25 years. He has substantial experience in establishing and leading large multi-disciplinary teams, including being the Foundation Director of the both the University of the Sunshine Coast Forest Research Institute (FRI) and the Tropical Forests and People Research Centre. He has 12 years of corporate strategic leadership experience as a non-executive company director of two large NZ forest management companies.

Claudia Romero has a foundation in tropical ecology with emphasis on applied interdisciplinary research. Major focus on conservation and development tradeoffs related to land-use change and natural resource management. Long-standing relationships with key actors in forest conservation and policy stakeholders in several countries. Expertise in the evaluation of conservation interventions informed by familiarity with regional and national policies as well as with regulatory issues including measures designed to tackle illegal resource use. Additional experience in coordinating multi-disciplinary research on the evaluation of incentives to enhance tropical forest conservation, improve local livelihoods, and minimise climate change threats.

Breakout #17 – Future silviculture Australian forests

Silviculture in Australia: The past 25 years, the next 25 years

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Patrick Baker, *University of Melbourne*

Libby Pinkard, *CSIRO*

Lachie McCaw, *Forestry Australia*

Sean Ryan, *PFSQ*

Dianne Patzel, *UniSA*

Tony Brown, *FCNSW*

Owen Bassett, *Forest Solutions*

Abstract: Silviculture is the practice of directing change in forest structure and composition to meet specific values. While forest dynamics – how trees grow, how they respond to disturbances, how stands develop – are relatively predictable, the social, economic, and environmental factors that influence forests are less so. Consequently, silviculture must remain a flexible discipline. This requires assessing where silviculture has been, where it might go, and the factors that have shaped these changes.

This symposium will explore how silviculture across Australia has changed over the past quarter century and how it may change in the next. The goal is to provide a broad overview of regional and national trends in silviculture and to understand their drivers. In Australia silviculture has evolved from relatively ad hoc selective harvesting to sophisticated whole-of-rotation management systems. However, evolving social and economic conditions have led to changes in silvicultural practices while creating opportunities for new ones. Changes in climatic conditions and fire regimes are reshaping the structure and composition of Australian forests. Advances in remote sensing and engineered wood products are revolutionising how we see Australia's forests and what we can do with the wood that they produce.

Silviculture in the coming decades will take place in plantations being established today and in native forests that have been or soon will be impacted by intense bushfires and drought-induced dieback. Anticipating these changes and adapting our silviculture to meet the many challenges that they will bring are necessary for forest management in Australia to remain relevant and resilient.

Presenters: **Patrick Baker** is a Professor of Silviculture and Forest Ecology and Director of the AFWI Centre for Climate-Smart Forestry at the University of Melbourne. His work focuses on understanding how and why forests change and how this knowledge can be applied to better manage forests in an uncertain world. He studied at Bowdoin College, Yale University, and the University of Washington. He was a post-doctoral fellow with the US Forest Service and The Nature Conservancy of Hawaii, an ARC Future Fellow (2013-16), and a Charles Bullard Fellow in Forest Science at Harvard University (2020-22).

Owen Bassett (B.For.Sci. Melb.), MFA is the founding Director of Forest Solutions Pty Ltd, a private consultancy providing ecology and silvicultural services to organisations managing native eucalypt forests. Owen has had a leading role in the recovery of Ash forests since the 2003 Alpine fires, managing Victoria's Tactical Silviculture Specialist Unit to undertake post-fire damage assessments. In the early 1990s he began what is today the world's longest annual floral monitoring program, enabling the forecasting of Ash flowering events and availability of seed in forest canopies for its collection and use in forest recovery.

Dianne Patzel is a Silviculturist at the University of South Australia based the Forestry Centre of Excellence in Mt Gambier and holds a Bachelor of Applied Science (Forestry) from Southern Cross University. She has 15 years of plantation forestry experience in both the Green Triangle and Western Australia in various company roles. Di has been working with the University of South Australia for the last 5 years managing the Green Triangle Forest Health and Biosecurity Program on behalf of nine plantation growers. She also supports and lead other research projects for FCoE/UniSA.

Tony Brown graduated from ANU Forestry in the mid 1990s, before heading to Tasmania. Learning his trade in both native and plantation forestry, Tony returned to the NSW mid north coast in the early 2000s for a few years in private native forestry. Several years managing the Tiwi forestry project provided a range of learning and education that can only be found in the wild tropics of the Northern Territory. Returning to NSW and joining the State Forest agency, Tony has since worked in cypress, red gum, forest inventory, remote sensing, and has for the past 5 years held the position of Forest Practices Manager for the Native Hardwood Division of FCNSW.

Nora Devoe is a professional forester and silviculturist who has worked in Africa, Latin America, the Asia-Pacific, USA, New Zealand and Australia in sustainable timber production, forest restoration, biodiversity conservation, and rural livelihoods. Her career has spanned the private sector, public policy, academia, and international development. She has a PhD in silviculture from Yale University.

Lachie McCaw is a Registered Forestry Professional (RFP). He has worked in forestry since 1980 and has experience in many aspects of native forest management including regeneration systems,

thinning of regrowth stands, ecosystem monitoring and bushfire science. His research interests include fire behaviour, climate and weather, and the role planned fire in sustainable land management. Lachie is also a private forest grower and manages a 15 ha family forest near Manjimup in southwestern Australia with plantings for pine sawlog, short rotation pulpwood and amenity values. Lachie has a Bachelors degree in Forest Science and a PhD in bushfire science.

Libby Pinkard is a forest scientist with a long history of researching the effects of silviculture and global environmental change on forest plantation productivity. She currently works for CSIRO, where she is a science lead for biodiversity and nature, including natural capital accounting and nature-related financial risk disclosures.

Sean Ryan has been involved or associated with forest management for more than fifty years. Over the last 25 years, he has focused on improving the management and productivity of the Private Native Forest resource in Queensland. He has been influential in the establishment and monitoring of permanent demonstration sites to monitor the rehabilitation of overstocked stands. In addition, he has coordinated the implementation of a comprehensive education program for landholders to improve their understanding of their forests and the capacity building programs to manage them.

Breakout #18 – First Nations approaches to forest and landscape restoration

Indigenous people working on Bunya Country

Adrian Bauwen, *Bunya Peoples Aboriginal Corporation (BPAC)*

Abstract: This talk discusses the importance of Indigenous people working on Country. There will be a discussion of the cultural approach to "seeing Country" and highlighting methods BPAC are employing to Care for Country. Additionally, I will touch on plant pathogens that are affecting our landscapes and how that impacts culture and communities focusing on significant cultural values such as Bunya pine (*Araucaria bidwillii*). Bunya pine is a significant cultural value to First Nations Peoples surrounding the Bunya Mtns area of SE Queensland and is currently under threat by *Phytophthora cinnamomi*.

Presenter: **Adrian Bauwens** is a forest health officer working for the Indigenous rangers at Bunya Peoples Aboriginal Corporation (BPAC). With a strong focus on plant pathogens and forest health, Adrian works with BPAC to incorporate cultural practices and view forest health from a cultural standpoint.

SPEAKERS AND ABSTRACTS

Care for Country silviculture projects

Ruth Langford, *Nayri Niara*

Abstract: Explore a vision where the pre-eminent Law in Australia is 'Law in Country'.

How do we co-create a pathway that unites ancient traditional knowledge of protecting the very natural systems that provide life, together with an economically and socially vibrant Forest industry.

With the progression of legal cases across the continent that are addressing historical injustices towards Aboriginal and Torres Strait Islander communities, Ruth will articulate what steps are needed for the Forest Sector to genuinely engage with and value the solution orientation of First Peoples.

Presenter: Ruth Langford / Tipruthanna : Yorta Yorta / Dja Dja Wurrung, born and continues to hold cultural responsibility in Lutruwita / Tasmania.

Drawing upon the cultural knowledge of her Yorta Yorta lineage and the Aboriginal community of Lutrawita / Tasmania, where she was born and continues to live with her family, Ruth has gained a reputation as a capable facilitator and coordinator of effective capacity building programs, which have as their guiding principles, Connection to Country, Community, Culture and the Sacred.

Founder of Aboriginal Social Enterprise, Nayri Niara, Ruth Langford has a diverse background in the Health/ Arts/Environment/ Social/ Justice/ Youth Work and holds a Masters in Indigenous Medicines Therapy. Ruth divides her time into projects that reflect her passion for uniting ancient traditions with contemporary innovation for the well-being of All-Beings.

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BREAKOUT #19 – Innovation in forest management | FWPA Forest Growers' Research Program

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PINT – A Program for Performing Survival Counts

**Professor Anthony Finn, Dr Phil Skelton,
Dr Jim O'Hehir, Dr Stefan Peters**

*University of South Australia, Mawson Lakes,
Australia*

Abstract: Seedlings represent an acutely vulnerable stage of a tree's life cycle. Historically, field surveys have been used to assess survival: a costly practice that is not without hazard. More recently, drone-based remote sensing strategies have been used. However, it is challenging to tackle the problem operationally or at scale using drones due to a combination of the diminutive size of young trees, an absence of distinctive morphological structure, and the quantity of data generated.

Moreover, monitoring needs can be site-specific and influenced by factors like plant maturity, local competing vegetation, substrate, and geomorphology. Successful conifer seedling detection techniques based on deep learning have been reported, but these approaches rely on extensive training data sets. In this presentation we discuss the PINT survival assessment software, which morphologically and spatially processes point clouds generated from drone-based imagery to detect healthy young *pinus radiata* and *eucalyptus* seedlings in plantations. The properties of the young trees, together with the likely locations of unhealthy or deceased ("missing") trees are also computed, as are the locations, distributions, and nature of weeds. PINT's seedling classification algorithm demonstrated precision and specificity in the region of 90 – 95%, with about 85% of missing/unhealthy seedlings shown to have been located within 1 m of their correct position. PINT allows practitioners to estimate reforestation costs more efficiently and inexpensively by offering a monitoring solution that is fine-resolution, rapid, scalable, and supports precision mapping. The software could potentially accelerate recovery of forest ecosystems with respect to their health, integrity, and sustainability.

Presenter: Anthony Finn is a Professor at the University of South Australia. He graduated from Cambridge University with a PhD in 1989 and has since published two books and around a three hundred book chapters, journal articles, conference papers, and research reports. From 2011–2019 Professor Finn was Director of the Defence and Systems Institute, prior to which he worked at the Defence Science & Technology Organisation for almost twenty years. Prior to joining DSTO, and while based at Cambridge University, Professor Finn worked as a research consultant for several large organisations in Europe.

Develop and validate rapid, high- throughput diagnostic protocols for forest biosecurity surveillance

**Dr Conrad Trollip¹, Dr Tongda Li^{2,3},
Dr Brendan Rodoni^{2,3}, Dr Angus Carnegie¹**

¹Forest Science, NSW Department of Primary Industries and Regional Development, Parramatta, Australia. ²School of Applied Systems Biology, College of Science, Health and Engineering, La Trobe University, Bundoora, Australia.

³AgriBiosciences Centre, Agriculture Victoria Research, Department of Energy, Environment and Climate Action, Bundoora, Australia

Abstract: Continued innovation in the field of environmental DNA (eDNA) analysis has transformed plant health diagnostics by presenting an opportunity for rapid, reliable and cost-effective biomonitoring that can be tailored to achieve species-specific identification, or alternatively, to monitor the presence of all species within a given environment. Importantly for forestry, these emerging techniques are well suited to address the need for rapid and dependable diagnostics in the face of increasing risks of invasion by exotic forest pests and pathogens and to address the decline in technical capacity available to Australasian forest health and biosecurity agencies. Our research aims were to validate molecular tools and standardise diagnostic protocols before operationalising the approaches within existing forest health and biosecurity surveillance frameworks. Here we report on the validation of species-specific assays targeting aerial

Phytophthora species, including *Phytophthora pinifolia*, *Ph. pluvialis* and *Ph. kernoviae*, as well as a strain-specific assay capable of identifying exotic strains of Myrtle rust. We then demonstrate our continued development of a metabarcoding pipeline tailored to forestry's high-priority pests and pathogens, and report on its implementation at high-risk sites in Sydney, New South Wales as part of the 2024–2025 Forest Watch Australia Program. Finally, we discuss future research priorities, such as pipeline development through iteration and reference database establishment, that are required to fully realise the potential of these transformational technologies for forest health management and biosecurity.

SPEAKERS AND ABSTRACTS

Presenter: Conrad Trollip is an early career research scientist working in forest health and biosecurity for the New South Wales Department of Primary Industries and Regional Development. His research priorities are primarily aimed at transforming pest and pathogen diagnostics to strengthen post-border surveillance and forest health biomonitoring across Australia's forest ecosystems. He is passionate about genomics, pathology, biological invasions and fungal taxonomy.

Assessing productivity and growth constraints in Eucalypt and Pine plantations for sustainable forestry in Tasmania

Dr Auro Almeida¹, Mr Peter Taylor¹, Dr Robert Musk², Mr Simon Cook³, Mr Jarrod Burn⁴, Mr Darryn Crook⁵, Mr Shaun Suitor⁶, Ms Jia Yi Chew⁷

¹CSIRO, Hobart, Australia. ²Timberlands Pacific, Launceston, Australia. ³Forico, Launceston, Australia. ⁴Private Forests Tasmania, Hobart, Australia. ⁵Reliance Forest Fibre, Launceston, Australia. ⁶Sustainable Timber Tasmania, Hobart, Australia. ⁷SFM, Hobart, Australia

Presenting author: Auro Almeida

Abstract: Productivity of eucalypt and pine plantations in Tasmania varies significantly due to environmental conditions, soil characteristics, species, and management practices. With plantations covering approximately 282,500 ha, they play a crucial role in the state's economy. Quantifying potential productivity, yield gaps, and understanding limiting growth factors is essential for planning sustainable forestry.

In collaboration with forestry companies, CSIRO, and funding from Forest and Wood Products Australia (FWPA), an extensive forest modelling study is being undertaken to predict *Eucalyptus nitens* and *Pinus radiata* growth across Tasmania using the 3-PG process-based model. The model was calibrated and validated using permanent sample plot data, spatial climate, soil attributes, and plantation characteristics. New species parameters were derived from existing datasets and studies.

A multisite study used 582 *E. nitens* and 614 *P. radiata* sites, with data collected from 1970's to 2024. A total of 7,722 measurements of stand volume (SV), mean annual increment (MAI), diameter at breast height (DBH), basal area (BA), stand height (H), and stocking (N) were used for model validation. Results showed strong agreement between modelling predicted and observed values, with accuracy rates of 91% and 80% for SV, 90% and 92% for DBH, 85% and 70% for MAI, and 90% and 88% for BA for *E. nitens* and *P. radiata* plantations respectively.

Water deficit in summer and low winter temperatures are the main growth constraints. The model effectively predicts plantation productivity, offering valuable insights for sustainable forest management in Tasmania under current and future climate conditions at plot and state scales.

Presenter: Dr Auro Almeida is Principal Research Scientist in CSIRO Environment. He was awarded a PhD in Resource Management and Environmental Science from the Australian National University in 2003. He has extended experience on development and practical application of process-based modelling to understand and quantify trees respond to environmental conditions and management practices at different scales. This knowledge has been used to develop sustainable production systems for planted and native forests, with focus has on water use and impact of climate change. The science and its application have been undertaken in Australia, and several countries in South America and Southern Asia.

Innovative nursery management solutions to sustainably manage root disease, improve nursery utilisation, and enhance resilience and productivity of planted pines

Jonathan Plett, Hawkesbury Institute for the Environment, Western Sydney University

Abstract: Softwood growers depend on efficient nursery practices to reliably supply robust, high quality plants for their plantation operations. Currently, these supply chains are threatened by annual losses of ~20% due to disease and ill health, and further losses post-planting due to a lack of resilience. These figures are predicted to worsen in the coming decade as we experience more frequent extreme climate events. Supporting disease is an imbalance of nutrition and the absence of a diverse beneficial root microbiome. In an effort to rectify this, large quantities of fertiliser and fungicides are used, accounting for 5% of the cost of seedling production. Our ongoing projects seek to reduce the cost of in-nursery treatments while improving seedling health and survival. In our collaborative projects with the FWPA, the NSW-DPIRD and forestry growers in Victoria, South Australia, New South Wales, and Queensland we have been testing and developing evidence-based management strategies to reduce these losses by optimising the balance of nursery fertiliser, fungicide, and beneficial microbial treatments. I will present our findings to date as well as the initial resilience assessments of these seedlings in a series of field trials across south/eastern Australia. I will conclude with our future work being planned to further refine the balance of fertiliser x fungicide x microbial inoculum to break the disease cycle experienced by growers and to co-define with forestry stakeholders sustainable management strategies to

preserve the supply chain through increased seedling health that will support long-term resilience and productivity of plantation forestry.

Presenter: Associate Professor Jonathan Plett has over 20 years experience across three continents studying different approaches to improve tree disease resistance and nutrition. At the Hawkesbury Institute for the Environment (Western Sydney University), Jonathan and his team are furthering our understanding how tree genetics x environment x microbiome combine to produce sustainable, productive forests. Using hardwood and softwood models, together with their associated bacterial and fungal partners, Jonathan tackles these complex questions by combining different techniques from molecular biology and biochemistry, including genomic and transcriptomic analysis, to generate applied results that support the Australian forestry industry.

Safeguarding Australian exports of logs from future withdrawals of methyl bromide

Dr Dylan McFarlane^{1,2}, Dr Scott Mattner^{2,1}, Dr Ian Porter²

¹VSICA Research, Melbourne, Australia. ²La Trobe University, Melbourne, Australia

Abstract: Our research aimed to address the risk to Australian log exports posed by potential regulatory changes or phase-out of methyl bromide (MB), a key fumigant used to control pests for biosecurity compliance in major markets (India and China). MB emissions contribute to stratospheric ozone depletion, which led to the regulation and withdrawal of many uses under the Montreal Protocol.

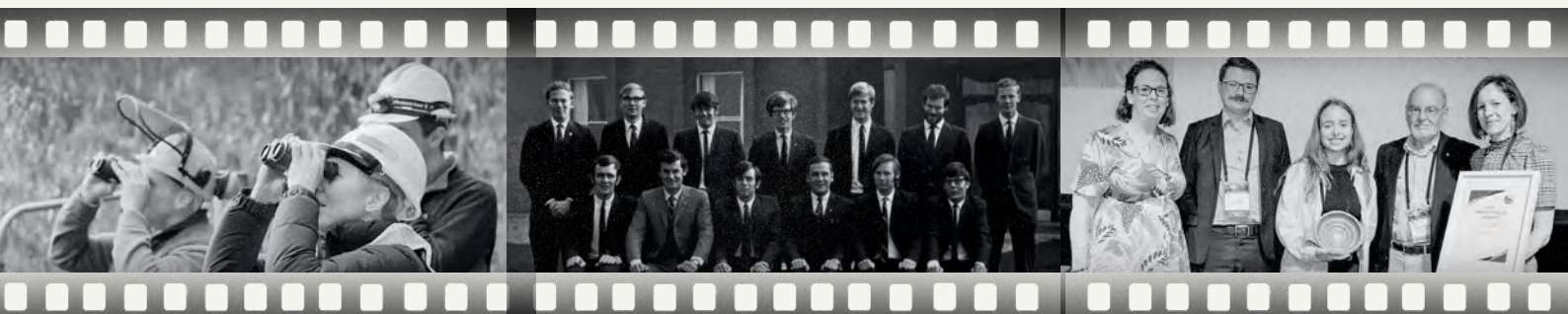
Additionally, domestic regulations have lowered exposure limits to MB due to health concerns, potentially affecting commercial use through increased buffer zones and treatment times. Despite these significant risks to future use, MB remains essential for market access, as our key trading partners mandate treatment for biosecurity.

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SPEAKERS AND ABSTRACTS

Without viable alternatives, stricter MB regulations could see the Australian industry lose access to these critical markets, as has already occurred for the EU.

In collaboration with industry, we reviewed and prioritised short-term (sulphuryl fluoride and ethanedinitrile), medium-term (methyl iodide and phosphine) and longer-term (microwave) options to MB for export logs. For example, our preliminary commercial research showed that methyl iodide effectively eliminated key pests such as *Sirex* wood wasps in export logs. Ongoing research aims to develop and validate these treatments on larger scales, support registration, and gain acceptance from trading partners.

By advancing the development and registration of viable alternatives to MB, our research has strengthened the future of Australian log exports in key markets. We anticipate that our ongoing research will safeguard trade relationships, maintain market access, and help industry build resilience to future regulatory changes on fumigants.

Presenter: Dr Dylan McFarlane has worked at VSICA Research for over seven years with experience in commodity and soil fumigation. Dylan undertook his PhD at the University of Queensland on the biology of insect pests of commodities (e.g., stored grains) and has since lead research on alternatives to methyl bromide for Australian strawberry production, log export and export fodder.

Cost/benefit analysis of the fire risk mitigation impacts of treating pine thinning residues

Martin Strandgard, *University of the Sunshine Coast*

Abstract: *Pinus radiata* plantations are at their most fire prone when young due to vertical and horizontal fuel continuity. Thinning reduces horizontal fuel continuity but increases vertical fuel continuity for several years post-thinning due to the addition of over twenty oven dry tonnes of elevated fine fuel to the plantation. This additional fuel can cause surface fires to move into the crown resulting in greater rates of spread and increased plantation damage, even under mild weather conditions.

There are three main elements to the study:

- Collection of fine and coarse fuel data from *radiata* pine 1st and 2nd thinning sites at three sites following treatment (either mulching residue along the extraction rows or removal of large woody sections by forwarder) combined with control plots
- Modelling of fire spread across a range of fire weather conditions to estimate the degree and probability of stand damage in treated and untreated stands
- A risk cost/benefit analysis to determine whether the benefits of reduced fire losses outweigh the treatment costs.

At the two sites measured to date, both forwarder residue removal and mulching have been effective in reducing fuel loads. The forwarder has been more effective at removal of residue alongside the extraction rows while the mulcher has been able to reduce fuel loads through incorporation of comminuted residue into the soil. Although outside the study scope, an advantage of mulching extraction rows observed during the study was the provision of good access into the plantation to attack slow moving fires and spot fires.

Presenter: Dr Martin Strandgard has over twenty years of forestry experience, including over ten years in conducting research of forest harvesting systems and three years in the development of the Phoenix Rapidfire bushfire simulation system. He has written over 40 journal articles, conference papers (presented at Australian and international conferences) and industry bulletins relating to forest harvesting. Recently he has been chief researcher on two FWPA projects related to infield drying of logs and biomass and the impacts on the supply chain. Martin is on the editorial panel of Australian Forestry and regularly reviews journal articles for international forestry journals.

BREAKOUT #20 – Farm, trees and agroforestry

From seed to sawn timber - An agroforestry journey

Philippa Noble, *Brimin Lodge Pastoral*

Abstract: In 1992 on our 550 mm rainfall, 170 ha property we were keen to incorporate as many trees managed for sawn timber as possible, without compromising the grazing ability of the farm.

Our own species trials revealed Sydney Blue Gum and Spotted Gum looked happy although they grew a little slower. We used them for future annual plantings in single rows along each paddock boundary. We now have over 9 km of tree lines, with over 2,200 managed trees.

Tree management includes form pruning, lift pruning using an elevated work platform, culling and coppice management after harvest.

Harvesting of trees over 50 cm DBH started in 2021 of 21 to 24-year-old trees.

A Lucas mill was purchased and once confident of the quality of the sawn timber, we commenced selling logs to a commercial hardwood sawmill. A mobile firewood processor has meant every log and branch has either been sold, milled with the Lucas mill or processed for firewood.

Having grown both species we can directly compare their characteristics and suitability for single row agroforestry application.

A cost benefit analysis of this single row agroforestry, based on a per tree basis, showed costs of \$129/tree, and returns of \$313/tree for timber sales, \$282/tree of increased farm income and a further \$104/tree for farm amenity per year – a net farm forestry return of \$699/tree. This meant an additional ongoing return of \$35,000 per 50 trees harvested per year for our farm.

Presenter: Philippa Noble has an Agricultural Science degree and post graduate training in aquaculture, climate change and ornithology, and has undertaken the Gottstein Trust Wood Science course. She has worked with the Victorian government in agriculture, natural resource management and farm forestry for over 30 years as an extension officer, advising farmers and managing various research and plantation establishment projects. She is currently President of Farm Forest Growers Victoria. Philippa and her husband own a farm at Brimin on the Murray River where they produce prime lambs and timber, as well as provide on-farm accommodation.

Promoting sustainable land use and agroforestry through collaboration and innovation in South Australia's agricultural landscape

Samantha Blight, Coorong District Council

Abstract: The Farm Forestry Landcare Network (FFLN) is a collaborative volunteer organisation focused on promoting sustainable land use and industries through farm forestry practices. It brings together landholders, agricultural industries, researchers, non-government organisations, and local governments to support the integration of trees into agricultural landscapes. The group has evolved from its origins as the Agro Forestry Working Group in the late 1990s to its current form, which is backed by the Coorong District Council. FFLN aims to enhance economic and ecological outcomes through farm forestry by promoting wood product industries (e.g., firewood, timber, biofuels) and the environmental benefits of perennial farming systems (e.g., biodiversity, carbon sequestration, and soil health).

The network fosters collaboration by sharing scientific knowledge, innovative practices, and practical experiences from farmers and landholders. FFLN's ongoing trials test the establishment of tree species suited to lower rainfall farming and explore improved genetics and establishment techniques. Their initiatives focus on addressing challenges such as soil salinity and non-productive land. The network aims to drive interest in agroforestry, which is poised to address key issues like sustainable heating, soil conservation, new crops for low rainfall areas, and carbon sequestration. As South Australia faces limited agroforestry opportunities, FFLN works to leverage government policies, build market capacity, and support the development of harvesting and processing infrastructure. Ultimately, the network strives to create a prosperous, vibrant, and sustainable agricultural landscape.

Presenter: Samantha Blight is a Biodiversity and Conservation graduate with specialised knowledge in environmental management and fire ecology. As the Sustainability Officer at Coorong District Council, she works to implement sustainable land management practices while engaging and empowering local communities. Her expertise spans landholder engagement, community capacity building, and fostering relationships with Indigenous groups. With a strong understanding of terrestrial and aquatic ecology, wetland management, and native vegetation restoration, Samantha's work focuses on habitat restoration and revegetation.

Her diverse skills and practical experience allow her to significantly contribute to advancing sustainable forestry practices, particularly among farmers and landholders.

Impact of Thinning on Wood Density and Diameter Growth of *Corymbia* Hybrids in Silvopastoral Systems

Dr Vilius Gendvilas¹, Dr David Lee¹, Dr Geoff Downes², Dr Nahuel Pachas³

¹Forest Research Institute, University of the Sunshine Coast, Sippy Downs, Australia. ²Forest Quality Pty Ltd., Franklin, Australia. ³Departament of Primary Industries, Maroochy Research Facility, Nambour, Australia

Abstract: Understanding the impact of thinning on wood properties and growth is essential for optimising silvicultural practices in *Corymbia* hybrids, particularly within silvopastoral systems in tropical Australia.

This study evaluated the effects of different thinning intensities on wood basic density and diameter growth in *Corymbia torelliana* × *C. citriodora* subsp. *variegata* hybrids planted in 2008 near Stanwell, Queensland. Thinning was done at age 13, resulting in post-thinning stockings of 100, 225, and 300 stems per hectare, alongside an unthinned control. Three years post-thinning, we assessed basic wood density using the IML RESI PD 500 resistance drilling instrument. Drilling was performed at a feed speed of 60 cm/min and 4500 RPM, settings identified as optimal for these trees. The drilling resistance measurements explained 72% of the variation in basic density. Basic density increased with thinning intensity, ranging from 943 kg/m³ in the control to 971–1002 kg/m³ across thinning treatments, with no significant differences among the thinned stockings. Diameter under bark measurements showed no significant difference between the control and the 225 and 350 stems per hectare treatments (17.2–19.3 cm); however, trees at 100 stems per hectare were significantly larger, averaging 22.2 cm. Additionally, trees at 100 stems per hectare exhibited a faster radial increase in density.

These findings suggest that lower stocking densities enhance both wood density and diameter growth in *Corymbia* hybrids. Resistance drilling proved to be a reliable non-destructive tool for assessing wood basic density, supporting its application in optimising silvicultural strategies in silvopastoral systems.

Presenter: Associate Professor David Lee, from the University of the Sunshine Coast has over 30 years' experience in domestication, breeding, and wood quality research. His work focusses on *Santalum*, *Corymbia*, *Eucalyptus*, and *Pinus* species in Australia and overseas. He has over 200 publications.

Growth and Form of 10-year-old *Casuarina obesa* Provenances with *Frankia* on saline avon farmland

Robert Hingston

Farm Forestry Advisor

Abstract: *Casuarina obesa* Miq. is a commonly planted tree on ex farmland in Southwest Australia as a key landcare or ameliorative revegetation on saline land. By virtue of high salinity and waterlogging tolerance, *C. obesa* is suitable for poor quality sites with few other species options. It has excellent potential as a multi-purpose agroforestry species based on broad genetic diversity in wild populations, reasonable growth rates, good timber properties, low competition with adjacent crops and pastures. Renewed interest in *C. obesa* has been stimulated by carbon sequestration projects involving revegetation methods on marginal (low opportunity cost) land.

The utility of *C. obesa* in agroforestry plantings can be improved by the selection and development of vigorous provenances with good tree form. In addition, performance can be enhanced by symbiotic interactions with the actinobacteria *Frankia* contributing to increased nitrogen nutrition, photosynthesis potential and Osmo protectants.

This study reports on growth and tree form measurements at a *C. obesa* trial established in 2015 on highly salt affected farmland near Goomalling. The replicated trial design comprised five provenances $\pm$ *Frankia* inoculation prior to planting. By age 9.7 years the Coorow provenance (+*Frankia*) had the best diameter growth (mean DBH = 5.0 cm) and the Beaufort River provenance (-*Frankia*) had the best height growth (mean height = 4.5 m). The Beaufort River provenance also displayed the best tree form with a viable selection ratio for timber production of 24%. Growing conditions were relatively harsh but variable across the site, providing insights into salinity thresholds for the species.

Presenter: Bob Hingston is a former Farm Forestry Development Officer with Western Australian Department of Conservation and Land Management (CALM) and Forest Products Commission (FPC). He has extensive experience in silvicultural, agroforestry and plantation research forestry with wide spaced eucalypts and pines over 50 years.

This work led him into farm forestry/agroforestry extension across WA farmland but mostly the South West. Has been responsible for establishment of many farm forestry projects around WA and further research with species such as *Casuarina obesa* and low rainfall species. Has been involved in Aust. Master Tree Grower Programs around WA since its inception in 1997.

Integrating Small-Scale Farm Forestry into Australia's Supply Chains: Insights from Simulation and Cost Modelling

Li Meng, Tharun Tomy, HungYao Hsu, Ady James, Jim O'Hehir

University of South Australia

Abstract: Farm forestry in Australia presents persistent challenges for small-scale landholders, particularly in gaining access to large supply chains, managing plantations, and addressing risks inherent in long-term forestry investment. Since the withdrawal of government plantation services, smaller growers have lacked technical support, cost efficiency, and market power, leaving them disadvantaged compared with larger enterprises. This study applies a business process re-engineering framework, implemented through SIMPROCESS, to model forestry planning, profitability, and risk under alternative scenarios. Activity-Based Costing is employed to quantify the resources consumed in grazing, tree planting, harvesting, and transportation. The modelling is applied to the Green Triangle region, a key softwood and hardwood production zone, where many smallholders rely heavily on forestry and farm income. By simulating alternative market and policy conditions, the study provides decision-support for agroforesters and evidence for policymakers on targeted subsidies, regional coordination, and incentives to strengthen smallholder participation in Australia's forestry supply chain.

Presenter: Dr Li Meng, from the University of South Australia, specialises in Transport Economics, Logistics and Supply Chain Management, and Enterprise Resource Management. With ten years of industry experience as an engineer, she emphasises industry-based teaching pedagogy within the engineering sector. Her recent research focuses on supporting minority ethnic groups, exploring topics such as cyclist-friendly road design, native food development in regional areas, and traditional agricultural technologies, along with their impact on food systems and women's health.

SPEAKERS AND ABSTRACTS
WEDNESDAY 22 OCTOBER

DAY THREE

PLENARY SESSION #3

Global reflections on the complexity of the outlook for production and conservation in forested landscapes – navigating increasing risk, competing values and irrationality



Councillor and Vice President of the International Union for Conservation of Nature (IUCN)

Presenter: Peter Cochrane lives on Wodi-Wodi country and is a Councillor and Vice President of the International Union for Conservation of Nature (IUCN).

He is a member of the Australian Heritage Council and chairs the Sydney Institute of Marine Science (SIMS), the Blue Mountains World Heritage Institute, the Australian Tropical Herbarium and the National Benefit Assessment Committee of the Marine National Facility. He is a director of TierraMar Ltd.

Peter is a member of the External Reference Group on Nature for the Responsible Investment Association of Australasia and an Adjunct Professor in the School of Biological, Earth and Environmental Sciences, Faculty of Science University of NSW.

BREAKOUT #21 – Forestry in the future

One Landscape, Many Demands

ESG360

Abstract: Today's demands on Australia's rural landscapes are diverse and multi-faceted. Environmental markets add to landscape demands. Our evolved euro-centric landscape management approaches continue moving towards a deeper understanding of this continent's diverse natural resource characteristics. It's generally recognised that Indigenous landscape management reflects the benefits of millennia to be more aligned with Australia's ancient geology, weathered soils and unique forests. It's also broadly appreciated that there's a higher degree of heterogeneity in our landscapes than our predominantly European pioneers appreciated. This landscape appreciation means we're all more aware of the impacts and opportunities associated with natural resource management.

Forest management developments in Australia have in some senses moved slower than agricultural approaches. However, Foresters were quicker to work with Australia's natural landscape than to try and dominate it. This is in part because forest management hasn't and doesn't receive equitable levels of research funding compared with Australia's agricultural sector. This funding imbalance reflects the returns of annual crop and animal production systems across thousands of enterprises versus the multi-year Forestry paradigm, managed by scores of Australian forest management agencies.

The multi-year Forestry paradigm means Forestry in Australia has long operated under a multi-use management framework and is inextricably rooted in multiple-use demand management. Forest management is never a single product system. The Australian Forestry multiple-use management approach and the opportunities to gain commercial and other advantages from centuries of silvicultural science is now being recognised by environmental markets.

Presenter: In 2004, after a career in traditional production forestry Aaron Soanes began working in the Forest Industry's carbon sequestration and land use emissions avoidance sector. Aaron's team established and managed, what is still Australia's largest carbon sequestration estate. He's held directorships in the finance and environmental sectors and was the CEO of CO2 Australia Limited.

As a founding director of ESG360 Pty Ltd, Aaron now advises investors, corporations, Indigenous organisations and not-for-profits on opportunities and risks within Australia's evolving environmental markets.

Panel: The future of forestry and its role in addressing global sustainability challenges

Glenn Dale, *Verterra*

Daniel Mendham, *CSIRO*

Blair Freeman, *Forestry Australia*

Aaron Soanes, *ESG360*

Mia Cassidy, *Hurford Forests*

Abstract: Forestry in Australia is entering a transformative era, driven by the growing need to address climate change, biodiversity loss, shifting economic and social expectations, and comply with evolving global frameworks. This panel discussion looks ahead to explore the future roles and skills of foresters, reframing environmental sector changes not as threats but as opportunities for leadership and innovation. With a strong foundation in landscape-scale management of vegetation, soil, and water, foresters are uniquely positioned to deliver nature-based solutions that regenerate ecosystems while supporting productivity and economic resilience.

The session will examine how forestry can integrate with agriculture, contribute to closing the timber supply gap, and support investment in natural capital. It will also highlight the importance of financial literacy, systems thinking, and communication skills in expanding forestry's influence across sectors. Through expert insights, case studies, and perspectives from emerging professionals, the presentation will demonstrate how forestry training can evolve to meet future demands and help shape a nature-positive economy.

Presenters: **Glenn Dale** is Managing Director and Chief Technical Officer of Verterra and Director of BYV Organics. He holds a BSc in Forestry and Biochemistry, a PhD in Molecular & Quantitative Genetics and an MBA, and appointments as Adjunct Associate Professor with the University of Southern Queensland and Queensland University of Technology. Glenn has 40 years' practical experience in forestry, natural resource management and ecological engineering. Glenn works across a wide variety of sectors domestically and internationally, enabling him to bring an integrated, multidisciplinary perspective to new challenges in natural capital management.

Daniel Mendham is the leader of the Landscape and Forest Function team, CSIRO Environment. He leads and delivers on projects that aim to solve our national and international challenges associated with achieving targets for restoration, conservation, net zero, food and fibre production and thriving communities, both in Australia and internationally.

Blair Freeman is Head of Strategy and Sustainability with Indufor in Australia. He holds a BSc and an MBA and has over 20 years of experience in providing advisory services on forest policy, strategic planning, natural resource management and sustainable development across Australia and the Asia Pacific region. Blair has led a range of complex multidisciplinary projects across the sector, including strategic reviews, program reviews and sustainability reporting. Blair has been an active member of Forestry Australia (previously the IFA) for 25 years, and on the Board of Directors for the past six years.

In 2004, after a career in traditional production forestry **Aaron Soanes** began working in the Forest Industry's carbon sequestration and land use emissions avoidance sector. Aaron's team established and managed, what is still Australia's largest carbon sequestration estate. He's held directorships in the finance and environmental sectors and was the CEO of CO2 Australia Limited.

As a founding director of ESG360 Pty Ltd, Aaron now advises investors, corporations, Indigenous organisations and not-for-profits on opportunities and risks within Australia's evolving environmental markets.

Mia Cassidy is a forester with Hurford Forests in NSW where she works across both private native forest and plantations. She is a PhD candidate at Southern Cross University and has recently submitted her thesis on the barriers to timber production on private property in north-eastern NSW.

BREAKOUT #22 – Future Foresters

Opportunities and challenges for young professionals in Australia's forestry sector

Jenna Hammond, *FFI Chair, Forestry Australia*

Jack Davis, *Department of Energy, Environment and Climate Action*

Alex Dudkowski, *HVP Plantations*

Caitlyn Ellis, *HVP Plantations*

Yasika Subasinghe, *Forestry Australia's Future Foresters Initiative*

Abstract: Forestry's current and future workforce in Australia includes a variety of experienced, capable and passionate foresters. The current workforce, however, also has very few young professionals and budding foresters to enable successful succession planning for the future. Tertiary education has moved away from many forestry qualifications and the public discourse surrounding forestry amongst Australia's young professionals is influenced by growing green ideologies and misleading science. Yet the opportunities in the forest sector have never been greater – how do we tackle the challenges of attracting young professionals into a variety of forestry roles and harness the opportunities our sector presents?

Hear from and discuss our forestry workforce with young professionals and work together to form ideas and brainstorm solutions for the future.

Panellists: **Jenna Hammond** is the Engagement and Innovation Specialist at Private Forests Tasmania where she leads and initiates stakeholder engagement opportunities and projects primarily aimed at Tasmanian farmers and landowners with or with the potential to pursue forestry opportunities on private land.

Prior to this role, Jenna worked at Sustainable Timber Tasmania for over six years, working with regional operations teams to engage external stakeholders and develop communications approaches that support sustainable forest management outcomes for the Tasmanian community.

Jenna completed a Bachelor of Media at the University of Tasmania in 2018, majoring in Strategic Communications. Jenna is a trained forest firefighter and Public Information Officer and has worked in Incident Management Teams on campaign fires in both Tasmania and New South Wales.

Jenna is an active member of Forestry Australia and has been part of the Future Foresters Initiative since 2020, and Chair since late 2024. In 2023, Jenna was the recipient of the Forestry Australia Prince of Wales Award.

SPEAKERS AND ABSTRACTS

Dr Yasika Subasinghe is a Research Forester at Hancock Victorian Plantations (HVP Plantations), based in Gippsland, Victoria. She leads the design, implementation, and analysis of research trials that support evidence-based decision-making across a range of plantation management activities. Her work plays a key role in translating research into operational outcomes that enhance productivity, sustainability, and resilience in managed forest systems.

Yasika holds a PhD from the University of Melbourne's School of Ecosystem and Forest Sciences, where her research focused on forest ecosystems, ecological and plant physiology, and fire management. She also holds a Bachelor's degree in Environmental Management and Forestry from the University of Sri Jayewardenepura, Sri Lanka. With over ten years of experience in forestry and environmental management, Yasika brings a unique perspective that bridges academic research and industry practice. She is a trained general firefighter and plantation firefighter, and actively contributes to fire preparedness and response within HVP's operational landscape.

Yasika has been a member of Forestry Australia since 2017 and has served on the Future Foresters Initiative Committee since 2023. She is passionate about fostering collaboration between researchers, practitioners, and early-career professionals to support the future of sustainable forestry in Australia.

Jack Davis studied a Masters of Environments specialising in Conservation and Restoration at the University of Melbourne, graduating in 2019 after completing a research project examining the Effect of Fire on Natural Regeneration following the Removal of Invasive Woody Vegetation. He currently works at the Department of Environment, Energy and Climate Action as a Reforestation and Silviculture Program Officer in the Snowy District, and holds an active fire role as a General Firefighter and Mapping Officer for the Tambo District.

Jack has previously held roles as an Operational Planner and a Silvicultural Forester at VicForests, as well as a short secondment as a Fire Ecology officer at DEECA. He is passionate about using his operational and spatial knowledge to guide Seed Collection works for Forest Management, as well as Fire Ecology and First Nation Land Management Practices.

Jack has been a member of Forestry Australia since 2020 and joined the Future Foresters Initiative committee in 2022 to connect with other young foresters and help advocate for the future of forest management in Australia.

Alex Dudkowski is a Harvesting District Forester at HVP Plantations in Myrtleford, Victoria. Alex has 4 years of experience in plantation forestry and has participated in the HVP Graduate Program where he gained experience in silviculture, GIS, harvesting and forest research. Alex's current role primarily involves the planning, roading and monitoring of softwood harvesting operations.

Alex completed a Bachelor of Environments and a Masters of Ecosystem Management & Conservation from the University of Melbourne. Prior to forestry, Alex worked as an environmental consultant, focusing on water catchment and coastal projects for Local Governments in QLD & NSW.

Outside of work, Alex enjoys hiking, live music events and searching for the best bakery in Australia.

Caitlyn Ellis is a Graduate Forester at HVP Plantations, currently working as a Silviculture District Forester in Victoria's northeast. In her graduate role, she is gaining broad experience across all functional areas of forest management. Her silviculture responsibilities focus on managing plantations from site establishment through to first thinning, with a strong emphasis on forest health.

Caitlyn holds a Master of Ecosystem Management and Conservation from the University of Melbourne, where she completed a research thesis in farm forestry. She is particularly interested in balancing production forestry with ecological, social, and cultural values, and is passionate about reshaping public and student perceptions of the forestry industry.

BREAKOUT #23 – Plantation management risk and uncertainty

Risk as a Compass: Navigating Decision-Making in Forestry

Belinda Olejniczak, Robbie Sinclair,
HQ Plantations

Abstract: Risk must be at the centre of business decision making. This presentation explores the integral role risk assessment plays in supporting strategic choices, operational actions and enhancing resilience. Attendees will gain insights into best practices for integrating risk management into decision-making processes, ensuring informed, agile, and sustainable outcomes. Join us to discover how a proactive approach to risk can drive success and innovation in the forestry sector.

Presenters: **Belinda Olejniczak** brings over two decades of global and local experience in delivering innovative and impactful solutions across Governance, Enterprise Risk Management, and Business Resilience. She challenges conventional norms, championing a dynamic approach that aligns risk management with strategy, but also comprehends the broader economic and competitive landscape. Belinda views risk management as a driver of innovation, cultural transformation and continuous business improvement.

Robbie Sinclair is an accomplished risk and resilience leader with expertise across forestry, energy, rail,

mining, health, education, and consulting sectors. He aligns governance, commercial goals, and risk strategy, applying global standards to complex environments. Robbie fosters innovation and growth while delivering tangible business impacts.

Understanding Global Weather Perils and Wildfire Risk

Lynn Roehrig, *Descartes Underwriting*

Abstract: The forestry sector is facing increasing threats from wildfires. With global warming producing higher temperatures and longer drought periods, the number of days per year with high-to-extreme wildfire risk is projected to increase. In 2024 alone, wildfires resulted in \$6 billion of global economic losses and \$3 billion in insured losses. In just the first quarter of 2025, the California wildfires accounted for 71% of total insured losses – amounting to approximately \$38 billion. Wildfires can ignite from a range of natural and human-induced triggers. While some start due to rare natural conditions, most are unfortunately the result of human negligence or activity. Seasonal weather patterns and factors such as temperature, humidity and precipitation, as well as wind, are pivotal in shaping how easily wildfires can ignite, how fast they spread, and how intense they become. In Australia, climatic drivers like El Niño and the Indian Ocean Dipole (IOD) play a significant role in influencing fire conditions. El Niño increases the likelihood of hot, dry weather and, when combined with a positive IOD that brings cooler sea surface temperatures, these systems reinforce dry conditions across the region. Together, they heighten the risk of drought and bushfires through prolonged periods of abnormal heat and dryness. Insurers are responding to the growing wildfire risk through parametric insurance, which is a data-driven approach to risk management that encompasses historical wildfire data, long-term climate data, weather patterns and satellite imagery to detect burnt plantation areas and determine the long-term impact of a wildfire event on a client. This enables a faster insurance payout, typically within days or weeks, and it covers both physical damage and future financial losses resulting from an event. For example, in the case of a carbon credit developer, parametric cover would compensate for the replacement value of the trees but also indemnify for potential future revenue of the generated carbon credits sold from planting those trees. This helps forest owners, managers and carbon developers more quickly recover from a natural disaster.

Presenter: **Lynn Roehrig** is Descartes Head of Business Development, Australia and New Zealand. He has been named on the Insurance Business ANZ Hot List 2025, which recognises insurance professionals for their extraordinary efforts in modernising and transforming Australia's insurance sector. With more than 15 years' experience in insurance, Lynn educates brokers on a wide range of parametric insurance solutions, ensuring businesses are equipped to manage risk and maintain

resilience in an increasingly volatile climate. Lynn's mission is to bridge critical protection gaps, ensuring clients have access to innovative insurance products that safeguard their operations. Many of his clients operate in regions that are highly vulnerable to natural disasters, including cyclones, bushfires and floods. These businesses often struggle to secure adequate coverage through traditional insurance markets, leaving them exposed to significant financial risk. Through his leadership and dedication, Lynn is playing a crucial role in enhancing the resilience of businesses in Australia and New Zealand.

Spatial variation in damage to plantation trees and characteristics that explain sambar deer damage

Dr Alison Hayman¹, Professor Julianne O'Reilly-Wapstra¹, Professor Geoff While¹, Dr Rosina Savisaar², Professor Clare McArthur³, Dr Tarryn Turnbull⁴

¹University of Tasmania, Sandy Bay, Australia.

²Mondego Science, Carcassonne, France. ³The University of Sydney, Sydney, Australia. ⁴Hancock Victorian Plantations, Churchill, Australia

Abstract: As the population of Sambar deer (*Rusa unicolor*) continues to expand in Australia, so too does its impact to forestry. Impacts of Sambar deer in Australian forestry plantations, and factors leading to variation in damage and impact, have seldom been evaluated. Focusing on bark stripping of young radiata pine (*Pinus radiata*) trees in Victorian plantations, this project aimed to understand spatial variation in damage to plantation trees and identify the site and environmental characteristics that explain variation in sambar deer damage.

The project comprised two main assessments. First, trees were intensively assessed for bark stripping within three five- year-old plantations to understand within coupe spatial variation in damage by deer and, second, trees were assessed less intensively across 20 plantations to assess differences in damage between two different age classes of trees.

Results from this study contribute an increased understanding of factors that explain variation in bark stripping damage in forestry, providing insights for better management outcomes.

Presenter: **Alison Hayman** is a PhD candidate at the University of Tasmania, researching impacts, detection and non-lethal deterrent of deer in forestry. She holds a Master of Environmental Management from Charles Sturt University (University Medal), and an MBA from the Australian Institute of Business. Alison has worked as an environmental scientist, and has a PhD and Masters in Science from Southern Cross University. She is a recipient of the Forestry Australia, Forestry Scholarship Fund and Parks Victoria Applied Park Management Research Scholarship. Alison manages Hayman's Maps, has volunteered with Kangaloola Wildlife Shelter and is on the Board of Parklands Albury Wodonga.

Using spatial data to reduce the need for browsing mammal control in forest landscapes

Mr James Grimsdale¹, Dr Luke Yates¹, Dr Ben Halliwell¹, Associate Professor Geoffrey While¹, Associate Professor Dean Williams^{2,1}, Professor Julianne O'Reilly-Wapstra¹

¹University of Tasmania, Hobart, Australia. ²AFWI, Launceston, Australia

Abstract: Mammal browsing damage varies significantly spatially with some areas being heavily browsed and others experiencing minimal browsing pressure. Despite this variation and the knowledge that young trees can recover from light browsing pressure, mammal control is conducted as part of establishment operations at almost all coupes in forestry estates nationwide. This one-size-fits-all policy costs the forestry industry millions of dollars annually in potentially unneeded control operations. Moreover, the overuse of lethal mammal control can negatively impact public perceptions of forestry. A better understanding of the spatial drivers of mammal browsing damage could facilitate profiling of coupes into high and low browsing risk enabling a targeted approach to mammal control that would reduce unnecessary implementation, saving money and alleviating public concerns. Using two major forestry systems, softwood plantations and native regeneration forestry, we demonstrate a modelling approach that combines easily accessible spatial data with decades of mammal browsing damage surveys to produce predictive models for overall browsing risk and level of browsing damage. We discuss the differences between the models for the different forestry systems and provide a framework for how these models can be used to facilitate targeted mammal control during establishment. We suggest a protocol that can be followed so that equivalent models can be produced for forestry systems around the globe.

Presenter: James Grimsdale is a PhD candidate in the ARC Centre for Forest Value and the Behavioural and Evolutionary Ecology Research Group at the University of Tasmania. His research centres on the management of browsing mammals: both investigating novel management methods and identifying the current tools which work best in different scenarios. Using a combination of field experiments, modelling of historic browsing data and meta-analyses he aims to develop tools that will guide future mammal browsing management approaches as stakeholder pressure changes the production forestry landscape.

BREAKOUT #24 – Technology in forest management and restoration

Stem Attribute Imputation from Fused Aerial and Terrestrial LiDAR Scans

Professor Anthony Finn¹, Dr Joel Younger^{2,1}, Dr Jim O'Hehir¹, Professor Arko Lucieer³, Dr Darren Turner³, Dr Stefan Peters¹

¹University of South Australia, Mawson Lakes, Australia. ²Flinders University, Tonsley, Australia. ³University of Tasmania, Hobart, Australia

Abstract: Traditional forest inventory is expensive, time-consuming, and relies upon skilled personnel; and operations are usually restricted to statistically established sample plots. This makes the results less representative over larger scales. Light detection and ranging (LiDAR) has become a central remote sensing technology for a range of forest management and research activities. It allows the task of inventory to be conducted in a timely and cost-effective manner through generation of dense point clouds and computation of forest and individual tree attributes. In this study we observed young (10m) and mature (20m) radiata pine (*Pinus radiata*) and (35m) silver top ash and Tasmanian bluegum eucalyptus (*Eucalyptus sieberi* and *Eucalyptus globulus*) trees using aerial LiDAR scanners (ALS) and terrestrial LiDAR scanners (TLS). These individual data sets were combined into a single, merged point cloud using a two-stage fusion approach and the values of individual tree attributes in the sparser regions of the ALS data set then imputed from attributes extracted from the richer, higher-density regions of the merged point cloud. The study provides strong empirical evidence that intelligent ALS-TLS fusion can deliver improved characterisation of forests across spatio-temporal scales without the need for prohibitively long field trials. Errors in estimating the stem attributes dropped from 12 – 28% without imputation to 2 – 6% with it.

Presenter: Anthony Finn is Professor of Autonomous Systems at the University of South Australia. He graduated from Cambridge University with a PhD in 1989 and has since published two books and around three hundred book chapters, journal articles, refereed conference papers, and research reports. From 2011-2019 Professor Finn was Director of the Defence and Systems Institute, prior to which he worked at the Defence Science & Technology Organisation (DSTO) for almost twenty years. Before joining DSTO, and while based at Cambridge University, Professor Finn worked as a research consultant for several large organisations in Europe.

Accurately estimating aboveground biomass of early-stage reforestation stands in the Philippines using multi-source LiDAR

Fellice Catelo¹, Nick Kokkas¹, John Herbohn¹, Calum McRae¹, Adriana Vega Grau², Catherine Waite³

¹University of the Sunshine Coast, ²University of Canberra, ³Cambridge University

Abstract: Reforestation requires evaluation of lagging indicators to provide substantial evidence for growth in various stages. Thus, evaluating progress for such efforts involves consistent and accurate monitoring to timely assess the quality of activities conducted. Remote sensing technologies such as LiDAR offer significant benefits in addressing the limitations of costs, time, and labour associated with traditional monitoring methods (e.g., data collection, measurement of tree heights). Literature has suggested that LiDAR-derived datasets such as tree heights have shown lower variability and reduced measurement errors compared to manual field measurements in certain contexts. However, LiDAR performance in tropical forests, even more for younger trees, has yet to be validated and explored further.

This study evaluates the accuracy of airborne and mobile LiDAR datasets for extracting tree metrics (i.e., diameter at breast height, total height) at centimetre-level in young *Acacia mangium* stands (3-5 years) planted in steep, sloping grasslands in the Philippines. Automated workflows for feature extraction and accuracy assessment were developed using R packages (lidR, terra and ForestTools). A local maxima filter (lmf) was applied for treetop detection and assisted in crown delineation.

Initial results from the automated methodology of tree height extraction used manual methods as reference data to assess the accuracy. It was found that tree heights from automated methods implemented on the LiDAR data sets have strong correlation with manual measurements ($R^2 = 0.91$ (airborne), $R^2 = 0.94$ (mobile)) with RMSE ranging from 0.29-0.37m. These findings show that automated LiDAR methods can produce results with greater consistency and fewer errors relative to manual measurements. The next stage for this study will extend the workflow to DBH extraction and aboveground biomass (AGB) estimation, moving toward a complete framework of biomass accumulation monitoring for carbon.

These findings demonstrate the potential of multisource LiDAR for operational monitoring of early stages of reforestation projects in varying landscapes such as the tropics, thereby pushing forward a scalable, cost-effective, and accurate estimation for biomass accumulation and carbon storage.

Presenter: Fellice Catelo is a forester from the Philippines with joint masters degree in spatial and ecological modelling and european forestry from

Finland and Spain. Fellice specialises in geospatial analysis for forestry applications and is currently pursuing a PhD on investigating the use of LiDAR technology to enhance carbon quantification methods in forest restoration projects in the Philippines.

Remote sensing of Australian plantation forests: the resolution trade-off

Associate Professor David Bruce¹, Dr Christine Stone², Ms Dianne Patzel³, Mr Michael Hillman¹, Dr Angus Carnegie², Dr Mingzhu Wang²

¹Flinders University, Adelaide, Australia. ²NSW DPIE, Sydney, Australia. ³University of South Australia, Adelaide, Australia

Abstract: Remote sensing observations of Australian softwood plantations undertaken over the past 18 months in a FWPA-funded research project have revealed a lot about the impact of satellite optical sensors resolutions for detecting canopy disturbances. Disturbances generated by planned management (thinning, harvesting), environmental forces (storms, drought) and from pests and diseases, manifest themselves in an array of canopy symptoms. From a satellite perspective, the main symptoms exhibit in the visible and near infrared portions of the electromagnetic spectrum. Change is detected through temporal comparisons of the satellite imagery. However, satellite systems differ in their spatial and spectral specifications, revisit times and geometrical quality. The open-source satellite Sentinel-2 has a spatial resolution of 10m, while numerous commercial satellite systems, which require 'tasking' for purchased imagery, have spatial resolutions < 2m. While Sentinel-2 can detect small clusters of damaged trees, satellites such as Pleiades Neo can detect individual tree crowns. High spatial resolution imagery permits the identification and potential removal of background elements, such as ground and shadow. Careful consideration needs to be given to matching a satellite sensor's specifications with the information aims sought from the imagery. In some cases, a 'hierarchical' approach of targeting an area identified by processed Sentinel-2 imagery using higher spatial resolution imagery for improved quantification of the disturbance may be appropriate. This paper will provide examples of imagery and analysis acquired from four satellites acquired across three geographically distinct Australian softwood regions and compared with validation obtained from aerial sketch mapping and colour aerial imagery.

Presenter: Dr Christine Stone is a Visiting Scientist with the Forest Science team in the NSW Dept. Primary Industries & Regional Development. From 2013 to 2021 she was Leader of this team and a Senior Principal Research Scientist. She is also an Adjunct Professor at the University of Tasmania and on the NZ Forest Advisory Scientific Committee. Dr Stone's area

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of expertise is in the application of remote sensing technologies for the assessment of forests, having collaborated on numerous research projects. In 2017 she was awarded Forestry Australia's N.W. Jolly Medal and has just been made a Fellow.

Automating Tree Measurement and Analysis Using the RIEGL LIS Tree Analyzer in RiSCAN PRO

Glenne Blyth, *Curtin University*

Abstract: Accurate and efficient tree measurement is critical for forestry, ecological research, and environmental monitoring. Traditional methods of tree assessment can be time-consuming, labor-intensive, and prone to human error. The RIEGL LIS Tree Analyzer tool, available in RiSCAN PRO software, offers an automated approach to extracting key tree metrics from terrestrial laser scanning (TLS) data, improving both efficiency and consistency in tree analysis.

This presentation will explore how the LIS Tree Analyzer facilitates the automated detection and measurement of tree attributes such as tree diameter at breast height (TBH), branch angles, branch count, and tree volume. By leveraging point cloud data, the tool enables precise segmentation and classification of tree structures, reducing manual effort while maintaining high accuracy. Case studies and real-world examples will be used to illustrate the effectiveness of this approach.

The session will discuss the underlying principles of the tool, the workflow for processing TLS data, and considerations for ensuring reliable outputs. Additionally, potential challenges and best practices in implementing this technology in various forestry and ecological applications will be addressed. Attendees will gain a practical understanding of how automation can enhance tree measurement workflows and support data-driven decision-making in forest management and research.

This presentation is intended for forestry professionals, researchers, and geospatial analysts interested in integrating TLS-based automation into their tree measurement practices.

Presenter: Glenne Blyth (BComm, BSurv – Curtin University, Perth) is a laser scanning industry expert. He worked in Western Australia as an Engineering Surveyor on projects including a bauxite refinery and an LNG gas processing facility. Later, he became a national laser scanning consultant for a surveying equipment distributor. In 2017, Glenne moved to Queensland and, in late 2018, became Managing Director of RIEGL Australia. RIEGL is a global leader in LiDAR technology, serving industries such as city planning, architecture, engineering, utilities, mining, forestry, and research, providing cutting-edge solutions for precise 3D data capture and analysis.

BREAKOUT #25 – Forest biosecurity challenges

Risk assessment for Australian forest biosecurity: creating our greatest hits lists

Helen Nahrung, *Forest Research Institute, University of the Sunshine Coast*

Abstract: Biosecurity risk assessments generally focus on species that are considered to have a high likelihood of invasion and impact. Usually, these are species that have attained a high pest profile overseas through range or host expansion, prior patterns of invasiveness, or economic or environmental impacts in their native range. Over-the-horizon surveillance to detect emerging pest species, monitoring of trade networks, and border interception data are occasionally used to identify species for risk assessment, but generally high priority pest status is afforded to those that have already attracted attention. By necessity, this approach precludes consideration of “known unknowns” – hitherto non-invasive, non-impactful species, “unknown unknowns” such as cryptic or undescribed species, and “sleepers” – established non-native taxa that may become detrimental if triggered by environmental factors. Assessing any of these is – by definition of their unpredictability – extremely difficult. Indeed, many of Australia's recent forest pest establishments were not assessed or predicted in previous pest risk analyses, including two that caused high impact, and four that caused moderate impact. As a first step towards improving pathway and risk analyses by looking at a broader suite of lower-profile potential pests, we compiled comprehensive lists of insects and pathogens recorded feeding globally on Australia's two major plantation forestry taxa: pines and eucalypts. In so doing, we constructed a dataset that secondarily enabled exploration of host utilisation patterns, invasion patterns, and, coupled with border detection data, which of these are transported among regions, expanding our knowledge of potential pest taxa for risk appraisal.

Presenter: Helen Nahrung has worked as a Senior Forest Health Research Fellow in the Forest Research Institute at the University of the Sunshine Coast, based in the Ecosciences Precinct with the Department of Primary Industries, in Brisbane, since 2015. She is an entomologist, and works in sustainable forest pest management, including biological control and chemical ecology, and invasion biology. She is a member of Australian Forestry editorial board, and is Deputy Chair of AFPA's Forest Health and Biosecurity Sub-committee, and of the Australasian Forest Health Working Group.

Eucs on the menu: horizon scanning, global composition and interceptions of *Eucalyptus*-feeding insects

Andy Howe, *Forest Research Institute, University of the Sunshine Coast*

Abstract: Pre-border measures to protect Australia's eucalypt plantations and native forests against insect threats include horizon scanning assessments, and analysis of trade networks and border interception data. *Eucalyptus* spp. are grown globally for pulp, timber, biomass, honey production, and amenity values. The adventive global distribution of eucalypts facilitates invasions by Australian insect species and increases the number of host-switching non-Australian generalist insects with potential to invade eucalypts in Australia.

We compiled insect species lists based on records of herbivory to compose eucalypt-feeding insect communities in global regions, and analysed their total (at species-level) border interception frequencies from 9 world regions between 1995 and 2019 to investigate the role of diet breadth, and relationships between total interceptions and insect distributions.

We identified 2114 eucalypt-feeding species (1684 Australian), dominated by beetles, bugs and moths, and 109,608 interception events of 191 species. The greatest number of generalist insect species native outside Australasia ($n = 383$) using eucalypts as hosts were in South America and Africa ($n = 129$ and 90, respectively). Fifty-five of these species were intercepted (3650 events) comprising 3.3% of global interceptions.

Species first establishment records and non-native distributions revealed secondary spread between regions by 29% of species established outside of Australasia suggesting bridgehead introductions and continued global proliferation of eucalyptus plantings drives invasions of Australian (specialist) and increasingly native (non-Australian) generalist insects.

Presenter: **Andy Howe** is an entomologist/insect ecologist with the Forest Research Institute at the University of the Sunshine Coast, with broad interests in insect biodiversity, insect-plant community interactions, invasive biology/ecology, and citizen science. He works with biological control and pest management in eucalypt plantations, while also inspiring the next generation of entomologists and taxonomists through the Insect Investigators project, CSIRO STEM professionals in schools, and Kids in Action.

Forest product border measures to secure Australia's forestry future

Chris Howard, *Department of Agriculture, Fisheries and Forestry*

Abstract: National Plant Protection Organisations (NPPOs) can impose phytosanitary measures on imported products to protect their country's plant health status and export market access for their products. These measures protect their country's plant-based agriculture and forest industries, and the environment. The NPPO must ensure that these import conditions are technically justified to facilitate compliance with international trade regulations of the World Trade Organisation's Agreement on the Application of Sanitary and Phytosanitary Measures. This rules-based regulatory system aims to ensure safe free trade and, where possible, harmonisation of commodity-based phytosanitary measures. The Australian NPPO enforces long-standing measures for forest products to protect Australian plantation forests and the wider natural environment. These measures and associated technical justification will be discussed in relation to different forest product commodity types to provide industry with the awareness of the system that is protecting Australia's forestry future.

Presenter: **Chris Howard** represents the Commonwealth Department of Agriculture, Fisheries and Forestry where he has worked in biosecurity risk advice and policy roles since 2012, mainly focussing on timber and wood products.

Overview of Monitoring and Management of Autumn Gum Moth (*Mnesampela privata*) in the GT

Dianne Patzel, *University of South Australia*

Abstract: The Green Triangle, one of Australia's largest forestry regions, spans approximately 300,000 hectares of softwood (*Pinus radiata*) and hardwood (*Eucalyptus globulus*) plantations. This region significantly contributes over \$1.5 billion to the economies of South Australia and Victoria and \$3.4 billion to the Australian economy annually. The productivity of the hardwood estate can be threatened by the Autumn Gum Moth, *Mnesampela privata* (Lepidoptera: Geometridae), a major defoliator of *Eucalyptus globulus* in temperate Australia. Recent defoliation events in the Green Triangle have prompted increased monitoring, management, and research efforts aimed at minimising the pest's impact. This presentation provides an overview of the pest-specific monitoring program and industry collaboration within the context of the Green Triangle Forest Health Group to support sustainable forest management across the region.

Presenter: **Dianne Patzel** is a Silviculturist at the University of South Australia based the Forestry Centre of Excellence in Mt Gambier and holds a Bachelor of Applied Science (Forestry) from Southern Cross University. She has 15 years of plantation forestry experience in both the Green Triangle and Western Australia in various company roles. Di has been working with the University of South Australia for the last 5 years managing the Green Triangle Forest Health and Biosecurity Program on behalf of nine plantation growers. She also supports and lead other research projects for FCoE/UniSA.

Biological control of giant pine scale in Australia

Dr Umar Lubanga, Dr Greg Lefoe, Agriculture Victoria

Abstract: The eastern Mediterranean insect giant pine scale (GPS) *Marchalina hellenica* is an exotic pest that was detected feeding on the novel host *Pinus radiata* in Adelaide and Melbourne in late-2014. GPS is a forest health threat in Australia because high population densities can lead to a decline in tree health and reduction in insect biodiversity. The commercially important *P. radiata* has been shown to be highly susceptible to GPS infestation. Tree destruction is currently the only effective method of preventing or slowing spread of the pest from urban and peri-urban areas to commercial pine plantations. A biological control feasibility study conducted in Australia and Greece identified the predatory fly *Neoleucopis kartliana* (Diptera: Chamaemyiidae) as the most promising biological control agent of GPS. Recent studies in Greece, involving field surveys and molecular analyses, revealed that the predatory fly occurs as a species complex comprising three species, two of which are undescribed. It is likely that these closely related predatory flies play an important role in suppressing GPS populations in Greece. Prey-specificity testing of one of the predatory flies showed that it is highly specific to GPS; an essential criterion for biological control agents proposed for introduction. Further research aims to study the ecological interactions between GPS and its three predators, and the predators' degree of specificity. The predatory flies have considerable potential for the long-term, sustainable management of GPS, pending favourable results of risk assessment, and regulatory approval to introduce one or more of the candidate biological control agents to Australia.

Presenter: **Dr Umar Lubanga** is a biological control scientist working at Agriculture Victoria's AgriBio Centre, part of the Victorian Department of Energy, Environment and Climate Action (DEECA). Dr Lubanga completed his PhD at La Trobe University in 2016, where he studied the biology and behavioural ecology of an Australian native psyllid. At Agriculture Victoria, Dr Lubanga studies the classical biological control of pests and weeds of forestry, and has contributed to the development of new biological control agents for giant pine scale, invasive blackberry, and wandering tradescantia.

BREAKOUT #26 – Plantation management, learning from history

Lessons from the last 50 years of plantation forestry in SA

David Geddes, Mike Bleby, Peter Bulman, Lew Parsons, Peter Zed

Abstract: Based on our book, "Evolution of the plantation forest industry in South Australia: 1875-2025, with emphasis on the last 50 years" our proposed panel will explore key lessons from past forestry practices in SA, and how they inform future strategies. With David Geddes as facilitator, our panellists are Mike Bleby, Peter Bulman, Lew Parsons and Peter Zed.

They will discuss advancements, challenges, and best practices in their respective fields, offering insights on how to build a more sustainable and resilient forestry sector.

Presenters: **David Geddes**, BSc (For): David's early career was with Woods and Forests in management roles in silviculture, protection, harvesting and timber processing. He formed his forestry consulting business in early 1994, specialising in risk analyses, silviculture and valuations. He has worked on forestry projects in every plantation region of Australia, as well as in New Zealand, Guyana and Fiji. Based in Mount Gambier, South Australia, he has served on many forest industry boards.

Michael Bleby, OAM, BSc (For): Michael's 40-year career spanned all aspects of forest operations, across the South East, Mid North and Mount Lofty Ranges. He was District Forester at Mount Crawford and Mount Burr during extensive replanting of the 1983 Ash Wednesday fire area. Subsequently he worked in Operations Development, Harvesting and Sales. He has lectured for Southern Cross University, served on the Natural Resources Board and is a writer of forestry memoirs.

Pete Bulman, BSc (For), Fellow of Forestry Australia: After time in pine plantation management, Peter managed the Monarto Tree Planting Project. Later, he managed the Native Plant Section. His significant publications include *Farm Revegetation Design*, *Farmtree\$ for the Mount Lofty Ranges* and *Growing Broom Bush*. Since 1993, he has promoted the profession via the Foresters Forest, a voluntary community-based urban forest in Adelaide. His business, Farm Tree Systems, provided a range of services, and he is still enjoying his tree farm, Bracken Ridge.

Lew Parsons, BSc (For): Lew is a Director of Wokurna Forestry, a forestry consulting company based in Mount Gambier which specialises in harvesting management, forest utilisation and marketing.

Customers include harvesting contractors, forest owners and wood processors. Prior to 2006, Lew worked for ForestrySA, where he managed harvesting and marketing operations for 20 years.

Peter Zed, BSc (For) Hons. Peter started his career with Woods and Forests in research, prior to working in senior executive roles with Fiji Pine, Softwood Holdings, CSR Timber Products, Weyerhaeuser and ATP. In 2008, he established Omega Consulting, a business that works in the Australian and international forestry sector and focuses on forest and processing valuations, operational productivity, industrial restructuring and market development. He has worked on projects throughout Oceania, Asia, Africa and North America.

BREAKOUT #27 – Future directions for forest certification

FSC Certification of National Parks – A Global Model for Sustainable Public Land Management and Ecosystem Services

Annah Agash, *Forest Stewardship Council*

Abstract: The Forest Stewardship Council (FSC) certification of three national parks in Uganda—Bwindi Impenetrable National Park, Rwenzori Mountains National Park, and Kibale National Park—marks a pioneering step in integrating responsible forest management with conservation efforts. Covering 211,100 hectares, this certification, achieved in collaboration with the Uganda Wildlife Authority (UWA), demonstrates how FSC principles can enhance biodiversity protection, sustainable tourism, and community engagement within protected areas.

This initiative sets a global precedent for extending FSC certification to public lands, ensuring that environmental values are actively enhanced rather than passively maintained. By applying FSC's rigorous sustainability standards, national parks and conservation reserves worldwide can benefit from improved governance, ecosystem resilience, and strengthened local partnerships. Additionally, the certification process unlocks the potential for FSC Ecosystem Services certification, which can provide verified claims for carbon sequestration, watershed protection, and biodiversity conservation, cultural knowledge etc. This presents new opportunities for governments and land managers to access financial incentives and market-based mechanisms that support the long-term conservation of public lands.

This presentation will explore Uganda's experience as a scalable model for embedding FSC certification in public land management. It will examine lessons learned, challenges encountered, and

opportunities for broader implementation, positioning FSC certification as a key mechanism for integrating conservation objectives with sustainable development, ecosystem service valuation, and financial sustainability on public lands worldwide.

Presenter: Annah Agash has 24 years of experience in forestry, natural resource management, and rural development. Annah is the Deputy Director FSC Africa – she leads the implementation and expansion of forest management certification and the FSC Ecosystem Services portfolio across Africa.

Since joining FSC in 2014, Annah has held key roles advancing smallholder and community certification, including Eastern Africa Sub-Regional Coordinator and Smallholder Support Manager at FSC International. She pioneered the Continuous Improvement approach to certification, now used globally to support smallholders.

Before joining FSC, Annah advised Uganda's private sector on reducing environmental impacts and worked with NGOs such as Africare to integrate natural resource management into development programs. She holds degrees in Agroforestry and Forestry from Makerere University and a Postgraduate Diploma in Project Planning and Management.

Effective Stakeholder Engagement – Implications for Forest Managers

Ross Garsden, *BSI*

Abstract: Effective stakeholder engagement is recognised as a fundamental requirement of forest certification schemes. At a strategic level, forest managers are required to engage with interested parties in the development of publicly available forest management plans. The purpose of engagement is to identify the needs and expectations of interested parties. Likewise, at an operational level, forest managers are required to facilitate and encourage meaningful engagement in the development of operational plans.

While the forest manager is required to be cognisant of the needs and expectations of interested parties, the forest manager is also required to determine which of these needs and expectations will become compliance obligations. The forest management plan will then articulate how those needs and expectations will be met.

The PEFC and FSC forest certification schemes have similar requirements for engagement. In Australia and New Zealand, the PEFC scheme requires the forest manager to '*establish, implement and maintain the process(es) needed for facilitating effective, culturally appropriate, meaningful and timely stakeholder engagement.*' Culturally appropriate engagement has been a challenge for some forest managers, particularly those managing public forest estates.

The challenge for forest managers is the development of effective mechanisms for meaningful engagement,

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giving appropriate opportunity for interested parties to articulate their views in a timely manner.

This presentation will outline the requirements for effective stakeholder engagement at both the strategic and operational level. It will also provide an opportunity for discussion and allow participants to share experiences.

Presenter: Ross Garsden has qualifications in forest science and education, with over 30 years' experience in management systems auditing. Ross represented Forestry Australia as a member of the Standards Review Committee responsible for the recent review of the scheme rules that underpin the implementation of the Australian/New Zealand Standard for Sustainable Forest Management. Ross' experience also includes senior forest policy roles with the NSW and Victorian governments relating to the management of native forests and plantations. For the past 15 years he has been Lead Auditor with BSI, auditing the forest management systems of many of Australia's major forestry organisations.



From Forest to Shelter – A Journey of Sustainability with FSC Certification

Melanie Robertson, Forest Stewardship Council

Abstract: As the global demand for sustainable forest management grows, certification schemes like the Forest Stewardship Council (FSC) play a crucial role in ensuring responsible forestry practices, ethical supply chains, and conservation outcomes. This presentation explores the New Zealand case study of FSC certification, following the journey of sustainable timber from forest to finished product, demonstrating its environmental, economic, and social impact.

The case study showcases the collaboration between:

- Timberlands, an FSC-certified forest manager committed to sustainable harvesting.
- Abodo Wood, a leader in timber innovation, developing durable, carbon-friendly, and non-toxic wood products sourced from FSC-certified forests. Abodo's approach exemplifies how sustainable design and material innovation can transform the built environment.

Australia's National Research & Innovation Institute for Forest & Wood Products

AFWI is transforming and growing the nation's forest and wood products sector - uniting industry, research and government to drive innovation across the forest-to-timber manufacturing supply chain and forest-climate solutions.

Our 2025–2030 Strategic Plan focuses on:

- **Healthier, more productive forests** informed by science, digital tools and **First Nations knowledge**
- **Maximising wood fibre** through **value-added manufacturing** and bioproducts
- **Climate solutions** placing timber fibre at the heart of Australia's **net zero transition**
- **Engineered wood for modern housing** to boost affordability, supply and performance

How we deliver:

- ✓ **National Open Calls** for collaborative R&D
- ✓ **Capability via three Research Centres** with 20+ partners
- ✓ **Strategic partnerships** linking science and markets
- ✓ **Industry forums** that connect ideas with opportunities
- ✓ **Developing R&D talent** to accelerate innovation
- ✓ **Thought leadership** shaping the sector's future

Supported by the Commonwealth Department of Agriculture, Fisheries and Forestry and hosted by the University of Tasmania, AFWI connects Australia's forest and wood products sector with global best practice in innovation and knowledge.

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- Wellington Zoo, an FSC promotional licence holder demonstrating a strong commitment to sustainability by incorporating FSC-certified wood into its Snow Leopard shelter and actively educating visitors on the importance of responsible forestry.

This example highlights how FSC certification extends beyond forestry, influencing market preferences, conservation efforts, and consumer awareness. It aligns with FSC International's strategic priorities by:

- Strengthening the relevance and benefits of certification across stakeholders.
- Enhancing the market uptake of FSC-certified products through innovative timber solutions.
- Fostering alliances that integrate forest values into broader land-use decisions.

By illustrating how FSC certification connects sustainable forest management with real-world applications, this presentation underscores the importance of responsible forestry in supporting biodiversity, ethical business practices, and sustainable development goals. The New Zealand experience serves as a scalable model for global application, demonstrating how collaboration between forestry, industry, and conservation sectors can drive meaningful environmental outcomes.

Presenter: Melanie Robertson is the CEO of FSC ANZ and a visionary leader with expertise spanning health and renewable energy. She is a strong advocate for sustainable forest management and has held senior roles delivering major infrastructure projects and driving regional growth.

Based in regional Victoria, Melanie has a strong passion for supporting rural and regional communities. Holding degrees in science, health, engineering and management, she fosters cross-sector collaboration to advance FSC certification and responsible sourcing practices. She is deeply committed to supporting Indigenous communities in forestry, ensuring their voices, knowledge and opportunities are central to the sector's future.

Update on the EU Deforestation Regulation and the response through Australian Standards

Simon Dorries, *Responsible Wood*

Abstract: The European Union has introduced the EU Deforestation Regulation (EUDR). This regulation prohibits forestry and agricultural products from entering the EU after 31st December 2025 where their production was a cause of deforestation after December 2020. This presentation will provide an update on the EUDR, its implementation, and actions being taken to address the EUDR through Standards.

Presenter: Simon Dorries is the Chief Executive Officer of Responsible Wood (formerly the Australian Forestry Standard Ltd). Responsible Wood is

accredited as a Standards Development Organisation by Standards Australia to write, maintain and update the Australian Standards which underpin the Responsible Wood Certification System. These Standards include AS4707- Chain of Custody for Forest Products and AS/NZS 4708 Sustainable Forest Management. Responsible Wood is the National Governing Body for PEFC in Australia.

Simon holds a Bachelor of Applied Science and has worked in the Forest and Wood Products Industry for over 40 years.

The Role of Forest Certification in Securing Australia's Future

Matt de Jongh, *Responsible Wood*

Abstract: As Australia faces increasing challenges in balancing economic development, environmental conservation, and community expectations, the role of sustainable forest management has never been more critical. Certification schemes such as Responsible Wood provide assurance that forest products are sourced from well-managed forests, fostering public trust and social acceptance.

An independent report comparing Responsible Wood and FSC has demonstrated the credibility and sustainability of both schemes, reinforcing their role in responsible forest stewardship. These findings highlight that certification is not just a market tool but a crucial mechanism for ensuring long-term forest sustainability, supporting biodiversity, and mitigating climate change.

Further strengthening this understanding, the University of Melbourne is currently conducting a research project investigating the impacts of chain of custody and forest certification. This study will provide valuable insights into how certification contributes to sustainable supply chains and the broader socio-economic benefits for regional communities.

This presentation will explore how Responsible Wood certification aligns with Australia's future sustainability goals, supports social licence, and enhances community engagement. By fostering collaboration across industry, government, and stakeholders, certified forests can continue to deliver economic, environmental, and social benefits while ensuring long-term stewardship of Australia's forest resources.

Presenter: Matt de Jongh is a forester with over 20 years' experience in both operational and policy roles and is also a Director and Registered Forestry Professional for Forestry Australia. Matt is the Sustainability Manager for Responsible Wood, which is the national governing body for the Programme for the Endorsement of Forest Certification (PEFC), the world's largest forest certification scheme. Matt is passionate about promoting and communicating about sustainable forest management and ethical and responsible supply chains.

BREAKOUT #28 – Technology in forest management and restoration

Mapping and evaluating the commercial suitability of the native forest estates for timber production in northern and southern NSW, Australia

Dr Masoomah Alaibakhsh¹, Mr Nick Cameron², Dr Christine Stone¹, Mr John Samuel¹, Dr Gabriele Caccamo³

¹NSW Department of Primary Industries and Regional Development, Forest Science, Parramatta, Australia. ²North East NSW Forestry Hub, Camperdown, Australia. ³NSW Department of Planning, Housing and Infrastructure, Parramatta, Australia

Abstract: Timber harvesting in native forests is a controversial topic across Australia. The harvesting has widely been criticised or even banned in public forests in some Australian states. NSW, nevertheless, permits native timber harvesting at private property due to the environmental, economic and social benefits of sustainable forest management. To map potential areas for private native timber harvesting in eastern NSW, a comprehensive methodology has been developed and implemented. Accordingly, the Private Native Forest areas available and commercially suitable for timber harvesting have been mapped using more than forty spatial datasets. These datasets identify unavailable areas including environmentally protected, reserved and restricted forests for timber production in accordance with the NSW PNF code of practices.

Furthermore, spatial analysis of six parameters – size of Net Harvestable Area within a private property, properties' distance to wood processing facilities, slope between 20- 30 degrees, terrain roughness, Yield Association Groups, and Site canopy height – was conducted to evaluate and rank commercial suitability of timber within private properties. Over 11,000 private properties, with land size more than 25 ha and net harvestable native forest areas more than 15 ha, were assessed and ranked across northern and Southern NSW. The analysis revealed that approximately 0.2% of the properties rank as 'Very High' value and 16% as 'High' value for timber production. Majority of the assessed properties (61.94%) had a 'Medium' value for the harvesting across the assessment area. This manuscript presents the developed methodology and discusses the results and findings of the spatial analysis.

Presenter: Dr Masoomah Alaibakhsh is a researcher, spatial analyst and modeller with the NSW DPIRD's Forest Science team. With over a decade of expertise, she excels in spatial data analysis, data visualisation, mapping, and change detection.

Masoomah has been a member of the Forest Science team for more than eight years, contributing to statewide forestry research & operational projects including PNF projects. She has authored over ten journal papers, formal and technical research reports. Recently, she published two NSW baseline datasets – land tenure and forest extent – on the NSW SEED data portal, and three forest extent by tenure PBI dashboards.

The Changing Face of Fire in Australia – and How Technology Can Help Us Adapt

Rob Vernon, Indicium Dynamics

Abstract: Australia's fire seasons are becoming more intense, unpredictable, and devastating.

Driven by shifting climate conditions, prolonged droughts, and increased fuel loads, bushfires are igniting in regions that have historically been less fire-prone.

Dry lightning ignitions, which are difficult to forecast and nearly impossible to prevent, are now responsible for a significant portion of large-scale fires, often occurring in remote and rugged landscapes where response times are critical.

The traditional reliance on fire towers, community reports, and manual suppression efforts is no longer sufficient. As bushfires become more extreme, early detection, smarter resource allocation, and proactive fire management strategies must evolve to meet the challenge.

In this session, we will examine how cutting-edge AI-powered fire detection, real-time fuel moisture monitoring, and digital decision support systems can transform how we prepare for and respond to fires. By integrating computer vision, machine learning, geospatial analysis, and IoT-enabled environmental sensors, new technologies can provide earlier warnings, automate risk assessments, and help emergency services make data-driven decisions in real time.

However, technology alone is not a silver bullet. These solutions must work in partnership with fire agencies, land managers, and local communities to enhance—not replace—existing fire management expertise.

This session is designed for fire agencies, land management professionals, and policymakers who are seeking practical, technology-driven solutions to improve bushfire resilience at scale. The fires of the past will not return – the fires of the future demand new strategies, tools, and partnerships. Explore what's next in the fight against Australia's evolving wildfire threat.

Presenter: Rob Vernon has a successful background in owning and operating technology businesses. He is passionate about technology playing a role in mitigating climate change and believes the opportunity to combine the incredible talents and capabilities of applied technology and engineering companies to protect people, place, and planet, is both compelling and rewarding.

The use of tree databases, remote sensing and artificial intelligence to assist in urban forest biosecurity preparedness and response

David Smith, ArborCarbon

Abstract: There are many threats to Australian Urban forests from exotic and endemic insects and pathogens. Biosecurity surveillance programs focus on mitigating the risks posed by these biotic agents. Understanding pest's pathways and their hosts is essential for preparedness and surveillance. Urban forests around high-risk entry pathways can be used as sentinels for early detection, but assessing large numbers of trees can be time-consuming.

In Melbourne, Australia, many local governments maintain accurate tree databases that allow for precise host mapping within public land. However, this is not the case for all other cities in Australia and remains a challenge within private land. Host mapping during a response is time- consuming and resource intensive; generally conducted in vehicles and foot patrols. Recent work has shown that using tree databases, ArborCamTM airborne remote sensing camera system mounted to a fixed-wing aircraft along with artificial intelligence allows for automation and detection of host trees with damage.

The use of this multi-spectral data provides information on tree health, size, shape and detailed information on vertical and horizontal structure, and spectral and thermal information for object identification and measurement. The benefit of the system is that it is focused on detecting spatial and temporal changes in vegetation and particularly tree health across all land tenures enabling early response or evaluation of control activities. Tree databases and remote sensing can aid in identifying areas for targeted surveillance, speed up responses and increase efficiency of on- ground surveillance.

Presenter: David Smith from ArborCarbon brings over 25 years' experience as a forest pathologist / entomologist within previous Victorian government departments responsible for forest management (both urban, plantation and native forests), and within the University of Melbourne. David has worked as Senior Forest Biosecurity Officer with Agriculture Victoria as scientific advisor to the Chief Plant Health Officer.

He has provided technical advice to local, state and federal governments, along with National Forest Health and Biosecurity Committee (which includes Urban Forests), and the Victorian Committee for Amenity Tree Health, on endemic and exotic pests and pathogens of trees and wood products.

Tree pruning but not as you know it; reducing fire risk with a semi-autonomous pruning machine in Radiata pine plantations

Braden Jenkin, Sylva Systems

Abstract: This paper presents the outcome of a National Institute for Forest Products Innovation project to test a German manufactured semi-autonomous pruning machine in Pinus radiata plantations in Gippsland to assist in reducing fire risk. While only one Australian plantation manager is pruning trees for clearwood on a commercial scale (Hoop pine in southern Queensland), post-Ash Wednesday fire analysis demonstrated the benefit of strategic fuel modified zones in the Green Triangle. Pruning of softwood plantations in Australia is a part of a tool-box of interventions to decrease fire risk and intensity by breaking the fuel continuum from plantation floor to tree crowns. However, current manual pruning is labour intensive coupled with labour supply challenges and limited in height due to safety concerns. Mechanical pruning is not new with a number of past units tested (e.g. Sachs Tree Monkey in the 1960s) but none have been commercialised. This project modelled the impact of pruning on fire behaviour (how high to prune to make a material difference) and developed an understanding the limits of the mechanical pruning technology (how high can we prune). A technology assessment included these factors combined with safety, cost, repairs, maintenance needs and other operational nuances after pruning of over 1,000, 7 to 15 year-old individually measured trees to defined the limitations and potential of the current technology. This formed the basis of a conceptual design for a technology evolution.

Presenters: Braden Jenkin has over 40 years' experience and Forestry Australia membership. Braden is an independent forestry consultant with a Bachelor of Science (Forestry) and an MBA underpinning his practicing the business of forestry by developing, participating in and leading projects. In 1990 Braden completed a Gottstein Fellowship studying eucalypt plantation silviculture abroad. Braden has a deep knowledge of forestry as a business based on operational roles, undertaking research and participation in extensive field work in Australia and internationally. A key intent is seeking to understand 'the why' behind all aspects to develop a holistic understanding of systems to generate solutions.

Using drone-based data to increase site selection efficiency and a supervised learning approach to eligibility classification for Philippines reforestation

**Mr Calum McRae¹, Dr Nick Kokkas¹,
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Abstract: Fast and accurate site selection is essential in effective reforestation rollout. Typically, site identification is via spaceborne imagery or existing land cover datasets. However, in many tropical regions, including the Eastern Visaya in the Philippines, this approach is difficult. We investigate the incorporation of drone data from the DJI Mavic 3-multispectral, Zenmuse L1 and Altum PT Multispectral, in attempts to circumnavigate these hurdles and create local eligibility classification using random forest classification.

Tropical spaceborne imagery is often impeded by cloud cover, leading to a highly reduced catalogue of usable imagery. We therefore use drone-based photogrammetry to validate site suitability in a reforestation-for-carbon community-based project in the Philippines, producing more accurate classification with no temporal lag. Additionally, follow up imagery generated highly accurate net-planted areas (NPA) and creates NPA products, required by stakeholders and auditors.

We examine the accuracy of several deep-learning, global canopy height estimates such as META's 1m Canopy Height Model and the ETH Global Canopy Height Product. We compare these datasets alongside drone-derived multispectral data as inputs for training a random forest classifier which distinguishes suitable and non-suitable planting sites.

We also discuss community characteristics such as land tenure issues and overall site access conditions that need to be considered, along with institutional and regulatory requirements to be satisfied as part of drone operations.

Presenter: **Calum McRae** is a geospatial analyst at the University of the Sunshine Coast. He has a background in drone based LiDAR and photogrammetry in forestry contexts. Currently he is working alongside research teams and reforestation efforts at the University of the Sunshine.

BREAKOUT #29 – Imagine this: Future scenarios for Australia's plantation estate

Lynda Bull, *Lynea Advisory*

Tammy Auld, *Timberlands Pacific*

Rob de Fégely, *AR&SM de Fégely Partnership*

Diana Hallam, *AFPA*

Braden Jenkin, *Sylva Systems*

Andrew Hurford, *Hurford Forests*

Abstract: Australia's 1.7 million-hectare plantation estate underpins the nation's timber supply, regional economies, and Australia's low-carbon ambitions - but what will it look like in a decade or two? *Imagine This: Future Scenarios for Australia's Plantation Estate* invites a panel of forward-thinking forestry leaders to explore a range of possibilities and how these would impact the plantation estate.

What if Australia adopted Europe's approach to bioenergy? How would an increase in steel framing reshape timber demand? What happens if a housing boom sends construction needs soaring? What would happen if a plantation tax was introduced? Together we'll examine the economic, environmental, and social impacts of these scenarios and identify the strategic actions needed today to ensure plantations remain resilient, productive, and ready for whatever future unfolds.

Panellists: **Tammy Auld** commenced her career 25 years ago at ForestrySA, and her experience spans the government and private sector in softwood and hardwood plantation operations, Forest Management Systems, and marketing. She supported forestry businesses as a safety and management consultant before joining Timberlands Pacific where she is currently Acting in the role of CEO-Operations. Tammy is Chair of the South Australian Forest Products Association and Co-Chair of the Forest Industry Advisory Council for SA advocating for ongoing forest industry advancement. Tammy holds a Ba Forest Science from the University of Melbourne, an MBA from Deakin University and is a Graduate of the Australian Institute of Company Directors.

Rob de Fégely AM has worked in Australian forestry for over 40 years starting his career in softwood plantations and natural forests in southern New South Wales, before becoming a consultant in the early 1990's working on major forest industry reviews that led to the National Forest Policy Statement, Regional Forest Agreements and Plantations 2020. He was Chair of the Commonwealth Forest Industry Advisory Council from 2015 to 2023 and has served as a Non Executive Director of VicForests and is currently a Non-Executive Director of Forestry Corporation of NSW and Chair of the Board of Sustainable Timber Tasmania.

Prior to becoming AFPA CEO in 2024 **Diana Hallam** served in a number of senior government, political and corporate roles, including as Chief of Staff to a former Deputy Prime Minister and Minister for Agriculture, Fisheries and Forestry. Diana has a Bachelor of Arts (Hons) and a Master of Science and Technology (Aviation) from UNSW, a Master of International Law from the ANU and a Graduate Diploma of Professional Communications from the University of Southern Queensland. Diana is passionate about rural and regional Australia. Originally from a sugarcane and beef cattle farming family in northern NSW, she now resides in the NSW Southern Tablelands with her husband, a prime lamb and fine wool producer.

Andrew Hurford serves as Chair of Directors for The Hurford Group. He began his career in 1980 as an apprentice carpenter and has since worked across the building construction, supply, and manufacturing sectors. Andrew currently holds the position of President of Timber NSW and serves as Chair of the NE NSW Forestry Hub. He is also a member of the NSW Forest Industry Advisory Group.

Under his leadership, Hurford's has developed into a vertically integrated operation that encompasses hardwood growing, processing, wholesale distribution, exporting, and importing. Andrew is deeply passionate about cultivating high-quality, durable hardwood from both regrowth and plantation forests.

Braden Jenkin has over 40 years' experience and Forestry Australia membership. Braden is an independent forestry consultant with a Bachelor of Science (Forestry) and an MBA underpinning his practicing the business of forestry by developing, participating in and leading projects. In 1990 Braden completed a Gottstein Fellowship studying eucalypt plantation silviculture abroad. Braden has a deep knowledge of forestry as a business based on operational roles, undertaking research and participation in extensive field work in Australia and internationally. A key intent is seeking to understand 'the why' behind all aspects to develop a holistic understanding of systems to generate solutions.

Dr Lyndall Bull is a globally recognised forest sector leader with specific expertise in the bioeconomy and innovation in the forest sector. Lyndall has worked in a senior capacity in the government, private and education sectors.

Lyndall is Principal of Lynea Advisory, a specialist consulting business serving the global forest sector. She is also the Co-Chair of the World Economic Forum's Global Future Council on the Forest-Economy and Co-Lead for the IUFRO Task Force on Scaling-Up Science-based Forest-Sector Innovation. Until recently, she was the Forestry Innovation Coordinator at the Food and Agriculture Organization (FAO) of the United Nations. She has a PhD in innovation in the forest sector from the University of Melbourne.

BREAKOUT #30 – Future forestry skills

Future Forestry Skills: Insights and Innovations from the Forestry Workforce Training Program

Anthony Walsh, *ForestWorks*

Abstract: Australia's forests are facing increasing demand and complexity - socially, ecologically and economically. At the same time, the sector is grappling with workforce shortages, outdated training systems, and barriers to diversity and participation. The Forestry Workforce Training Program (FWTP), a landmark initiative led by ForestWorks and funded by the Australian Government, is addressing these challenges head-on.

This interactive workshop will share insights from several of the Program's 22 projects. Attendees will hear first-hand how these initiatives are reshaping training pathways and workforce development in forestry—including the design of scalable, flexible training models; integration of stackable micro-credentials and virtual tools; and the development of targeted strategies to support the inclusion of First Nations people and women in the sector.

With a strong focus on collaboration, the session will encourage open dialogue between panellists and audience members. Participants will explore what's been achieved, what's working, where challenges remain, and how these innovations can be adopted and sustained across Australia's forest and wood products industries. This is a must-attend session for anyone invested in the future capability and resilience of the forestry workforce.

Presenter: **Anthony Walsh** has over 25 years of experience in education—more than half of which has been spent as a CEO and Director – Anthony brings a powerful blend of strategic leadership, innovation, and deep sector knowledge to workforce development. After successfully running his own business for more than 15 years, he transitioned into the education sector, where he has pioneered transformative programs that have significantly boosted student enrolment, engagement, and satisfaction.

His expertise spans adult education, vocational training, and corporate learning, underpinned by a strong commitment to inclusive and future-focused education. He has played a pivotal role in evolving training delivery models, integrating flexible learning pathways, and positioning institutions as leaders in educational excellence.

Anthony holds an MBA with a major in Leadership and Communication from Deakin University, alongside multiple diplomas in vocational education, training design, and assessment systems from HBA

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Learning Centre and The University of Melbourne. His qualifications reflect a lifelong dedication to learning and a passion for empowering others through education.

As a key contributor to the Forestry Workforce Training Program, he brings strategic insight and practical experience to the challenge of building a resilient, diverse, and capable forestry workforce for Australia's future.

BREAKOUT #31 – Adapting to climate change

Monitoring Australian forests: how understanding change in the recent past can support management for the future

Professor Belinda Medlyn¹, Professor Brendan Choat¹, Dr Laura Williams¹, Ms Ruiling Lu², Dr Bin Wang¹, Dr Raphael Trouve³, Professor Patrick Baker³

¹Western Sydney University, Penrith, Australia.

²East China Normal University, Shanghai, China.

³University of Melbourne, Melbourne, Australia

Abstract: Australia's climate is changing rapidly, with increasing temperatures, more frequent heatwaves and increasing drought severity occurring as a result of rising atmospheric CO₂ concentrations. An understanding of what impacts these changes have already had on forest tree growth and function can help guide forest management and restoration for the future.

Here we report the results of several initiatives monitoring recent change in Australia's forests. Firstly, we have compiled a continent-wide dataset of permanent sample plots in native forests, containing records of >2700 forest plots over the last 80 years, and covering four major biomes: tropical savanna, tropical rainforest, warm temperate and cool temperate forest. Analysis of the dataset shows a consistent pattern of increasing tree mortality rates over time in all four biomes, and a decline in the recruitment rate of new stems, particularly in cool temperate forests.

Secondly, we have monitored forests showing drought-related dieback to quantify the rates of stem loss and recovery. A citizen-science initiative, the Dead Tree Detective, is used to identify dieback occurrences. Plots established in dieback areas show stem mortality rates of 20-30% despite resprouting following the breaking of the drought, with most species in the plots being equally vulnerable.

We discuss how these initiatives can be coupled to remote-sensing methods of monitoring, noting that ground-based monitoring continues to play a

critical role in validating and interpreting remotely-sensed data. Finally, we summarise how ongoing monitoring of Australia's forests can help support their management for the future.

Presenter: Belinda Medlyn is Distinguished Professor of Ecosystem Modelling at the Hawkesbury Institute for the Environment, Western Sydney University. Her research work focuses on using information from plant and ecosystem scale experiments to develop models predicting vegetation function in response to global change. Her work on predicting drought mortality led her to establish the Dead Tree Detective citizen science initiative. She is an Australian Research Council Laureate Fellow and a Fellow of the Australian Academy of Science.

The importance of and challenges in doing applied research: adaptive management in the Tasmanian forest practices system

Amy Koch, *Forest Practices Authority*

Abstract: The Tasmanian forest practices system aims to achieve sustainable forestry management while balancing environmental, social, and economic outcomes across public and private lands. The forest practices system operates under an adaptive management framework and relies on applied research to develop, test and improve management of biodiversity in forestry settings. This talk uses case studies to explore the challenges when doing applied research in this setting. Key challenges include:

- Detection limitations – locating and studying rare and threatened species.
- Statistical constraints – obtaining sufficient sample sizes to draw robust conclusions.
- Resource scarcity – balancing research needs with available resources.
- Methodological questions – developing and implementing appropriate scientific methods for complex natural systems.
- Uncertainty management – addressing and incorporating high levels of uncertainty, particularly in the context of climate change

Through further case studies, we demonstrate the importance of doing applied research, despite the challenges, so that management strategies are reviewed and improved and achieve the intended conservation outcomes for biodiversity.

Presenter: Amy Koch is the Biodiversity Research Manager at the FPA and a Research Associate with the University of Tasmania. She has worked in the area of biodiversity conservation for almost 20 years, seeking to do and facilitate research that will help improve management of natural values in a production forestry setting.

Stressed country and communities, yet managers are further from the issues than ever...can we fix it, yes we can!

Ewan Waller, Bec Hemming, East Gippsland CMA

Abstract: Our country and communities are stressed, yet managers are further from the people and the land and forests issues than ever before.

East Gippsland is a living example, as a national hot spot for extreme events. It is the second most impacted region in Australia.

Extreme events are more intense, frequent and widespread, causing extensive damage to our asset and our current forest management practices are not working. People are stressed and frustrated about the lack of leadership and collaboration. Whole catchments and ecosystems are impacted, not to mention the far greater cultural, social and economic impacts.

Communities are exhausted and many are just giving up.

There is an opportunity to give land managers an alternative way of managing. A whole of country / whole of catchment approach using collaborative leadership. Where science, local knowledge and experience, traditional ecological knowledge, user groups and community aspirations are balanced to articulate the outcomes and actions required.

This approach is proven and has worked for decades. NRM regions are experienced in leading collaborative landscape scale programs. Some examples across Victoria include:

- Love our Lakes | Home
- Kitjarra-dja-bul Bullarto langi-ut – Corangamite CMA Tri-State Murray NRM Regional Alliance
- Budj Bim Connections | Glenelg Hopkins CMA

This is not an expensive or overly complex solution to changing the way we manage the land. This is built around far greater collaboration and simple structures, bringing people together at all levels to manage forests collectively. We have to and can do better to protect Country and the community.

Presenter: Ewan Waller is a proven land, forest and bush fire manager and consultant with forty years' experience from the field to executive level. His recent work has included advising state governments, their agencies and companies across Australia on strategic and practical approaches to reduce the risk from bush fires. This guiding work has delivered significant change to critical programs to protect assets. Ewan is the current Chair of East Gippsland Catchment Management Authority.

BREAKOUT #32 – Technology and forestry

Expert panel session – Technology in Forestry: From Mechanisation to Forestry 5.0

Steve Walker, Terrafolia

Shona Heading, HQP

Adrian Wapling, John Deere

Francis Richardson, Orana Enterprises

Paul Salmon, University of the Sunshine Coast

Mark Brown, University of Sunshine Coast

Abstract: This expert panel will explore the transformative impact of technology on Australia's forestry and wood products sector, examining how innovation has driven the industry's evolution from mechanisation (Forestry 3.0) through Forestry 4.0 (Industry 4.0 applications in forestry) to the emerging paradigm of Forestry 5.0, as outlined in the attached research papers. The discussion will highlight how cutting-edge technologies—particularly human-centered artificial intelligence (AI), robotics, automation, data analytics, and smart supply chains—are reshaping forest management, operations, and wood processing while ensuring sustainable, productive, and resilient landscapes.

The panel will feature perspectives from research leadership and applied industry expertise, bridging the gap between technological potential and practical implementation in Australia's forest sector.

Key themes for discussion:

- Forestry 4.0: The Digital Transformation of the Forest Supply Chain
- How digital tools like IoT, automation, digitalisation of forestry supply chains remote sensing, AI-driven logistics, and predictive analytics have improved efficiency
- Emerging Forestry 5.0: The Next Evolution
- Opportunities to enhance forest planning, harvesting operations, and ecosystem management including biodiversity conservation, carbon sequestration, and climate resilience.
- Industry applications and lessons from other sectors
- How forestry can learn from Industry 5.0 and Agriculture 5.0 models.
- What does Forestry 5.0 mean for skills, training, and safety in forest operations?
- Overcoming barriers to adoption infrastructure and investment needs policy and regulatory frameworks collaboration opportunities

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Presenters: **Steve Walker** is a forester and strategic leader with three decades of experience in Australia, New Zealand and internationally. He has overseen plantation management at scale in two countries, led multi-million-tonne wood supply programs, and developed supply chains linking forestry assets in Australia, New Zealand, South America and USA with key markets in China, Japan and India. His background spans the very local level of forest operations through to global trade and investment, providing a unique perspective that bridges the boardroom and the forest. Today, as Principal of Terrafoia Advisory, he partners with investors, processors and governments on plantation expansion, carbon markets and regional development. Steve holds an MBA, is a Graduate of the Australian Institute of Company Directors, and chairs the University of Sunshine Coast AFWI Hub Steering Committee.

Shona Heading brings over 20 years' experience in forestry operations and commercial planning, providing strategic advice to HQPlantations' leadership and industry decision makers. Additionally, as a director of a residential design and construction company, she understands timber's role in the built environment from both ends, growing sustainable plantations and using that timber to build homes. This unique perspective gives her insight into the barriers and opportunities for expanding timber use across the construction sector.

Shona led the development of *australian araucaria*™, demonstrating her ability to narrate timber's value and benefits clearly to end users. She advocates for timber to become a mainstream, climate-positive material of choice, not a niche or novel solution, but a key way we build, spanning residential builds and increasing uptake in commercial construction. She focuses on narrating the full range of benefits timber offers, from healthy plantations to low-carbon, renewable building solutions that help decarbonise the built environment.

Adrian Wapling has always been in technical support and grew up helping his father work on skidders back when native logging was an important industry. He has always had a passion for the native landscape and is very interested in the future support and management of the native forests.

With different job prospects, Adrian found a Field Service Technician's role supporting Timberjack Forestry machinery. A few years later, John Deere purchased Timberjack, so to follow the green product, Adrian accepted a job with the Dealer as the Technical Support Manager for forestry equipment throughout Australia.

In 2018 an opportunity arose to work for John Deere as a Product Specialist for Forestry Equipment covering Dealers in Oceania. This is an interesting role that keeps Adrian busy with traditional hydraulic, electrical and mechanical issues with new opportunities relating to John Deere's suite of Precision Forestry Technology along with computer support, connectivity requirements and the all-important Cloud.

Francis Richardson currently works as the Business Systems Manager for Orana Enterprises and has worked in the role for the last 7 years. Francis has been in the industry for just over 10 years focusing primarily on the implementation of business system for the harvest and haulage sector. These roles have allowed him to work in the Gippsland and Green Triangle regions with his current role being based in Tasmania.

His role with the company has developed over the years and has which has involved the implementation of systems such as MT Data tracking systems, Guardian fatigue management devices and a range of other supporting systems to improve their safety and efficiency which has been instrumental to the significant growth in the business.

Paul Salmon is a professor of Human Factors and creator of the Centre for Human Factors and Systems Science at the University of the Sunshine Coast. He has almost 25 years' experience of applied Human Factors and systems science research in a diverse set of domains. His current research interests are focused on the application of systems science in areas such as AI safety, harmful behaviours, and injury prevention. Paul has received several prestigious awards from the International, Australian, US, and UK Human Factors and Ergonomics societies, and for the past 5 years The Australian has identified him as Australia's field leader in the area of quality and reliability.

Mark Brown has over 25 years' experience in forestry and biomass supply applied research and innovation. His work focusses on research implementation across forest product, bioproduct and bioenergy supply chains, integrating and adapting traditional product supply with emerging bioenergy, bioproducts and circular economy opportunities.

Mark is an internationally recognised RD&I leader in partnership establishment and development with diverse industry, government, and academic partners and has leadership roles in IEA Bioenergy in the Executive Core Group, and is currently the Chair and Biomass Supply Task Leader. Mark also provides leadership, governance, and management as an independent non-executive director with the Australian Forest Contractors Association, Social Chamber representative on the Standards Development Group for the Australian Forest Stewardship Council Standard, and as board member with the Australian Journal of Forestry.

CLOSING PLENARY SESSION

Path to 2035: How might we enable transformation in the Australian forest sector?

Professor John Warner, *Warner-Babcock Institute, USA*

Andrew Morgan, *SFM*

Nicola Pero, *Iberdrola Australia*

Tim Woods, *IndustryEdge*

Moderated by Dr Joseph Lawrence, *AFWI*

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Abstract: The forestry and forest products sector is at a pivotal juncture, with ever-accelerating advances in technologies, sustainability challenges and market pressures reshaping its future. To navigate this complex landscape, collaboration and innovation will be essential.

Established in 2024, Australian Forest and Wood Innovations (AFWI) is a national research institute representing a once-in-a-generation investment to diversify and grow our industry. AFWI has a bold agenda to catalyse transformation across the sector by addressing critical challenges and opportunities, including advancing the circular bioeconomy and onshore manufacturing, delivering sustainable forest management for multiple outcomes, including, economic, environmental, social and cultural values and supporting Australia's transition to net zero.

AFWI recognises that transformation will be disruptive, demanding bold decisions, significant investment, and a willingness to challenge established assumptions.

Forestry is unique among primary industries in that today's decisions about what and where we plant a tree affect the value realised from our forest estate and downstream market opportunities. While the future operating environment is full of uncertainties, key enablers of transformation will include increases in digital adoption, greater product diversification and efficiencies, and a strong sovereign capability within our regional communities.

With this broader perspective in mind, we ask: what will our industry and its broader impacts look like in 2035? This plenary session brings together a distinguished panel of experts who will explore the technological, ecological and socioeconomic dimensions of what a bold vision for 2035 could look like—including innovation in forest management for all forest values—and the various enablers required for this to be realised in the Australian forest and forest products industry through collaborative innovation.

Professor John Warner (Warner-Babcock Institute, USA) will discuss how principles of green chemistry can be applied to transform forest fibre derived bio products innovation. Andrew Morgan (Managing Director, SFM) will explore the role of forest management in enabling long-term transformation across the sector. He brings over 20 years' experience in plantation estate management, sustainable investment, and nature-based climate solutions.

Nicola Pero (Executive Director Iberdrola Australia and former CEO of Food & Fibre Gippsland) will explore the role of strategic investment and community engagement in driving social licence for driving industry development, drawing on learnings from energy and food & fibre industries.

Tim Woods (Managing Director, IndustryEdge) will provide a data-driven outlook on global market trends, resource availability, and future industry demands.

Moderated by **Dr Joseph Lawrence** (Executive Director, AFWI), this discussion will highlight the transformative potential of R&D, innovation, and Australian-made solutions in ensuring the long-term profitability, sustainability, and resilience of the sector.



Panellists: Dr John Warner is a co-founder of the field of green chemistry and co-author of its foundational text. With over 360 patents and 120 publications, his work spans industrial innovation and academic leadership. He founded the first Ph.D. program in green

chemistry and co-founded Beyond Benign to advance sustainability education. Warner's inventions have led to 10 companies, earning him the Perkin Medal, a U.S. Presidential Award, and global recognition. Named one of *Utne Reader's* "25 Visionaries Changing the World," he continues to champion environmentally responsible science and technology worldwide.



Andrew Morgan is a recognised leader in Australia's forestry and natural resource sectors, with over 20 years of executive experience in sustainable development and nature-based solutions. As Co-Founder and Managing Director of SFM, he has overseen large-scale plantation management and driven innovative carbon and

environmental market projects. Andrew also co-founded Hydrowood, a globally acclaimed venture reclaiming rare timbers from Tasmania's hydro lakes. Renowned for his strategic vision and commitment to circular economy principles, he champions scalable solutions that balance environmental responsibility with economic opportunity—positioning natural capital at the heart of regional growth and climate resilience.

SPEAKERS AND ABSTRACTS



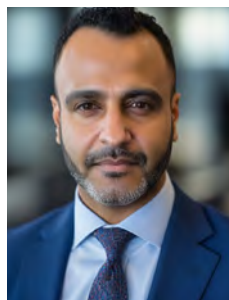
Nicola Pero has worked across sectors including food and fibre, visitor economy, skills and training, and now leads social license and engagement nationally for renewable energy developer and operator Iberdrola Australia. Nicola's global career spans private, public, and not for profit environments. Economic

development, diversification and disruption, and innovation have been core themes, as has building co-operative ecosystems with cross-sector collaboration opportunities. Her work has included deep dives into implementing methodologies such as cluster networks and the successful European model of Smart Specialisation which brings together government, academia, industry, and community.



Tim Woods has deep experience in the fibre, forestry and wood products supply chain in Australia and southeast Asia, with a focus on end-to-end industry analysis to drive value through business partnerships. As head of IndustryEdge, Tim drives a data-centric approach to solving complex problems and explaining markets, trade

and industry opportunities. He is a leading industry consultant and sought after speaker and presenter, seeking to deliver insights that support and assist decisions that make a difference.



Dr Joseph Lawrence leads AFWI's strategic direction, working with industry, government, and research partners to transform Australia's forest and wood products sector through innovation, investment, and collaboration. With nearly 25 years of experience across industry, government, and academia, he

is a globally recognised leader in innovation strategy, skills development, and industry transformation. Joseph has worked across advanced manufacturing, energy, ICT, construction, and agriculture, with a focus on regional development and sustainability. He has held senior roles in universities and government, holds a PhD and Master of Engineering in Management, and is a Graduate of the Australian Institute of Company Directors.

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Driving innovation in forest management across Australia's forest and wood products sector



Learn more about our
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Midway

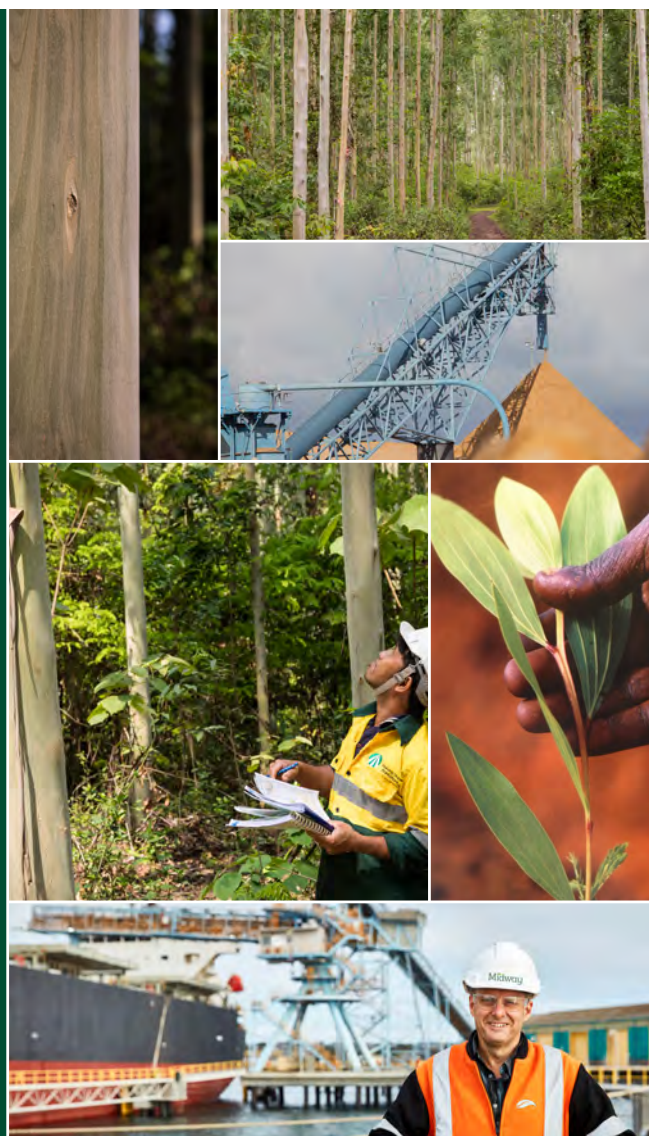
Founded in 1980, Midway is one of Australia's largest high quality woodfibre processors and exporters with operations in Victoria, Queensland, Tasmania and the Northern Territory.

Midway also manages almost 50,000 ha of plantations in Victoria, Northern Territory and Tasmania for large investors and small landholders.

The Midway Group's values drive our culture to be a trusted corporate citizen that is respected and valued in the communities in which we operate.

- *Safety and the Environment*
- *Honesty, Integrity and Respect*
- *Performance*
- *Sustainability and Community*

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Honesty and integrity – The cornerstones of our business philosophy. We believe in open and transparent communication with our clients, fostering trust through every interaction. Our commitment to honesty extends to our pricing, project timelines, and deliverables, ensuring a relationship built on trust.

Dedicated to exceeding client expectations, we take pride in delivering high-quality, cost-effective solutions that align with sustainable practices. Our unwavering commitment to client satisfaction has forged enduring partnerships with a wide array of clients, including commercial forestry enterprises, private landowners, and government agencies. We acknowledge the vital role forests play in mitigating climate change and preserving biodiversity. We are deeply committed to sustainable practices that balance economic growth with ecological conservation. When you choose Technical Forest Services, you choose excellence in forestry solutions, innovative technology, and a partner dedicated to sustainable practices.

Grow the future with us.



Forestry Corporation grows trees as a renewable timber resource used in houses, furniture and infrastructure like power poles and railways. We manage our forests sustainably to ensure the trees regrow and these healthy forests provide habitat for wildlife and exciting outdoor destinations for local communities and tourists.

With over 500 forests throughout NSW we are the largest commercial manager of forests in Australia and we have been growing and regrowing trees for timber for over 100 years.

Our forest management is certified sustainable to the Australian Standard for Sustainable Forest Management.

Our team of foresters, ecologists, logistics experts, natural resource and land managers and field staff working across areas like roading, firefighting and timber harvest operations are supported by experts in business management, IT and finance.

> Opportunities to join our team and grow your career at www.forestrycorporation.com.au



