January 2025

Priority Topics – this summary must be read in conjunction with FWPA's RD&E Investment Plans.

Note that *Soil Microbiome* and *Resource Modelling and Remote Sensing* investment plan subtopics are excluded from consideration in this January 2025 *Call for Proposals* due to significant current investment.

Investment Plan	Priority Topic Code	Research theme	Research topic	Research sub-topic	Rating
Damage Agents (2022)	FDA 1.1.1	Long-established damage agents	Drought induced damage	Drought-risk - retrospective analysis	Medium
Damage Agents (2022)	FDA 1.1.2	Long-established damage agents	Drought induced damage	Delivering surveillance products (not limited to drought risk)	High
Damage Agents (2022)	FDA 1.2.1	Long-established damage agents	Climate change -adapting to heatwaves	Understanding and managing the threat from heatwaves	Medium
Damage Agents (2022)	FDA 1.3.1	Long-established damage agents	Maintaining effective management procedures	Sirex biocontrol - nematode inoculation / tropical pines	Medium
Damage Agents (2022)	FDA 1.3.2	Long-established damage agents	Maintaining effective management procedures	AgDisp parameterisation for drift / canopy permeability – focus on canopy permeability of eucalypts; and drone application.	Medium
Damage Agents (2022)	FDA 1.3.3	Long-established damage agents	Maintaining effective management procedures	Gonipterus biocontrol	High
Damage Agents (2022)	FDA 1.3.4	Long-established damage agents	Maintaining effective management procedures	Risk-based management of mammal browsing	Medium
Damage Agents (2022)	FDA 1.3.5	Long-established damage agents	Maintaining effective management procedures	Review Teratosphaeria research	Medium
Damage Agents (2022) new project	FDA 1.3.6	Long-established damage agents	Maintaining effective management procedures	Forest health information system	Medium
Damage Agents (2022) new project	FDA 1.3.7	Long-established damage agents	Maintaining effective management procedures	Remote sensing options using free satellite data for digital surveillance, Review of satellite high-res options, Species specific test cases	High
Damage Agents (2022) new project	FDA 1.3.8	Long-established damage agents	Maintaining effective management procedures	Tree metrics from drone observations including TLD	Medium
Damage Agents (2022) new project	FDA 1.3.9	Long-established damage agents	Maintaining effective management procedures	IPM in globulus (Green Triangle and WA) - Gonipterus, Autumn Gum Moth, leaf beetles	Medium
Damage Agents (2022)	FDA 2.1.1	Newly established exotic damage agents	Myrtle rust diagnostics and pathways	Myrtle rust diagnostics and pathways	Medium
Damage Agents (2022)	FDA 2.1.2	Newly established exotic damage agents	Giant pine scale biocontrol	Giant pine scale biocontrol	Medium
Damage Agents (2022)	FDA 3.1.1	Not established	Reducing the risk of exotic threats through improved surveillance	Collate historical forest pest data	Medium

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Damage Agents (2022)	FDA 3.1.2	Not established	Reducing the risk of exotic threats through improved surveillance	Guidelines to determine pest status (native or exotic)	Medium
Damage Agents (2022)	FDA 3.1.3	Not established	Reducing the risk of exotic threats through improved surveillance	Conduct forest specific national blitz surveys	High
Damage Agents (2022) new project	FDA 3.1.4	Not established	Reducing the risk of exotic threats through improved surveillance	Develop a web portal to provide a central, easily accessible point for information to support forest biosecurity surveillance and biosecurity awareness	Medium
Damage Agents (2022) new project	FDA 3.1.5	Not established	Reducing the risk of exotic threats through improved surveillance	Conduct pest and pathway risk analyses for forest HPPs and identify surveillance gaps based on existing surveillance activities across the biosecurity continuum	Medium
Damage Agents (2022) new project	FDA 3.1.6	Not established	Reducing the risk of exotic threats through improved surveillance	Develop Incursion Preparedness Plans for HPPs	High
Damage Agents (2022) new	FDA 3.1.7	Not established	Reducing the risk of exotic threats through improved surveillance	Determining the distribution of *Pseudocercospera* needle blight in Australia and the threat to pine plantation and developing diagnostics to rapidly identify this needle blight pathogen	High
Damage Agents (2022) new project	FDA 3.1.8	Not established	Reducing the risk of exotic threats through improved surveillance	Optimisation and implementation of environmental DNA metabarcoding (HTS) to support forest biosecurity surveillance	High
Damage Agents (2022) new project	FDA 3.1.9	Not established	Reducing the risk of exotic threats through improved surveillance	Develop and validate rapid diagnostic tools for endemic forestry pathogens	High
Damage Agents (2022) new project	FDA 3.1.10	Not established	Reducing the risk of exotic threats through improved surveillance	Optimising pest and pathogen trapping grids to support forest biosecurity surveillance	High
Damage Agents (2022) new project	FDA 3.1.11	Not established	Reducing the risk of exotic threats through improved surveillance	Implementing remote sensing and artificial intelligence to support forest biosecurity surveillance	High
Damage Agents (2022) new project	FDA 3.1.12	Not established	Reducing the risk of exotic threats through improved surveillance	Implementing pest spread modelling to support forest biosecurity surveillance	Medium
Damage Agents (2022)	FDA 3.2.1	Not established	Reducing the risk of exotic threats through improved surveillance	Review diagnostic capability	Medium
Damage Agents (2022)	FDA 3.2.2	Not established	Reducing the risk of exotic threats through improved surveillance	Develop National Diagnostic Protocols for forest HPPs	Lower
Damage Agents (2022)	FDA 3.2.3	Not established	Reducing the risk of exotic threats through improved surveillance	Develop diagnostic methods and tools	High

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Damage Agents (2022)	FDA 3.3.1	Not established	Reducing the risk of exotic threats through improved surveillance	Review forest surveillance capability/capacity	Medium
Damage Agents (2022)	FDA 3.3.3	Not established	Reducing the risk of exotic threats through improved surveillance	Support general surveillance for HPPs	Medium
Damage Agents (2022)	FDA 3. 4	Not established	Reducing the risk of exotic threats through improved surveillance	Data integration	Medium
Damage Agents (2022)	FDA 4.2.4	Not established	Reducing the risk of exotic threats through improved surveillance	Design an optimised National Forest Pest HRSS program/Consultation workshops	Medium
Damage Agents (2022)	FDA 3.5.1	Not established	Reducing the risk of exotic damage agents not amenable to surveillance	Review threats not amenable to surveillance	Medium
Damage Agents (2022)	FDA 3.5.2	Not established	Reducing the risk of exotic damage agents not amenable to surveillance	Develop and implement import or border control activities	Medium
Damage Agents (2022) new project	FDA 3.6.1	Not established	Reducing the risk of exotic threats through improved biosecurity responses	Social Science surveys of acceptance of biosecurity control measures in urban environments, including tree destruction	High
Fire (2023)	FIR 1.1.2	Improving resilience & response	Understanding fire behaviour & impacts	Plantation fire behaviour	Very High
Fire (2023)	FIR 1.2.1	Improving resilience & response	Forest fire response	Effectiveness of suppression strategies	Very High
Fire (2023)	FIR 1.2.2	Improving resilience & response	Forest fire response	Effective use of heavy machinery / plant in forest fire suppression	Very High
Fire (2023)	FIR 2.1.3	Understanding risk	AFDRS & fire modelling	AFDRS - Plantation fuels	Very High
Fire (2023)	FIR 2.1.4	Understanding risk	AFDRS & fire modelling	Access to fire modelling tools	Very High
Fire (2023)	FIR 3.2.1	Effective community engagement	Understanding fire socio-economic impacts	Socio-economic impacts to industry, regional economies and timber supply	Very High
Fire (2023)	FIR 1.1.1	Improving resilience & response	Understanding fire behaviour & impacts	Where are the risks coming from?	High
Fire (2023)	FIR 1.2.3	Improving resilience & response	Forest fire response	Future Workforce	High
Fire (2023)	FIR 2.1.1	Understanding risk	AFDRS & fire modelling	AFDRS - Fire Danger data for forestry locations	High
Fire (2023)	FIR 2.1.2	Understanding risk	AFDRS & fire modelling	AFDRS - Forest and Pine FBI models	High
Fire (2023)	FIR 2.3.1	Understanding risk	Commercial risk	Insurance	High
Fire (2023)	FIR 1.3.1	Improving resilience & response	Recovery	Salvage operations	Medium
Fire (2023)	FIR 2.2.1	Understanding risk	Deliberate fires	Arson and burning of stolen vehicles	Medium
Fire (2023)	FIR 3.2.1	Effective community engagement	Landscape management	Effective fuel management tenure blind	Medium

Investment Plan	Priority Topic Code	Research theme	Research topic	Research sub-topic	Rating
Fire (2023)	FIR 3.2.2	Effective community engagement	Landscape management	Effective fuel management - maximising opportunities	Medium
Fire (2023)	FIR 1.2.4	Improving resilience & response	Forest fire response	Remote sensing	Low
Fire (2023)	FIR 1.3.2	Improving resilience & response	Recovery	Environmental effects	Low
Fire (2023)	FIR 4.1.1	Long term adaption	Resilient trees	Fire tolerant plantation tree species	Low
Fire (2023)	FIR 4.1.2	Long term adaption	Resilient trees	Fire resistance of existing commercial species	Low
Genetics (2020)	GEN 1.1.1	Development and Application of Genomic Tools	Local tool for local applications and benefit	Build complete and annotated reference genomes for Pinus radiata, Slash x Caribbean pine hybrid, Eucalyptus globulus and Eucalyptus nitens.	
Genetics (2020)	GEN 1.1.2			Development and deployment of a radiata pine SNP V2.0 Chip for genotyping	
Genetics (2020)	GEN 1.1.3			Convert genomic tools for pedigree reconstruction	
Genetics (2020)	GEN 2.1.1	Enhance public and private sector investment in the capability and capacity	Leadership	FWPA act as lead agency for coordinating Federal, State and Territory government investment into capacity and capability	
	GEN 2.1.2		Industry investment in tree breeding and genetic improvement research	Develop a communication strategy aimed at promoting to value chain participants (e.g. Seed nursery and Estate Managers, Commercial Growers, Millers etc.)	
Genetics (2020)	GEN 2.1.3		Communication	Support the engagement of a suitably qualified and experienced person to assist industry participants in their adoption and deployment of modern breeding opportunities	
Genetics (2020)	GEN 2.1.4		Capacity	Establish fully funded postgraduate (2) and post - doc (2) positions within Australian public sector research institutions	
Genetics (2020)	GEN 2.1.5		Capability	FWPA co-contribute with TBA, local, state and Federal government agencies to the replacement of the current field-based infrastructure (e.g. buildings, laboratories, staff facilities) at Mt. Gambier.	

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	GEN 2.1.6		Collaboration	Collaborate in the field of tree breeding and genetic improvement with an initial opportunity being co-investment to the generation of SNP assay V2 for Radiata Pine.	
	GEN 2.1.7			FWPA contribute funding to support the activities of Tree Breeding Australia's Technical Advisory Committee.	
Genetics (2020)	GEN 3.1.1	Breeding Plantation Pinus sp. and Eucalypt sp. for Climate Change	Development of Plantation Eucalyptus sp. and Pinus sp. genotypes for climate change	Characterising diversity within ecologically and economically important softwoods and hardwoods: national breeding program and natural provenance genetic resources	
Genetics (2020)	GEN 3.1.2			The genotyping of existing populations that have extensive phenotypic data (including site and environmental characterisation)	
Genetics (2020)	GEN 3.1.3			Focused on identifying and characterising non-key traits such as internal checking (INC), external resin bleeding (ERB) and number of heartwood rings (NHR).	
Genetics (2020)	GEN 4.1.1	Maintaining Genetic Diversity within Australia's Pinus sp. plantations	Future proofing genetic diversity within Australia's Pinus sp. industry	Establishment of an 'offshore' research program for the purpose of evaluating the current level of susceptibility / tolerance / resistance of Australian Pinus sp.	
Genetics (2020)	GEN 4.1.2			Undertake a review of current quarantine restrictions	
Genetics (2020)	GEN 4.1.3			Identifying and evaluating methods and processes for germplasm exchange/transfer	
Genetics (2020)	GEN 4.1.4			Engage with international tree breeders and organisations	
Genetics (2020)	GEN 5.1.1	Building an Australian plantation industry platform for the future bio-economy	Breeding for future forest products	Identifies the bioeconomy generated products that will be generated from a plantation forestry-based bio-economy	
Genetics (2020)	GEN 5.1.2	Plantation Tree Breeding and Genetic Improvement	Big data management and wood properties	Identifies the current status of Australian and international research and investment in forestry	

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		for Enhanced Value Capture		related tree breeding for the bioeconomy;	
	GEN 5.1.3			Quantifies the economic opportunity (e.g. ROI) and investment required for the Australian plantation forestry industry to commit tree breeding and genetic resources to building a germplasm platform with traits that will be required to deliver products into the bioeconomy.	
	GEN 5.1.4			Initiate discussions with Tree Breeding Australia, RPBC and SCION for the purpose of establishing a collaboration that would create and support a national Pinus sp. tree breeding program in Australia for the bioeconomy.	
Genetics (2020)	GEN 6.1.1	Plantation Tree Breeding and Genetic Improvement for Enhanced Value Capture	Breeding for future forest products	FWPA facilitate access on behalf of the industry and that the data be available confidentially to researchers engaged in tree breeding and genetic improvement activities and research.	
	GEN 6.1.2			Research to identify and characterise 'new product' traits including improved stability, durability, appearance and wood fibre traits.	
Native forest silviculture	NFS 1.1.1	Productivity	Productivity	Commercial thinning guided by remote sensing	Medium
Native forest silviculture	NFS 1.1.2	Productivity	Productivity	Remote sensing regeneration success	High
Native forest silviculture	NFS 1.1.3	Productivity	Productivity	Restoration of degraded production forests	Medium
Native forest silviculture	NFS 1.1.6	Productivity	Productivity	Understanding private native forest productivity and the needs of growers	Medium
Native forest silviculture	NFS 1.1.7	Productivity	Productivity	Climate-adapted protocols for provenances and species	High
Native forest silviculture	NFS 2.1.1	Sustainability	Sustainability	Guidelines for responsible recovery of timber from burnt forests	High
Native forest silviculture	NFS 2.1.2	Sustainability	Sustainability	Coarse Woody Debris prescriptions for high residue removals	High
Native forest silviculture	NFS 2.1.3	Sustainability	Sustainability	Long-term forest monitoring	Medium
Native forest silviculture	NFS 3.1.1	Social impact	Social impact	Reduced reliance on clear-felling and burning	High
Native forest silviculture	NFS 4.1.3	Capacity	Capacity	Training materials (procedural	Medium

Investment Plan	Priority Topic Code	Research theme	Research topic	Research sub-topic	Rating
				manuals/videos/apps) for native forest growers, employees and contractors)	
Native forest silviculture	NFS 1.1.9	Productivity/forest health	Productivity/forest health	Ecological thinning of native forests with commercial outcomes through timber utilisation	High
Native forest silviculture	NFS 1.1.10	Productivity	Productivity	LiDAR project to build on recent pilot undertaken by DPI NSW – Characterisation of native forest structural elements.	High
Native forest silviculture	NFS 1.1.11	Productivity	Productivity	Understanding and minimising ecological impacts of commercial forestry on threatened species	High
Native forest silviculture	NFS 1.1.12	Productivity	Productivity	Better understanding of industry supply chains by private native forest owners.	Medium
Native forest silviculture	NFS 3.1.3	Social impact	Social impact	Broad communication of forest practices and ecological conservation measures used in native forest management.	High
Nutrition	NUT 1.1.1	All forest types	Site and productivity mapping	Fine-scale data (region-to-stand levels) on stand condition and history, soil properties, and climate, with links to yield predictions systems that indicate potential yield, likely attainable rain-fed yield, and the role of different factors including nutrition in closing the yield gap across multiple rotations	High
Nutrition	NUT 1.1.2	All forest types	Knowledge systems	Knowledge capture and training systems (Delivery of R&D)	Medium
Nutrition	NUT 1.1.4	All forest types	Maintaining site productivity	Nutrient value of slash in relation to fertilisation	High
Nutrition	NUT 2.1.1	Hardwood plantations	Nutrient deficiencies	Methods for diagnosing nutrient deficiencies	Medium
Nutrition	NUT 2.1.2	Hardwood plantations	Fertilizer responses	Quantification of responses to fertilizer and the development of prediction systems and fertilizer recommendations	High

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Nutrition	NUT 2.1.3	Hardwood plantations	Maintaining site productivity	Operational management systems for conserving and managing slash	Medium
Nutrition	NUT 3.1.1	Softwood plantations	Knowledge systems	Capture and adopt widely the considerable existing knowledge base on nutrient responses from establishment through to canopy closure and following thinning.	High
Nutrition	NUT 3.1.2	Softwood plantations	Nutrient management	Nutrient requirements across multiple rotations, particularly for rarely studied for nutrients such as Ca, K and trace elements	Medium
Plantation silviculture	PSI 1.1.1	Market and product specifications	Silviculture and wood products	Research into fit for purpose of wood type to products	High
Plantation silviculture	PSI 2.1.1	Social license to operate	A focus on social license	Enabling of forest operations	High
Plantation silviculture	PSI 2.2.1	Social license to operate	Current chemical approaches	Enabling of forest operations	Medium
Plantation silviculture	PSI 2.3.1	Social license to operate	A holistic approach	Enabling of forest operations	Medium
Plantation silviculture	PSI 2.4.1	Social license to operate	Alternative weed control method	Working towards continued use of a range of herbicides and methods	High
Plantation silviculture	PSI 3.1.1	Sustainability and productivity	Site selection and management	Improving productivity and plantation resilience	Medium
Plantation silviculture	PSI 3.2.1	Sustainability and productivity	Maintenance of site productivity	Improving productivity and plantation resilience	Medium
Plantation silviculture	PSI 3.3.1	Sustainability and productivity	Operational capturing of potential yields	Improving productivity and plantation resilience	Medium
Plantation silviculture	PSI 3.4.1	Sustainability and productivity	Impact of productivity on wood properties	Development of improved log attributes for specific products	High
Plantation silviculture	PSI 4.1.1	Biotic agents, pests and disease	Document the drivers of poor survival	Improving productivity and plantation resilience	High
Plantation silviculture	PSI 4.2.1	Biotic agents, pests and disease	Silviculture and risk issues	Improving productivity and plantation resilience	Medium
Plantation silviculture	PSI 4.3.1	Biotic agents, pests and disease	Management of the risks	Improving productivity and plantation resilience	Medium
Plantation silviculture	PSI 5.1.1	Stand management – stocking	Stand management – stocking	Improving productivity and plantation resilience	Medium
Plantation silviculture	PSI 5.2.1	Stand management – stocking	Knowledge management	Improving productivity and plantation resilience	High
Operations and supply chain (2023)	SCO 1.1.1	Harvesting	Harvesting productivity	Technology to improve productivity of harvesting through automation	Medium

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Operations and supply chain (2023)	SCO 1.1.2	Harvesting	Harvesting productivity	Technology to improve productivity of harvesting using operator aids (Human-Machine Interaction), enhanced training systems and reviewing best practice methods	Medium
Operations and supply chain (2023)	SCO 1.1.3	Harvesting	Harvesting productivity	Improved silvicultural outcomes through application of technologies to assist harvest machine operator tree selection, and track location.	High
Operations and supply chain (2023)	SCO 1.2.1	Harvesting	Industry skills	Benchmarking operator performance and identifying state-of the-art training systems to improve productivity for new and existing operators	Medium
Operations and supply chain (2023)	SCO 1.3.1	Harvesting	Machinery fuels	Current innovations regarding alternative fuels, applicability in Australian settings and potential constraints	Medium
Operations and supply chain (2023)	SCO 1.4.1	Harvesting	Log stock management	Log stock management systems, status of technological solutions and impediments to implementation	High
Operations and supply chain (2023)	SCO 1.5.1	Harvesting	Forest infrastructure	Options for extending wet weather harvesting via road engineering or mechanical solutions. Technologies for assessing road surface depth, strength and durability.	High
Operations and supply chain (2023)	SCO 1.5.2	Harvesting	Forest infrastructure	Resilience of current infrastructure and regulatory prescriptions to future extreme weather events.	Low
Operations and supply chain (2023)	SCO 2.1.1	Residues	Residue economics	Current status and developing technologies in relation to end uses, extraction and processing options, value and costs	Medium
Operations and supply chain (2023)	SCO 3.1.1	Transport	Transport productivity	Potential for semi-autonomous trucks in an off-road setting	Low
Operations and supply chain (2023)	SCO 3.1.2	Transport	Transport productivity	Higher payloads and pathway for regulatory approval in Aus settings	Medium
Operations and supply chain (2023)	SCO 3.2.1	Transport	Transport fuels	Technologies with the potential to reduce emissions in transport	Medium

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Operations and supply chain (2023)	SCO 4.1.1	Plantation operations	Productivity – automation and robotics	Application of mechanical planting technology across Aus operating environments.	High
Operations and supply chain (2023)	SCO 5.1.1	General	Knowledge management	Improved access to previous research	High
Operations and supply chain (2023)	SCO 5.1.2	General	Knowledge management	Better transfer of knowledge and adoption	High
Operations and supply chain (2023)	SCO 5.2.1	General	Reporting	Emissions reporting requirements and opportunities for better reporting to incentivise innovative solutions	Low
Climate Change (2024) Damage agents (2022)	1.1 [DAIP-1.2.1 Medium]	Adapting to heatwaves (Long established)	Native forests: Understanding and managing the threat from heatwaves and drought to productivity decline or mortality.		High
Climate Change (2024) Damage agents (2022)	1.2 [DAIP-3.1.1 Medium]	Endemic forest pests	a. Collate long-term forest health monitoring data to baseline historic/current distributions and damage levels of major pests affecting forests.		High
Climate Change (2024) Damage agents (2022)	1.3 [New]		b. Use the baseline data to model relationships between pest distribution/activity and past climate. Model predicted pest distribution and damage levels under different climate scenarios.		High
Climate Change (2024) Damage agents (2022)	1.4 [New]		c. Analyse known tree species trait data against predicted pest data to suggest (i) changes in tree species in different areas or (ii) work with tree breeders (TBA/RPBC etc) to re-focus long term breeding aims to balance growth x drought resistance x pest resistance.		High
Climate Change (2024) Damage agents (2022)	1.5 [New]	Exotic forest pests	a. Desktop analysis of current or emerging invasive species overseas, including what biological traits are most indicative of increased invasiveness due to climate change – use this to shortlist pests to focus on. Opportunity to align with and leveraging NZ programs (Scion and Forest Growers Research).. Include pathway analysis to Australia.,		High
Climate Change (2024) Damage agents (2022)	1.6 [New]	b. Develop models or analytic workflows in Biosecurity Commons or similar, to predict pest distribution and damage	b. Develop models or analytic workflows in Biosecurity Commons or similar, to predict pest distribution and damage levels under different climate scenarios.		High

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		levels under different climate scenarios			
Climate Change (2024) Damage agents (2022)	1.7 [New]		c. Analyse known tree species trait data against predicted invasive pest data to suggest (i) tree species to include or ii) focus on as part of future tree breeding.		high
Climate Change (2024) Damage agents (2024)	1.8 [New]	Drought, disease and fire risk and species matching	a. Work with CSIRO, TERN, ABARES, BOM, EcoCommons or others to create long-term modelling of drought, disease and fire impacts on commercial plantation and native forests.		Medium
Climate Change (2024) Damage agents (2024)	1.9 [New]		b. Results of (a) used to suggest new tree species to consider or introduce to tree breeding programs or seeding in the case of native forest.		Medium
Climate Change (2024) Fire (2023)	2.1 [FIP-3.2.2 Moderate]	Effective fuel management-maximising opportunities.	A predictive model that uses current data to show future windows of opportunity for prescribed burning and forecast potential periods of increasing fire suppression difficulty.		Medium
Climate Change (2024) Fire (2023)	2.2 [FIP-4.1.1 Low]	Fire-tolerant plantation tree species	List of potential species and potential for hybrids that can fit into current/future timber resources.		Medium
Climate Change (2024) Fire (2023)	2.3 [FIP-4.1.2 Low]	Understanding tree fire resilience/species adaptation	Answer the following questions: > Can current commercial species become more fire-resilient? > What is the driver behind post-fire tree death? > How do the following factors influence tree survival: bark thickness, depth of feeder roots, pre-fire litter/duff dryness and surface fuel burning depth, post-fire rainfall and weather - rain quantity/timing and temperature/humidity?, > Would increased bark thickness result in less timber damage and lower mortality? > Can we influence ladder fuel traits?		Medium
Climate Change (2024) Tree Breeding &Genetic Improvement (2020)	3.1 [TB&GIIP-[Priority 3, recommendation 3.3.5]	Understanding species adaptation under climate change scenarios	Characterising diversity within ecologically and economically important softwoods and hardwoods – having a lens on the national breeding program and natural provenance genetic resources. Identify important germplasm that would assist in the breeding of elite material suited to climate variability including new and untested plantation sites.		Medium
Climate Change (2024) Tree Breeding &Genetic Improvement (2020)	3.2 TB&GIIP-[Priority 4, recommendation 3.4.3]	Maintaining genetic diversity/pre-emptive screening	Tree Breeding Australia (TBA), Radiata Pine Breeding Company (RPBC) in collaboration with Plant Health Australia (PHA) establish an 'off-shore' research program in the US (i.e. Florida), New Zealand, Chile and South Africa to evaluate the current level of susceptibility/tolerance/resistance of Australian plantation Pinus and Eucalypt spp germplasm when exposed to major plantation diseases (e.g. Pitch Canker)		Medium

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			and pests that do not currently exist within Australia plantations.		
Climate Change (2024) Native forest silviculture (2020)	4.1 [NFSIP-Project 7]	Species adaptation	Development of climate-adapted protocols for provenances and species selection for native forests.		Medium
Climate Change (2024) Native forest silviculture (2020)			Establishing mixed tree species forests for climate resilience.		Medium
Climate Change (2024) Soil Microbiome (2021)	5.1 [New]	Soils microbiome activity in response to climate variability and extremes	Advance understanding of the mechanisms by which the tree microbiome supports stress tolerance and how this may be compromised by climate variability		Not ranked as revised topics after review
Climate Change (2024) Soil Microbiome (2021)	5.2 [New]		Understand how different climate conditions alter the function of soil microbiomes related to pathogen repression and nutrient cycling		Not ranked as revised topics after review
Climate Change (2024) Soil Microbiome (2021)	5.3 [New]		Identify what genetic loci in plant breeding programs associate to fostering beneficial microbiomes and profile how climate extremes may affect these		Not ranked as revised topics after review
Climate Change (2024) Soil Microbiome (2021)	5.4 [New]		Develop tools to manipulate tree microbiomes in situ at both planting and mid-rotation to boost climate resilience and pathogen repression		Not ranked as revised topics after review
Climate Change – new (2024)	6.1	Climate change adaptation-commercial native forest and plantations.	Update of the CSIRO report (Pinkard et al 2014) considering IPCC AR6 report climate projections. Consolidate outcomes of recent (post-2014) research into physical impacts and management framework and options for adaptation. Include nursery management, site preparation, early silviculture -fertilisation and weed control, thinning prescriptions and pest and disease impact from drought		Medium
Climate Change – new (2024)	6.2	Monitoring change-understand spatial and temporal climate-related impacts, establishing baselines, threshold levels and response triggers.	To be considered as part of the Forest Industry Sustainability framework: >Explore options to leverage and expand the TERN project to include national commercial plantation and native forest locations. >Further understanding of water use of commercial plantations species and native forests.		Medium

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Climate Change – new (2024)	6.3	Forecasting within-year climate variation to assess localised risks on commercial plantations and native forest	Prediction of likelihood and consequence of change in annual/monthly extreme weather events i.e. heat waves, drought, flooding, wind/cyclones for plantation and native forest regions.		Medium
Climate Change – new (2024)	6.4	Forecasting infrastructure damage	Using climate forecast models explore the potential to identify forested (native and plantation) areas that will be most impacted from extreme weather events driven by climate change that would impact on forest grower infrastructure (roads, bridges) and supply chains.		Medium
Climate Change – new (2024)	6.5	Stand management-thinning options to reduce stand mortality due to drought/limited water availability.	Investigate the effectiveness of i) managing initial stocking rates and thinning in commercial plantations in response to limited water availability, ii) thinning as a management tool in commercial native forests in response to limited water availability.		High
Climate Change – new(2024)	6.6	Transitional impacts- the implementation of climate-related financial disclosure standards by the Australian Accounting Standards Board (AASB).	A pilot study to develop an industry framework and guidelines to address reporting of climate-related financial disclosure.		High
Climate Change – new (2024)	6.7	Transitional impacts- Forest Valuation Standards-climate- related financial disclosure requirements.	Engage forest valuers and accountants to understand the impact of climate-related financial disclosure requirements and how they are to be implemented in forest valuation and standards. Includes information and data requirements and assumptions.		High
Climate Change – new (2024)	6.8	Modelling productivity impacts of climate change scenarios	Proposal #1 Integrating APSIM into resource management systems for estate wood flows and valuations that account for climate change.		High
Climate Change – new (2024)	6.9		Proposal #7 Transforming future softwood productivity through optimal site-specific silviculture.		High
National Forest Biosecurity Surveillance Strategy	BSS 2.1.3	Develop awareness materials			High
National Forest Biosecurity Surveillance Strategy	BSS 3.2.2	Forest node in the National Diagnostic Network			High

Investment Plan	Priority Topic Code	Research theme	Research topic	Research sub-topic	Rating
National Forest Biosecurity Surveillance Strategy	BSS 3.4.4	Forest biosecurity training framework & modules			High
Priority identified since publication of investment plans	PIP 1.1.1	Control of blackberry in forest settings			Unrated
Priority identified since publication of investment plans	PIP 1.2.1	Link between silviculture and wood properties through a breeding program e.g. physical dimensions of corewood vs. sapwood			Unrated
Priority identified since publication of investment plans	PIP 1.3.1	Carbon accounting for managed native forests and soil in forest settings			Unrated
Priority identified since publication of investment plans	PIP 1.4.1	Alternative species for future predicted climates			Unrated
Priority identified since publication of investment plans	PIP 1.5.1	Detailed, regional future climate modelling, building on work done by CSIRO to develop the 'proof of concept'			Unrated
Priority identified since publication of investment plans	PIP 1.6.1	Sustainable management for koalas		Biotic and abiotic factors affecting the population dynamics of koalas in forests – e.g. use of refuges, plantation landscape design	Unrated
Priority identified since publication of investment plans	PIP 1.6.2	Sustainable management for koalas		Safe detection of koalas in forests	Unrated