Tasmanian Special Species Timber Review

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Dr Martin Farley

Holly Farley

Dr Peter Volker

Executive Summary

The Tasmanian Fine Timbercraft Sector continues after 200 years to makes an important, and often underestimated, contribution to our economy and positioning as a vibrant, creative place built on our traditions of the design and crafting of useful and beautiful items ranging from architectural interiors, ships, through to musical instruments to art objects and utility items sold to global, national and local markets. This reputation, positioning and contribution is under threat, with it the highly dispersed income, meaningful work and joy people gain by crafting, local, unique timbers into beautiful objects.

The problem

The Tasmanian fine timbers and Timbercraft sector is experiencing systemic failure. Over the past decade, the Sustainable Timber Tasmania harvest of the nominated special species timbers from the forest, aside from Blackwood and despite proven resource capabilities, has declined to nearly zero volumes in 2023/24; jeopardising its significant future economic, social, and cultural contributions to Tasmania through the sustainable use of its iconic timbers. This failure is primarily due to:

- Sustainable Timbers Tasmania concentrating focus on legislated eucalypt harvest volumes to the detriment of non-blackwood special species harvest and salvage and because of practical elimination of high-quality special species timbers harvested as a by-product to eucalypt saw log harvesting caused by the shift to regrowth native forest and plantations as the source for eucalypt.
- Policy settings and administrative processes that have prevented the targeted, small scale selective harvest of special species timber in accordance with the Regional Forest Agreement and the Special Species Management Plan (2017) that were designed as the compensating initiative to the above eucalypt harvest transition.

Currently, the critical iconic special species timber component of the sector, is meeting demand sustained by depleting timber stockpiles, including those held in private hands (including those under houses, in sheds etc – often accessible as estate sales); this is not sustainable, and "workarounds" which see people spending large amounts of time sourcing material from ranges of sources. This unsustainable model is taking a toll, with several businesses contributing to this report having reduced employment, transitioned to part-time, and planning closures due to supply issues, not a lack of demand.

The quality of blackwood and eucalypt which is utilised in the fine timber sector is declining in parallel, compounding the fine timbercraft challenge.

The Impact

The effective cessation of the icon special species harvest creates a threat to the livelihoods of primary and secondary timber processors, designers, joiners, cabinet makers, artisans, and producers of kitchenware and utility items as well as the intrinsic cultural and social fabric created through timbercraft and

timbercraft dependent events like Salamanca Market, the Australian Wooden Boat Festival, and the Tasmanian Craft Fair. Once lost, the critical cultural dimension, social and physical infrastructure, knowledge, and skills are unlikely to be re-established, risking the disappearance of fine timbercraft as a unique vocation in Tasmania.

The lack of forest harvest has left the sector reliant on stockholdings, much of which was opportunistically recovered during the construction of the Gordon and West Coast hydro power schemes. For some, such as boatbuilders, and specialist millers, the lack of suitable materials has reached a critical state. These stockholdings are finite, making the commencement of programmed, demand-driven selective harvesting essential for the sustainability of this high-value component of the Tasmanian fine timbercraft sector. Without a coherent strategy to resume harvesting, the special species sector's trajectory is toward eventual closure.

Tasmania's fine timbercraft is an ambassador for the State. It creates a visual presence in major public architectural interiors and spaces, across bespoke and production furniture markets, as well as in musical instruments and art objects. Such visibility is central to Tasmania's state positioning and messaging.

Resolution – The priority, first phase re-establishment recommendations are highlighted

The implementation of the selective harvesting policy will positively impact the environment, resource recovery, productivity and the sector narrative.

Removal of policy and harvest blockers, it is recommended that the Forest Policy Unit:

Initiate urgent review and as necessary amendment to the policies, processes, strategies and charters and if necessary, forestry legislation to enable the implementation of the Special Species Management Plan (2017), the Regional Forest Agreement, and The Forest Practices Act 1985, to ensure the harvest of special species timbers across permissible public land tenures.

Utilising the "other species" categorisation of special species in the Act, nominate Eucalypt species with specific, high value and timbercraft based applications for inclusion with special species definitions and selective harvesting.

Develop a collaborative strategic positioning, governance & management framework to effectively enable policy and strategy to be implemented systemically and consistently across land tenures to provide the dynamic, demand driven linkage between harvest, the market and sustainability parameters.

Within this collaborative model, collect and analyse operational information relating to material use, employment, knowledge & skills development, and market conditions as the basis for metrics which enable active, dynamic management.

There is significant special species resources distributed and available across the permissible land tenures. The Permanent Timber Production Zones, Future Forest Production Zones, Crown Reserves and private land can **support light touch selective harvest and regeneration**. To enable this, while the policy and strategy settings are confirmed, it is recommended that:

A program of ground truthing and resource assessment of accessible SST rich forests & dead Huon Pine recovery, with a focus on short term supply resolution and the long-term sustainable supply from the mix of available land tenures, including trialling helicopter supported recovery.

Identify and define special species management zones and refine/utilise legislative & policy instruments to codify operations to enable dynamically managed, long term supply continuity.

Commence immediate introduction of selective harvesting for non -Blackwood special species to deliver nominal, viable log volumes to the market, and

The initial nominal volume phase be of 2 years, while ground truthing, sustainable yield volumes are re-examined in detail and SST partial/selective harvesting zones are established and consistently implemented across tenures.

Analysis of future demand indicates strong growth potential for Tasmanian timbers, special species timbers & Tasmanian Fine Timbercraft can mirror this trajectory. To enable this, it is recommended that the transition to active and dynamic management of the resource to ensure minimum supply while a sustainable selective harvest regime is designed, requires:

Commencement of a selective harvesting/regeneration program of a minimum of 200m^3 for each of the terrestrially harvested White & Blackheart Sassafras, Celery Top Pine, and Myrtle for 2 years in parallel with a policy and activation model to establish selective extraction on a long-term sustainable basis.

As a component of the immediate, selective harvest establishment phase, a commercially viable quantity of dead standing/on ground Huon Pine be recovered, this recovery to include trialling of both terrestrial and helicopter supported techniques to enable comprehensive evaluation to occur.

The profile of harvested logs should reflect the characteristics identified by contributors to this report and sector participation in initiation activities to support the initial harvest.

This direct harvest intervention can be complemented by initiatives to **make greater stocks of often long hoarded timber available** and to optimise the potential value of these resources until a certainty of sustainable supply can be achieved, this includes consideration of:

How special species can be drawn out of stockholdings not forming inventory with active contributors in the sector and introduced into the chain of custody certified supply chain.

How the sales revenue from the wooden boat bank might be used to create additional supply of material for both restoration and larger vessel construction promoting greater stock turnover and capacity to self-generate.

Implementation of a **selective harvest regime provides a flexible supply model** which reflects changes in overall and specific product demand requires much **closer liaison and cooperation/collaboration between the industry value chain, land managers and policy contributors** than has occurred within the current stance, including making logs available to smaller, specialist mills to meet specific market requirements. To enable this, it is recommended that special species timber interests:

Perform detailed analysis and consideration of options for a strategic special species management structure, governance, and operational models, and

For this model, identify the optimal management & operational structure, responsibilities and sector access protocols necessary to deliver a demand driven selective harvest & diverse supply model which can sustainably underpin the systemic purposeful development of the Tasmanian fine timbercraft sector and its businesses.

The focus and structure which supports this can also be applied to **active marketing and shaping demand.** It is recommended that a sector;

Develop an active marketing stance, strategic and tactical positioning and messaging/promotion which highlights the value of sustainable, creative, and high-quality timber and timbercraft and its product/market intersections jointly with the sector, industry organisations and government agencies.

Apply consistent sector messaging, with common material available for sector business use subject to defined protocols.

The potential growth in demand needs **increased capability along the value chain and in the support services**. There is significant evidence of a need to **adopt a different approach** - develop a post trade/degree focus on the development of timber knowledge, recovery practice and fine motor skills using a

range of options such as short courses, internships, mentoring which can also create value in, for example the tourism market. To enable this, it is recommended that:

Key entities, practitioners and development specialists jointly consider and design options to provide a contemporary, flexible model for the delivery of fine timber harvesting, processing and fine timbercraft knowledge, skills & practice development for heritage, creative and contemporary value chain application as a priority.

Image courtesy of Toby Muir Wilson, photo by David Murphy

Contents

Glossary of Terms & Abbreviations

ACCU	Since 2001 Australian Carbon Credit Units have provided a pricing mechanism for this specific carbon sequestration environmental service.
FPP	Forest Practices Plan – required as a statutory environmental pre-requisite to harvesting
ESG	Environmental, Social & Governance
FPPF	Future Potential Production Forest
ISSB	International Sustainability Standards Board
Special species timber harvesting	The harvesting of special species timber by partial harvesting practices
Partial/Selective Harvesting	The harvesting of single trees whilst retaining other trees including advanced growth trees, seed trees and shelterwood trees. This will reduce the environmental impact of harvesting and improve the recovery and quality of input timber and production productivity
PTPZ	Permanent Timber Production Zone
SST/Special Species Timbers	Special Species Timbers are timbers which are endemic to Tasmania and are prized for their properties and appearance, nominated in The Forestry (Rebuilding the Forest Industry) Act 2014
STT	Sustainable Timbers Tasmania
STMU	Special Timbers Management Unit, specific zones of special species rich timbers identified and initiated to enable sustainable, consistent supply to the sector. Highly contested as to "fit for purpose" and use.

Cover Images courtesy of (across from bottom left): Denman Marine, Axiom Lighting, Brad Moss, Bill Burford, Brad Moss, Craig Howard & Son, Kyries Timber, Kyries Timber, Axiom Lighting, Toby Muir Wilson, Callum Murphy, Toby Muir Wilson, Brad Moss, Craig Howard & Sons

Appreciation is expressed to the large number of industry participants who gave freely their information, experiences and insights, those who did this multiple times as we explored the issues arising and framed the conclusions and recommendations.

Brief & Methodology

1.1. Scope of brief

The Tasmanian special species timber and woodcraft sector will be reviewed to provide an estimate of the size and value of the industry and to clarify the current and projected availability of, and demand for, different grades of special species timber milled through channels such as sawmills, stockpiles, underwater extraction operations, and other suppliers, addressing the following points:

- Provide an assessment of demographics, skills, training and employment numbers across the Tasmanian special species timber industry value chain, identifying any gaps and barriers to entry, growth and scale;
- Estimate the economic value of the sector and evaluate its social/cultural, and environmental contribution to Tasmania;
- With reference to previous industry studies, identify recent trends and structural changes in the supply chain and relevant changes in forest management;
- Engage with industry to determine the volume, grade, and prices of stock currently publicly available;
- Identify any policy or structural market issues impacting supply;
- Develop a timber use profile that captures current usage, demand, value-add, and markets for species, grades and sources;
- Assess current and projected demand for different species and grades of timbers over the period to 2037, with consideration of optimum future use volume if supply was not constrained, social license and certification trends, and potential to exploit emerging markets; and
- Model current stock and supply against forecast demand with consideration given to the effect of prices on product substitution and the impact of this substitution.

1.2. Methodology & Approach

The above brief highlights the sectors many interdependent dimensions and components. The tasks proposed are similarly interdependent, demonstrating a complex and dynamic cause-effect and lead-lag flow-on impacts.

Within this report, the descriptive scope has been extended to develop a clear picture of causality, the implications and recommended responses as a sector strategic development framework based on how it works, what it delivers and how it might work better by framing the systemic connection between;

- the policy which governs supply of timber resource and how it is implemented and managed,
- how the sector operates on a day-to-day basis to deliver value within elements of, and along its value chain,
- how productively and profitably it utilises available resources to create both intermediate and final product and the market fit and
- its overall socio-economic contribution to Tasmania.

These relationships are underpinned by cultural values reflected in:

- how legislation and policy is framed,
- how people and businesses:
    - approach the sector and work within the forest from which the species are drawn,
    - operate in timbercraft
    - how they approach design and transformation of timber and
- why people buy both the intermediate and final products.

It is a sector and market which has operated for over 200 years and is now characterised by tangible and intangible reasons for participation and in intermediate and final product purchase criteria resulting in objective and emotional decisions and a mix of highly transactional and vocational occupations.

It is important to note that the sector operates as an "open system", subject to external political, regulatory, social and economic trends and shocks (such as COVID, loss of access to resource through fires, climate effects on growing conditions and changes in land tenure). Depending on their characteristics, these externalities will shock the system from differing starting points and propagate in different ways, enhancing or dampening performance. Examples include the shortage of skilled joiners, extension of the Tasmanian Wilderness World Heritage Area, cessation of native forest harvesting in Victoria or a range of factors as identified later in the analysis. An internal system shock includes patterns such as the reduction in harvest volume and quality. No matter the source, they each combine to deliver risk and/or opportunity.

The following "Jigsaw Logic" representation visually represents the Tasmanian fine timber and Timbercraft sector system as the basis for analysis, modelling, decision support, activation and management. It represents, the mix of activities which support influence and support operations, linking them with the critical inputs and highlighting the flow-on benefits/outcomes to the state. The systems approach supports description and analysis of the sectors core components and their short-, medium- and longer-term dimensions. This enables consideration of the key interdependencies and consequences of specific elements not working, in the context of the brief and identified from industry responses.

The framing considers the Tasmanian Fine Timbercraft Sector as a complex, dynamic system which connects the overarching strategic intent with the value chain which supports supply, harvesting and value add with the policy framing, processes, resources/capabilities which enables its generation and further creation of value. This interconnection is impacted, moderated and enhanced by the values which underpin the purpose of the strategy and how the operations are designed and delivered within specific sectoral contexts.

The approach includes:

- Visually framing the system to support understanding and explanation of the interdependencies and operability – akin to a jigsaw – if some tiles are missing or misshapen the whole picture is impacted
- Considering the implications of the performance of specific elements across the system and the development pathways which activate the system.

The framing is designed to support sector development and sustainability. This synthesises sectors "why, what and how" from government, sectoral and societal perspective. Based on their interests and responsibilities,

different groups will apply different weighting to the outcomes, influencing how they consider the value chain should be implemented, if at all.

This supports the principles of "active", rather than "passive" management of forests in conjunction with the management and shaping of dynamic systems provide foundations for this analysis, conclusions and recommendations. Systems approaches identify both the consequence of elements not working and highlight the potential for innovation emerging from how the components work together, sparking opportunity.

As noted, this provides,

- A picture of the sector in which people and organisations can locate themselves and their interest,
- A way of organising and utilising a mix of qualitative and quantitative information to explain the current state, causality and implications,
- A way of increasing understanding and improving design of intervention priorities and mixes which can contribute to improved performance productivity and outcomes while also increasing sector capability, resilience and sustainability,
- An approach which lessens risk in the face of change.

The analysis includes a mix of:

- Review of previous reports, legislation, policies and strategies,
- Structured survey with 48 people providing a cross section of businesses along the extent of the value chain, and
- In depth discussions and consultation with 29 industry contributors, at times multiple instances.

The survey provides a mix of qualitative and quantitative responses which in conjunction with the depth discussions and available data combine to provide a description of scale, impact and operations and development pathways. This also provides a collective voice and robust analysis of the contribution of the sector, its operability and confidence in the conclusions.

The model used to frame, integrate, synthesise and analyse this information, follows.

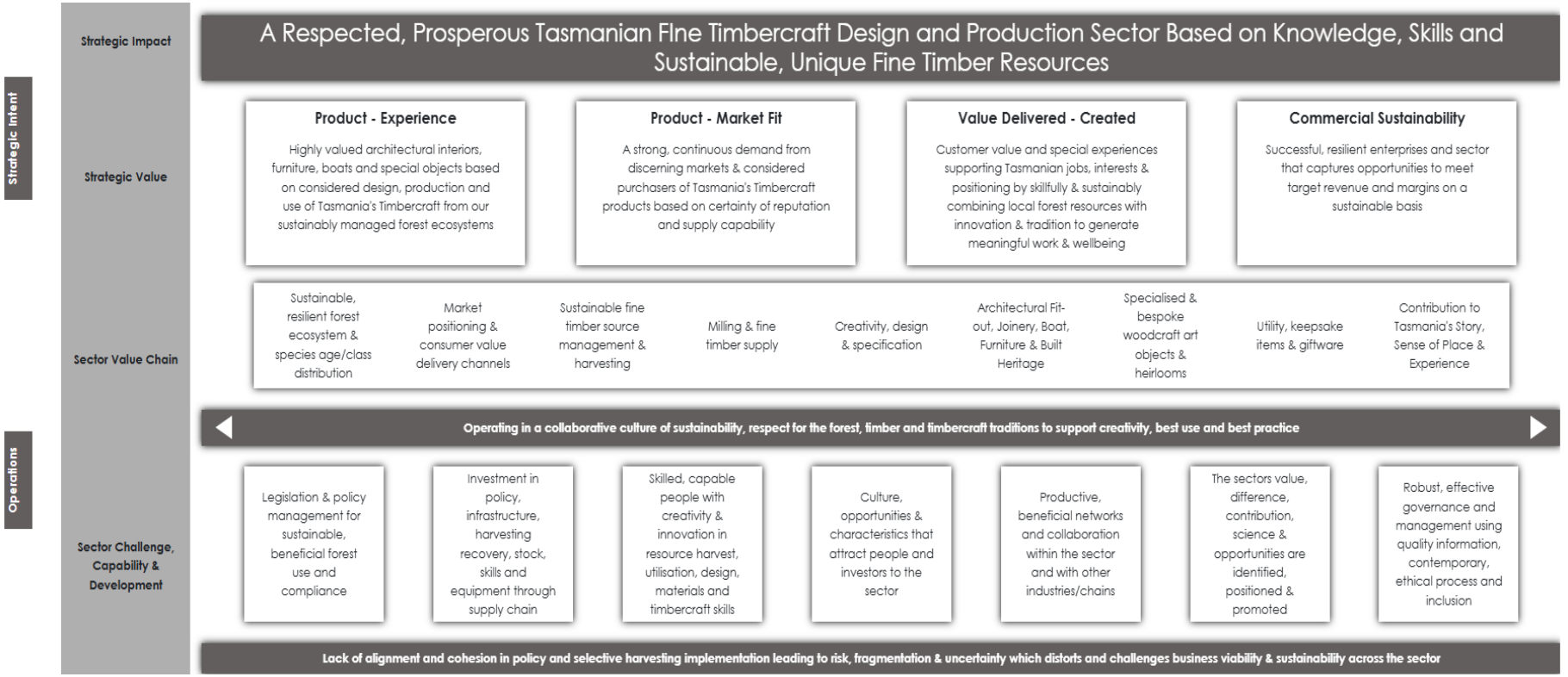


Figure 1 – The Fine Timbercraft System

The lack of a clear, articulated and commonly agreed sectoral strategic intent is evident through the analysis. The lack of common purpose and associated environmental, social and economic outcomes to which all responsible policy development and government land managers agencies can align results in siloed considerations and reductionist approaches which focus on a specific issue or interest fail to effectively address systemic implications and challenges. While the individual perspectives are important, they also need to be considered from a system operability and performance perspective.

1.3. Structure

The review is structured as follows:

Introduction, Context & Challenge – A description and analysis of the sector, its scope, how it works to transform special species into high value products and the subsequent contribution to Tasmania. This includes a description of the shaping factors, their implications and longer-term perspectives which influence both the current characteristics, position and the likely future of the sector.

Demand– A combined analysis of the factors impacting demand, demand growth and shaping factors providing an indication of demand for timber and final production. This includes indicators of stock holdings and demonstrates how the timbercraft and makers sector has continued over the recent period of SST low and erratic harvest. A discussion of the relationship between marketing, demand and the potential for an agile incremental supply model based on a primary focus on selective harvesting and the development of a durable harvesting model to support the sector to 2037 and beyond.

Species Distribution and Harvest Supply Capacity – A multi-criteria analysis of the shape files to assess the area of land on the PTPZ land, reserves and private land which demonstrate SST harvest capacity. A summary of analysis of potential Huon Pine harvest by Peterson.

Harvest & Supply – A profile of supply from PTPZ demonstrating the decline in special species log harvest volumes and proportion of sawlog, the variability in Blackwood harvest since 2015, following the Tasmanian Forest Agreement. A discussion of priority, importance and viability of a structured selective harvest model and delivery system, including access to the forest.

Harvest Legislation, Policy Settings & Management Stance – The peak of the industry triangle which empowers access to the timber resource and how the various instruments have been implemented and practised to deliver the objectives and associated strategies.

Milling & distribution – A profile of typical log delivery and recovery from 2015, changes to the structure of the milling sector and summary of the distribution models utilised.

Community Contribution, Social License & Sentiment - Aspects of broader contribution, underlying threat and opportunity to respond and build new opportunity

Each section includes key conclusions and recommendations to address constraints and build on opportunities.

2. Introduction, Context & Challenge

This analysis considers the future of the Tasmanian fine timbercraft sector and its continuation of over 200 years of contribution to the economic and social wellbeing of communities and the traditions of crafting valued objects from local timbers to meet market needs and opportunities.

Fine timbercraft, in conjunction with unique timbers applied to interior design, furniture, boats, art objects and utility items combines design and aesthetic with purpose to create a flagship for Tasmanian industry and presence in national and international markets.

Consideration of its future requires a clear understanding of the context which frames how the sector operates, how it enhances or constrains its operability, performance and productivity.

2.1. Special Species Timbers & how they're supplied

The Forestry (Rebuilding the Forest Industry) Act 2014 (the Act) lists the key special species to include:

(a) timber of the following species:

(i) Blackwood (*Acacia melanoxylon*);

(ii) Myrtle (*Nothofagus cunninghamii*);

(iii) Celery-Top Pine (*Phyllocladus aspleniifolius*);

(iv) Sassafras (*Atherosperma moschatum*);

(v) Huon Pine (*Lagarostrobos franklinii*);

(vi) Silver Wattle (*Acacia dealbata*); and

(b) timber of any other species that is prescribed by the regulations; and

(c) timber with particular properties that is prescribed by the regulations.

As at the date of this report, no additional timber species has been prescribed by regulation.

Special species timbers (SST) are timbers which are endemic to Tasmania and prized for their properties and appearance. These timbers include the above nominated icon timbers and other niche timbers such as tea tree. High quality eucalypt species with physical and aesthetic properties suitable for architectural interiors and furniture are also widely used by the Tasmanian SST Sector and are part of the resource mix on which fine timbercraft design and production is based.

The nominated species harvest volumes have traditionally been small. Supply has been on a downwards trajectory since 2009 and is currently at effective zero for Huon Pine and Celery Top Pine. The Sustainable Timbers Tasmania projected harvests for the Permanent Timber Production Zone (PTPZ) forecasts indicate this is the pattern moving forward.

Special species has traditionally been sourced as an arising by-product from the Sustainable Timbers Tasmania eucalypt harvest which has a singular focus on providing contracted annual eucalypt and blackwood sawlog quantities. Huon Pine supply, traditionally salvaged in very small volumes from a

traditional West Coast location, ceased in 2020[1] apart from stockpile sources with the remaining timbers predominantly harvested as byproducts from eucalypt operations across the State.

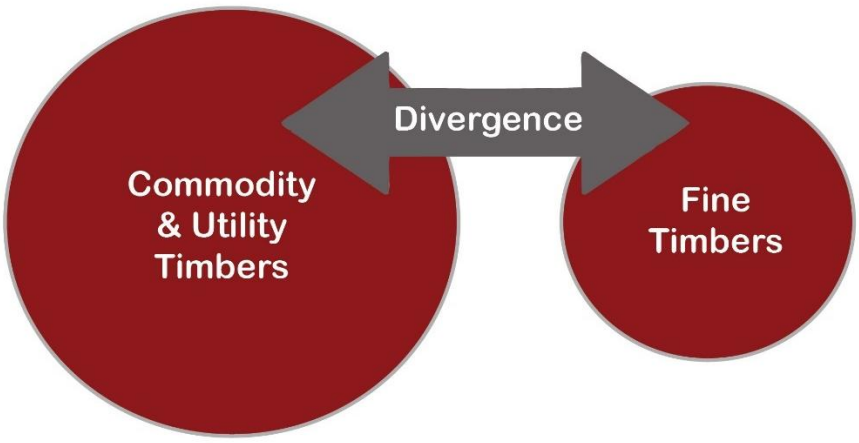
Apart from Blackwood, special species harvest volumes reflect what's likely to arise from eucalypt harvest rather than being an actively managed harvest reflective of market demand and available, sustainable supply. Sustainable Timber Tasmania has not initiated a special species harvest response to compensate for this change, consequently the eucalypt harvest transition to a regrowth/plantation model has led to a rapid decline in the harvest volumes and quality of these species, to the point where for some species, it is effectively zero.

Hydrowood is a company which salvages primarily eucalypt, myrtle and celery top pine under license from Hydro Tasmania lakes, this is a complement to terrestrial harvested material but not necessarily always considered a direct substitute.

The Tasmanian timber industry has undergone a strategic shift over the past two decades, moving from an old-growth/mature forest harvesting model, into a regrowth forest and plantation based model. As demonstrated by the special species harvest records, these forests do not contain specialty timbers at commercial volumes or maturity. This strategic shift highlights the emergence of two, different industries and the necessity of different management models.

The strategic shift highlights two distinct applications of Tasmania's forest timber resource and the potential for differentiating them based on application:

- Commodity and construction; and
- High value timber which supports high value add designed and crafted applications such as fit-out, furniture, boats, art object etc.



The Advisory Committee to the Minister for Forests recognised this threat and in in 2017 prepared the Special Species Management Plan 2017 to ensure sustainable special species supply.

[1] Sustainable Timber Tasmania Annual Report 2024

The implementation is challenged by the distribution of accessible special species across different land tenures and their public land management agencies and a lack of whole-of-government approach creates both procedural and constructive denial challenges in accessing them.

Special species log supplies are channelled through two millers, Britton Timbers and Island Specialty Timbers. Island Specialty Timbers is owned by Sustainable Timbers Tasmania, it tenders logs and processes timber for sale and on a contract basis. Britton Timbers mills and processes blackwood and other special timbers when available into sawn and veneer products. Some contributors to this review consider this model denies smaller scale, specialist milling operations with viable access to log resources. There has been a decline in the number of smaller scale, specialist mills processing SST, a transition to part-time operations, with at least one indicating closure. Other mills indicate an interest in inclusion of SST in their market offer, if it was available. This change is occurring within a period of historically low SST log supplies.

2.2. Link to Markets and Value Add

Commercial value is derived from the skilful transition of the timber along its value-add stages to final product. The narrative associated with the timber underpins the "considered, discerning" purchase characteristics of the market for these products.

The flow of materials and markets are characterised as considered, discerning decisions. There is no notion of commodity within the model as there is within the eucalypt-based fibre and sawn and engineered wood products sector. Despite this differentiation, an overlap remains in both harvesting and in the application of high-quality Eucalypt in fit-out, joinery and furniture and for specific feature grades along the same value chain as other high value woodcraft species.

The vertical integration is characterised in the use of a harvested tree, uniquely applying across species. What is often considered waste or low value material in other sectors – such as contorted branches trunks, root balls, burls, and other "imperfections" typically used for woodchips or biomass energy—is instead transformed into highly valued bespoke furniture, art, designed objects, and utility items. Meanwhile, the sound, straight components are crafted into residential, corporate, public, and commercial interiors, joinery, furniture, and boats. In other sectors waste or low value products only suited for woodchips and biomass. This transformation journey starts with the recognition of "potential" in the forest as a standing tree, fallen log or as in the case of Huon Pine a dead tree, still sound after centuries.

While the focus of the report concentrates on the "special species" and the operations of the sector in that context, there will continue to be an overlap with selected native forests that contain both special species and eucalypt.

Framing them based on the resource definition utilised makes sense from a forest resource perspective but hides the value of the design/crafted sector and its multi-perspective contribution and benefits to Tasmania.

The transition to plantation sources for framing and engineered timber products highlights market needs for continuous supply, uniformity in product performance, better utilisation of land and consideration of the role of forests as carbon sinks and resource supply (timber and non-timber products).

The current supply side stance, while convenient from a resource management perspective, is wholly inadequate for a demand based model based on market fit/value and strategic contribution to Tasmania. Used in isolation of the high socio-economic value-add, it distorts the development of appropriate policy, strategy and marketing. Additionally, it undervalues the importance of the 2-way vertical connections and the importance of capacity building in the sector.

In broad principle, there needs to be a shift from special timber looking for a market to a discerning and considered market seeking out best timber/product which delivers on and meets their value set.

Fine timbercraft, in conjunction with fine timbers, is the basis of this repositioning.

2.3. The Tasmanian Fine Timbercraft Sector

The Tasmanian Fine Timbercraft sector is the collective of millers, designers and crafts businesses and people who combine to produce architectural interiors, fittings and cabinetry, furniture, boats, musical instruments, art objects, jewellery and utility items - wooden objects based on thinking, ideas, creativity and creation - core human dimensions. The transformation of carefully selected fine timber from the interaction of design and fine motor skills through hand and machine is a Tasmanian tradition and an intrinsic culture which continues to provide meaningful employment, vocation and the generation of interest and engagement at many levels of the local, national and global communities.

Timbercraft is the source of the high value add derived from aesthetics and considered, discerning purchase of crafted objects which carry a place, timber, maker and user narrative and provide an experience of use, which is both unique and reflective of Tasmania.

The defined timbers, and many others, are made special through creativity, design, crafting for a purpose which utilises and enhances their natural structural, colour, and features attributes. Some of these, such as Huon Pine and Celery Top Pine have supported ship and boat building, and bespoke furniture making while others such as Myrtle and Blackwood have wider application in fit-out, flooring and furniture. Sassafras, in particular Blackheart Sassafras, is highly prized for fit-out, architectural fittings and furniture. For all species, including Eucalypt and many others where unique features occur, they form the basis for transformation into highly valued feature and heirloom objects and pieces. It is important to recognise that with the "right" piece of timber, highly skilled people can transform it into a unique, beautiful piece, however when the timber has unique properties, it is even more valued, this creates the hedonic/utility balance in value. This is reflected in the vast array of timbers which appear as the primary material or enhancing feature.

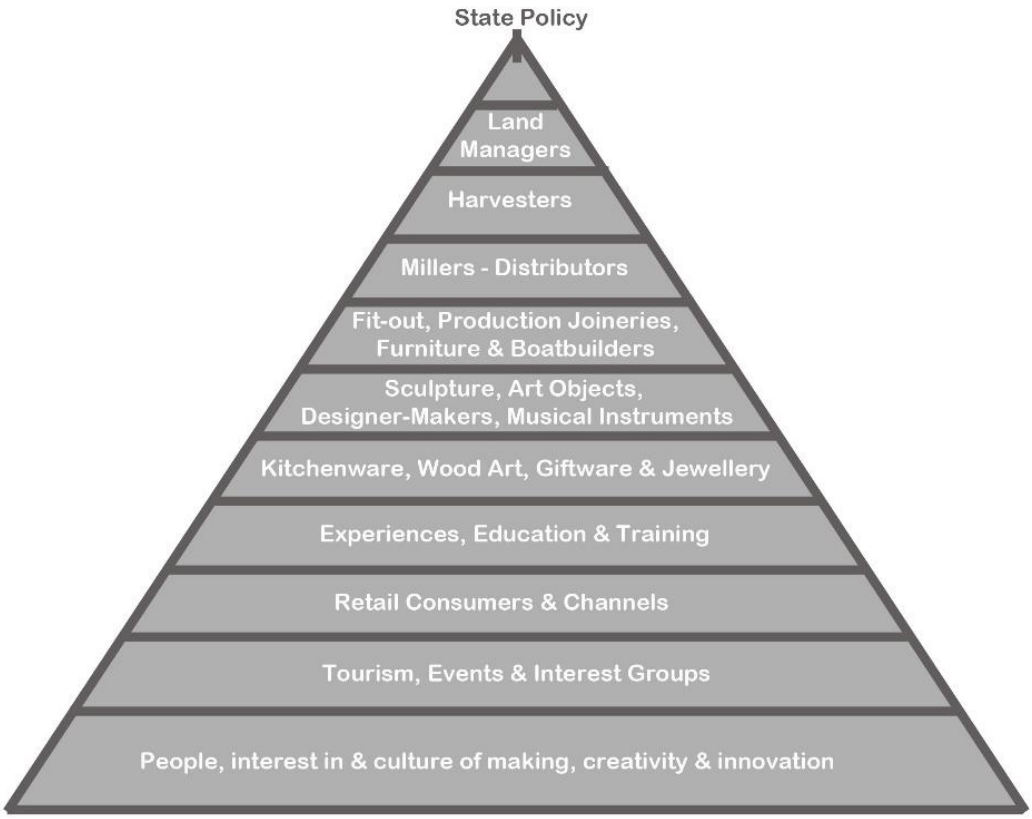
The transformation of local, high-quality timber into objects of value is a Tasmanian cultural heritage and tradition emerging from early colonisation, independently creating our stock of housing, building the boats which connected settlements and the colonies to the wider world and supported the

economic growth which created demand for furniture and fittings which supported daily life, represented achievement and portrayed independence and optimism.

This is reflective of the challenges within agriculture and food/fibre production and the emergence of "paddock to plate and provenance", that directly links from farm to discerning consumer and a focus on high value and subjective wellbeing and value. Within this report the terms "Tasmanian Fine Timber" and "Tasmanian Fine Timbercraft" are utilised as a means of establishing a sector value proposition to support a strategic intent as described in the model above.

Achievement of strategic success necessitates a rethink, analysis and activation of a purposeful, dynamic and outcome focused approach to defining what value means to who, and how to achieve it. An example of the success of change in focus can be seen with the marketing of Hydrowood. In essence the timber appearance characteristics of the wood extracted from Hydro Tasmania lakes is no different from live forest grown timber, in some instances visually enhanced. But the story behind the timber extraction, the salvage of an otherwise wasted resource and the sustainability credentials is what allows Hydrowood to be sold at a premium in the market. Similarly, timber recovered from the waste stream (e.g. demolished buildings, power poles, bridge decks etc) and recycled also attracts a premium price compared to freshly cut timber of the same species.

As a starting point for this refocus, the following pyramid represents vertical flow and socio-economic dependencies that characterise the sector from initial policy stance through the environmental, economic and social layers in which value is added and benefits accrue across Tasmanian society.



This diagram reinforces the power, influence and importance of getting it right at the peak of the pyramid to ensure the benefits flow through the fine timbercraft sector, into the community and to contribute to Tasmania's positioning, liveability and wellbeing.

The pyramid summarises the layers of connections and interdependencies between the use of fine timbers and contributions to Tasmania. Each layer is the source of potential improvement and further socio-economic value add.

The connections pyramid highlights the way the sector overlays Tasmania, integrates with and enhances other sectors and populations conditions. Uniquely flowing through the community it contributes to the building industry, to manufacturing, to the arts, to tourism and importantly providing a traditional creative activity and basis for socialisation through markets, guilds and interest groups. In doing so, the sector supports wellbeing, strengthens community fabric and drives economic contributions across Tasmania.

Indicative scale, participation & contribution of the Special Species Sector

There is no direct correlation with the timbercraft sector and ABS industry and occupation classifications, as such there is no formal statistical data available to confirm the sectors direct employment and economic contribution. Previous special species reports coincided with significant industry/community research associated with industry upheaval and incidentally with an ABS once off study of Australian recreational pastimes providing detailed interest/locational profiles. This work identified 2,000 FTE positions, a further 8,500 part time and income earning hobbyists engaged in the sector. While there would have been losses and gains, there is no evidence to suggest any real decline in these participation numbers.

In many ways, the sector mirrors the structure of the tourism industry, businesses and occupations crossing standard industry boundaries which makes it challenging to neatly quantify its employment, value and value add. However, unlike the tourism industry, which also spans different industry statistical classifications, timbercraft does not have an Australian Bureau of Statistics (ABS) "satellite account" which draws proportionately from sectors to create specific estimates of employment, output and value add. The limits to the ABS categorisation in statistically defining the "special species & woodcraft" is well recognised[2].

From an employment and value add perspective the corporate and larger business components of the sector include harvesters, millers, joiners and production furniture makers, their business models utilise a market driven by diverse mix of timbers and other wood products, much based on high-quality Eucalypt, the flagship Blackwood and other nominated signature special species timbers. Each species and other wood products play a role in delivering a viable business model. The mix is critical for scale (revenue and productivity) and resilience in the face of market dynamics. This highlights the

[2] Jacki Schirmer, Mel Mylek, Anders Magnusson, Brigitta Yabsley and Julian Morison - Socio-economic impacts of the forest industry Tasmania May 2018

complementary roles of the defined species, other highly valued species and eucalypt as components of the sectors portfolio of species and products. Within a balanced and viable portfolio each plays their part making the whole sector successful and sustainable.

The sector operates at multiple levels, including larger scale production businesses and a wide range of mid-size and smaller operations. For example:

- Britton Timbers & Veneers employ approximately 100 FTE,
- Outsourced milling from Hydrowood contributes to employment in 3 mills across the state,
- Production joineries operating across the residential and commercial construction industry are distributed around the state and employ around 35 FTE each,
- Furniture makers employing more than 5 people,
- At the next level, most enterprises reflect the small business category of 6-10, 1-5 people, single and multiple owners and employees, including part-time operations

The sector is widely dispersed across regions with harvesting occurring within the northwest, west coast & southern forests, joineries and furniture making in each region and designer makers operating statewide. The supply market works on a statewide basis, people sourcing from those who have specific materials, no geographical constraints have been identified.

The following provides a picture of how the sector operates on a day-to-day basis, including its focus, structure and manner in which the sector operates to access materials, produce and get product to market.

It is a cross-sectional representation and not a statistically representative representation of the indicative level of participation in the Tasmanian Fine Timbercraft sector. This information is drawn from a number of sources and reflects the lack of statistical data which is collected at the disaggregated industry and occupational level at which the sector operates.

Summary Participation & Contribution [3] is indicative of the levels of direct and induced/flow-on participation.

In aggregate terms current and future participation is stable, however within specific sectors this is not the case. Wooden boat builders cannot meet enquiry level because of a lack of fit for purpose material, some making furniture to maintain employment. Production furniture makers who need to achieve a price point to maintain markets through national chains, struggle to achieve this, in part because of the intermediate processing costs of lower quality materials, leading to downsizing. Small specialist mills downsizing, closing from lack of log supply. These are lead indicators to the risk in the current log supply model.

[3] From a statistical perspective the revenue, value add and employment data spans 4 ABS industry categories, Forestry & Logging, Wood Product Manufacturing, Transport, Furniture & other manufacturing, none of which can be disaggregated to reflect the level of direct employment attributed to the timbercraft activities and species[3]. The bespoke furniture designed objects and utility subgroups form a part of the Arts industry which concentrate on the use of the nominated special species, eucalypt and a small volume of imported timbers. Earlier analyses of the sector were concurrent with significant analysis of the industry, the now discontinued Forest Industry Surveys and an ABS specific project on hobby participation in Australia, providing sector data no longer available. The derivation of these indicators is outlined in the document below.

Sub-sector	Business Numbers	Indicative Employment, Participation	Estimated Annual Direct Economic Value
Harvesting & primary Processing	17 Mills	600-700[4]	n/a
Architectural interiors, Furniture, Fit out, Built Heritage & Boatbuilding	302[5] + specialist builders	1,100 - 1,200[6] + specialist builders	n/a See value add, below
Designed objects & production	n/a	1,750[7] full & part-time	n/a See value add below
P/T Comm, Hobby	n/a	8,500[8] Constant - Identified COVID increase	
Events - AWBF, Tasmanian Craft Fair		$4m direct into Boat Building, $29m visitor direct & flow-on	

Figure 2 - Summary Sector Participation & Contribution

The above provides a summary of the large scale and multiple beneficial participation generated across and by the sector, its products and narrative, as outlined in the above connections pyramid. It reinforces the widely dispersed direct socio-economic importance of the sector, including jobs and income generation, and cultural contributions in both built and marine heritage conservation. Additionally, it underscores the sector's role in supporting the arts, tourism and people's engagement in meaningful community activities, socialisation and craft-based hobbies. This mix of tangible and intangible benefit is arguably intrinsic within the sector and a practical example of a pathway to employment, vocation and integrated health & wellbeing.

The participation is based on using special species timbers to make highly valued products. Tasmania's high-quality timbers are differentiated by species, specific timber characteristics and the intermediate material they are processed into as input into an end product.

The following table summarises the key applications of processed timber by dominant species.

The abbreviations utilised are as follows

FO - Architectural fit-out, interior joinery, staircases, flooring, including built heritage conservation & restoration

F - Furniture, production and bespoke

BB - Boat building & conservation & restoration

[4] Based on composite data, Jacki Schirmer, Mel Mylek, Anders Magnusson, Brigitta Yabsley and Julian Morison - Socio-economic impacts of the forest industry Tasmania May 2018, Sustainable Timbers Tasmania Annual Report 2023/24, information tables; Jonathan Wong, Jeremy Tasker, Stephanie Black ABARES National Wood Processing Survey 2021–22 Research by the Australian Bureau of Agricultural and Resource Economics and Sciences Research report, October 2024 proportionate to blackwood & high quality eucalypt harvest.

[5] From survey interviews, ABS Business count and Occupation data

[6] From Survey interviews

[7] Slight decline in production furniture potentially off-set by residential joinery demand

[8] This volume is consistent with the Review of the Tasmanian Woodcraft Sector (2009) utilising a concurrent once-off ABS national study of past-times, now likely conservative in number as a result of any decline being offset by COVID increase as identified by distributor and supplier survey responses,

MIA - Musical instruments, art object, bowls

SP - Giftware, kitchen items, jewellery

SPECIES	Square edged timber	Through & through slabs	Sliced veneer	Sawn veneer
BLACKWOOD				
Plain	SP, F, MA, FO	F	SP, F,	SP, F, MIA, FO
Figured	SP, F, MIA	F	SP, F,	SP, F, MIA
Fiddleback	SP, F, MIA	F	SP, F,	SP, F, MIA
Teardrop	SP, F, MIA	F	SP, F,	SP, F, MIA
Buttress		SP		SP, F, MIA
CELERY TOP PINE				
Plain	BB, SP, F, MIA	F, BB	SP, F,	, MIA
EUCALYPT				
Plain	SP, F, MIA, BB, FO		F, FO	F, FO
Figured	SP, F, MIA	F		
Fiddleback	SP, F, MIA	F	SP, F,	MIA
Birdseye	F, SP		SP, F,	MIA
Hobnail			SP, F	
Buttress				MIA, F
Burl		F	F, SP	F
HUON PINE				
Plain	BB, F, SP,	F, BB	F, SP	MIA
Whitebait/teardrop	F, SP,		F, SP	MIA
Birds Eye/Burl	F, SP,	F	F, SP	MIA
Quilted/Waterwave			F, SP	MIA
Buttress		BB		
KING BILLY PINE				
Plain	BB, MIA, FO			MIA
Birdseye		SP	F, SP	
Quilted		SP	F, SP	
Buttress	MIA	BB		
MYRTLE				
Red	FO, F, SP	F	SP, F	
Figured	F, SP	F	F, SP	MIA
Quilted	F, SP	F	F, SP	
Teardrop	F, SP	F	F, SP	
Burl			F, SP	F
Tiger	MIA	SP	F, SP	MIA
Buttress		SP		F
SASSAFRAS				
White	SP, FO		F, SP	
Blackheart	FO, F, SP	F, SP	FO, F, SP	
LEATHERWOOD				
Plain	F, SP	F	F, SP	
Blackhearted	F, SP	F, SP	F, SP	
MUSK				
Plain	F, SP		F, SP	F
Burl		SP	F, SP	F
NATIVE OLIVE				
Blackhearted	MIA	SP, MIA	SP, F	MIA

It is important to note that this profile is designed to identify traditional and current uses where material is available. Some species are in very small supply and within them, timbers with the identified characteristics are rare and highly valued.

A single tree will produce a range of intermediate timber products, varying in quality, appearance and potential uses, not all trees will produce structurally sound, clear boards but will produce material for other high value uses. Selective harvest techniques provide an increase in the return on a harvested tree by selecting for a mix of end use purposes, enhancing the economic value add while retaining eco-system integrity. This approach varies from the longstanding supply model for non-blackwood special species and salvaged Huon Pine based on the sector "getting what they get" based on arisings.

While the aggregate value add from the sector is not able to be represented from the current statistical profile as the fine timber components are one of a range of inputs into production, the sectors high value add is not in doubt as identified below.

Sector	Activity & Characteristics	Timber as % cost inputs	Output Value	Direct Employment	Role in Portfolio	Multiplier, +,_-
Fit-out Joinery	Intermediary shaping, joinery, installation	Select Grade, 10%, $800,000	$8,000,000	35	Scale & prestige	10
Wooden Boat	Restoration & Build	Boat Grade, 8%-15%, $100,000	$1,200,000	4	Hero	7 to12
Art wood	Large dia, featured	Character, 7%, $8,200	$120,000	2	Presence	15
Architectural Lighting	Curved, featured veneer	Veneer, 6.6%, $300,000	$4 - $5,000,000	1	Striking	15
Giftware, jewellery & Kitchenware	Repetition, hand finished	Offcut, 17.5%, $350	$2,000	1	Repetition, mass market	6

Figure 3 Activity Value Add & Productivity

Figure 3 highlights both the high value add, generally a multiple of greater than10 times the value of the fine timber input cost and the revenue job, derived from the fine timbers and their typical applications as medium size, small business and part-time vocations. This and its distribution across the state is arguably unique to the fine timbercraft sector and highlights the potential value to the state from sustainably managing the special species resource.

Timbercraft has a widely dispersed direct socio-economic importance in jobs and income and its cultural contribution in both built and marine heritage conservation and to arts, tourism and people's engagement in meaningful community activity, socialisation and craft-based pastimes. This mix of tangible and intangible benefit is arguably unique to the sector and a practical example of a pathway to employment, vocation and integrated, health & wellbeing.

As a creative sector, there is significant designer participation. While some designers will have project-based engagement with the fine timbers, for example interior designers, others such as furniture designers focus primarily on the nominated special species as bespoke furniture and the producers of smaller and designed objects.

Several ABS business and occupation data sets partially represent the scale of the sector. ABS reports employment for wood product manufacturing in Tasmania as at June 23 is 1,606 fte, an increase from 1,378 in June 21[9]. This is an aggregation of a range of activities, product types and species utilisation. A combination of business count and occupation classification data provides some insight into the employment associated with fine timbercraft and supported by the species.

[9] 81550DO003_202223 Australian Industry, 2022-23, Table 2 Manufacturing industry by States and territories by ANZSIC subdivision, 31 May 2024

ANZSIC Industry	Non Emp.	1-4 Employees	5-19 Employees	20-199 Employees	Total
	no.	no.	no.	no.	no.
Other Wood Product Manufacturing n.e.c.	26	10	3	3	41
Boatbuilding and Repair Services	25	14	8	3	50
Wooden Furniture and Upholstered Seat Manufacturing	40	18	14	3	74
	91	42	25	9	165

Figure 4 Employment associated with SST

The net movement between business entry and exit was a loss of 12 (9%) businesses across the 3 sectors, primarily single operator businesses during the 3 months to June 2023. This profile is not fully representative of the sector, it does not include joinery businesses. Tasbuild, a building & construction industry superannuation scheme, identifies 137 joinery/cabinet making enterprises (registered with the entity) with 647 eligible employees.

Employment is partially captured by ABS occupation statistics, as at February 2024, the data identified the following employment levels for material occupations.

Occupation of Main Job ANZSCO (2013) v 1.2	Employed Total	Number of hours actually worked in all jobs ('000 hrs)	Ave weekly hours
3491 Cabinet Makers	116	4.40	37.97
399 Boat Builders & Shipwrights	246	6.04	24.56

Figure 5 Employment levels for material occupations

The lower weekly hours worked by boat builders and shipwrights reflects the different business models between the sectors employing these occupations.

The Fig 5 data set does not include the estimated 1,750 people engaged in the designer/maker, maker and small item producer elements of the fine timbercraft sector as identified in the 2009 detailed forest industry and woodcraft sector research associated with the forest industry restructure

The cross-section consultation during this project identified key fine timbercraft business model characteristics which indicate a sector that has a balance of long experience and a flow of new entrants to provide the sector sustainability. The mix of full and part-time occupation indicates the diverse work options available to people to achieve work conditions which suit needs. The high proportion of market stability and increasing demand indicates the future potential of the fine timbercraft sector. Within the sector there are exceptions, such as production furniture makers challenged to meet price points required by national retail chains.

Business characteristics	Furniture & Joinery, fit-out	Boatbuilding	Woodturners, wood art & musical instruments	Giftware, jewellery & kitchenware
Producing for > 20 years	50%	40%	57%	36%
Producing 6-10 years	23%	20%	29%	28%
Full time	50%	80%	35%	64%
Part-time	50%	20%	65%	36%
Static /Increasing demand	81%	80%	77%	80%
Decreasing demand	19%	20%	23%	20%

Figure 6 Years businesses producing products by groups (%)

Despite significant challenges, the sector maintains its importance in Tasmania's economic, cultural and social contribution. It also provides the foundation for significant current and potential flow-on benefit but is constrained by supply, particularly of non-Blackwood special species, through legislative, policy and practice impediments to the implementation of agreed strategies. This constraint is further compounded by the sectors lack of strategic positioning and marketing.

Recommendation

Given the very limited availability of sector information:

> *It is recommended that Government consider sector specific studies to gather and update key sector metrics and trends on key enterprise material utilisation, employment numbers and demographics, and business condition information.*

The Tasmanian Fine Timbercraft Sector's future contribution is dependent upon a combination of internal capability and how it adapts to and captures opportunities arising from a range of external factors which have the potential to impact it.

2.4. Externalities

Forests are increasingly recognised as providing a wide range of benefits; legislation, policy and regulation is catching up with societal value-based themes which interconnect environmental, social and economic values, principles and practices in a way that voluntary principles could not. This has extended the traditional economic/environment tension into the role of forests in mitigating climate change and the notion of environmental services around this, ecosystems and bio-diversity; social and cultural dimensions of place/country and their role in wellbeing through amenity and experience. The recognition of the natural capital of forests in accounting frameworks has increased societal recognition of the environmental services that forests provide. These include biodiversity, water quality and quantity, carbon sequestration and storage, food and medicinal products. It is against this backdrop and a range of external factors which influence the sector and its businesses.

No sector or place operates in isolation of external factors which impact or are likely to impact their strategic positioning, operations and ability to deliver value to contributors and consumers. As a natural resource-based sector which delivers products into an open market, the sector is influenced by a range of externalities, as detailed below.

Sustainable Timbers Tasmania

For the non-blackwood/high quality eucalypt components of the sector, Sustainable Timbers Tasmania can be considered an external factor. The GBE is governed by its mandate and heads of power derived from its legislative base, its primary focus is to deliver on these. As identified above, the STT strategic focus and harvest practice/profile has excluded meaningful harvest of non-blackwood/high quality eucalypt special species timbers. Blackwood Harvest volumes are contracted to Britton Timbers. Apart from allowing a private small-scale, once-off harvest of Sassafras, no specific purpose special species harvest has occurred within the partial harvest parameters of the Special Species Management Plan (2017). The highest value add component of the sector is dependent on what is for practical purposes an external organisation which has demonstrated and forecast no intent to harvest special species rich zones to supply the sector.

Implications – *Gatekeeper on access and selective harvest of special species timbers on PTPZ.*

Mandatory Climate Reporting, Environmental, Social & Governance (ESG)/Sustainability Markets

The manifestation of the United Nations Sustainable Development Goals into ESG (Environmental, Social & Governance) and ISSB (International Sustainability Standards Board) and mandatory climate reporting penetration into policy/investment decisions, corporate compliance reporting and their supply chains is generating a re-think and recalibration of supply chains to minimise content which includes, for example, high carbon levels in process & transport (wood miles), results in environmental damage when harvested and produced with exploited labour. In the Australian market these imperatives deliver opportunity for Tasmanian sourced product to replace imported timber. These compliance-based codes have solidified the balanced people, planet, prosperity concept of value and cost in domestic and international markets and consumption motivation. Natural capital accounting is a sub-set providing an accepted methodology spanning ecosystems, plant & animal diversity, water quality and carbon storage.

The finalisation of the Australian Sustainability Reporting Standards (ASRS), mandating the reporting of climate related disclosures for large companies (including their upstream and downstream components and impact – capturing smaller companies supplying them and utilising product) from 1 January 2025, will crystalise the carbon cost of wood miles associated with international imports. This provides an opportunity for Tasmania within the national market, further enhanced by the voluntary standard for sustainability related disclosures which include social and environmental factors[10].

The high value woodcraft sector can be a "flagship" of how to operationalise and deliver ESG benefits from a sustainable, local supply of timber and timbercraft products.

[10] Australian Government, Treasury Laws Amendment (Financial Market Infrastructure and Other Measures) Act 2024

Implications – Larger companies and their supply chains identifying sources of emissions and other negative environmental impacts, seeking supplier modification to practice or substituting suppliers/production techniques – increased local, sustainably sourced supply.

Australian Carbon Credit Units

Australian Carbon Credit Units (ACCU) since 2011 have provided a pricing mechanism for this specific environmental service. In Australia this government policy has restricted which landscapes and management regimes are eligible for inclusion. This highlights the forests' environmental services and the principle of attaching a monetary value to active management of carbon sequestration. This relates closely to ESG identified above and the climate related disclosures/mitigation. It reflects the multiple values of forests and how value is generated while minimising social and environmental costs to optimise direct and flow-on benefits. The carbon market and carbon emissions create a critical tension between local and global policy stances. Forests are a productive carbon storage method, as well as the source of renewable, durable materials used within society, ceasing harvesting increases carbon storage but reduces the volume of locally renewable material. The net carbon gain is determined by the balance between local retention and source of replacement material, the further afield the source (& its harvest, process method) the higher the carbon emissions in providing and operating the logistics chain to bring it to market. The sector is at risk from silo, rather than systemic policy considerations.

The Australian government is currently considering a proposal that has the potential to cease native forest harvesting in Queensland, New South Wales and Tasmania[i][11] [12]. If this proposal is progressed, it is highly likely that the special species sector would lose access to its primary resource and would be shut down.

Implications – Environmental services are an alternate use for forests, subject to specific legislative support. The challenge is to establish balance between these traditional and new uses and as is occurring in the private forest sector active management for integrated timber harvesting and carbon sequestration.

Policy Change and the Political Nexus

This externality has the most significant potential to negatively impact the special species woodcraft sector.

The Victorian and Western Australian governments decided to cease native forest harvesting in recent years. These reflect different economic landscapes, Victoria is highly urbanised and mining rich Western Australia are both different to Tasmania.

In the Tasmanian SST context, there has been significant increases in opposition to all forms of native forest harvesting, including SST harvesting since approximately 2013, despite concurrent significant increases in forest reservation.

[11] https://minister.dcceew.gov.au/bowen/speeches/speech-australasian-emissions-reduction-summit-melbourne
[12] https://www.dcceew.gov.au/about/news/priorities-accu-scheme-proponent-led-method-development-announced

A significant challenge to the achievement of long-term policy settings arises from political influencers and subsequent support for, or protest of, native forest harvesting. Conservation focused entities have and continue to mould views and influence policy; however, they also evolve their positions.

The Green's 2010 and 2013 State election Forest policy was considered by sector contributors to be very supportive of the SST sector. This policy stating that "*Tasmania's specialty timbers industry and distinctive high value finished products should be icons of the State's timber industry*". The policy identified a need for the establishment of specialty timber forest zones and committed $5M for the establishment of a Specialty Timbers Commission, training, skills and tourism centres, including specialty timber sawmills in the Styx and Huon valleys. This built on their 2004 policy which estimated the value of the Specialty Timber woodcraft sector to be "as much as $100 million/annum".[13]

Between 2013 and 2017, The Greens withdrew support for special species harvesting, now opposing all forms of native forest harvesting: and the Special Species Management Plan (2017).

In a broader context, in August 2004 a coalition of organisations including the Wilderness Society, Australian Conservation Foundation, Greenpeace Australia Pacific, Tarkine National Coalition, Doctors for Forests, Huon Valley Environment Centre and 15 more organisations created and supported a policy position paper on native forest harvesting[14].

These groups supported management of special species forests to produce high-value products from such timbers and stated: "*Labor intensive boat building, fine furniture and craft-based timber industries use relatively tiny volumes of special species timber (18,500m3 p.a.) and employ approximately 650 people (TWFF survey). Further industry development and access to specially managed forests would see this industry grow.*" *In addition,* the report called for $5M in funding to ensure a specialty timber supply for artisan and other high value/low volume users including specialty processors, furniture designers/makers, craft workers, timber splitters and wooden boat builders.

Despite significant gains in forest reservation since 2004, policy changes resulting from the 2012 Tasmanian Forest Agreements and the subsequent Tasmanian Wilderness World Heritage Area extension which removed access to much of the high-quality special species resource, support for the special species sector from these groups has become opposition, with some of the groups becoming the sector's strongest detractors.

Cessation of native forest harvesting in other state jurisdictions provides Tasmania with both an opportunity and risk. The opportunity is to demonstrate the considered application of sustainable, ethical practices to deliver high value wood-based products to meet demand gaps in these markets and the risk of the policy change being reflected in Tasmania. These policy changes demonstrate the risk of simplistic binary decisions in resource management, in particular forest management and the importance of demonstrating options.

[13] Tasmania's Forests: The Way Forward – Tasmanian Greens 2004 p.49, continued through to 2013

[14] Protecting Forests Growing Jobs 2004 – The Wilderness Society in collaboration with The Australian Conservation Foundation

Tasmania has a competitive advantage with a robust forest practices system and bipartisan support for native forest harvesting. The area's most at risk for SST supply are continued access to mature eucalypt forest and rainforest.

These dynamics highlight the need for evidence based, community focused information from a trusted source. The public need to be confident access is at a small scale and timber extraction practice meets sustainability/ESG criteria.

Implications – The forest/timber industry operates in a highly contested economic and environmental values space, where there is a high level of distrust and in some quarters highly entrenched opinions and stances arising from a mix of earned and manufactured reasons for distrust. Policies and approaches are reviewed from these standpoints and their political consequences. The long-run sustainable system approach inherent in this report faces the risk of being reduced to a binary, zero sum game.

Skills and digital factors

There is a divergence in education and training across the spectrum of education and skills on which the timbercraft sector is based. There is reduced program access and capability within the UTAS and TAFE encompassing design and the fine handcraft skills on which the sectors traditions and reputation is based. Access to SST and focus on the joinery skills within high schools and colleges is dependent upon teacher interest and the funds to purchase timber. Shortages of joiners makes "system" approaches to fit-out and cabinetry more attractive as a supply option and the "norm".

In addition, the skills and equipment required to harvest and process timber are rapidly diminishing as the native forest sector reduces in size. This includes wood processing equipment such as saw and veneer mills, skilled tree fallers, extraction machinery and operators.

Implications – The challenge of retaining fine hand motor skills and traditional techniques as both discrete knowledge and skills sets and integrating them into digital production to achieve further value add.

Consumer Behaviour Dynamics

The market preference for hedonic (experiential, subjective value) or utilitarian (functional) purchases[15], and how these 2 behavioural perspectives combine in the purchases along the value chain, is dynamic and important in considering product positioning and targeting and in the way the sector operates from forest to final product. The importance of this is highlighted throughout the report in the perceptions and preference for legal/certified timber (hedonic purchasers) and the challenge which occurs when placing high value timber production to a mass market (say project homes or national homeware chain) where price and margin power is concentrated in the distribution channel. Conversely, hedonic criteria influence people when purchasing for others, a factor when considering

[15] Who Prefers Legal Wood: Consumers with Utilitarian or Hedonic Shopping Values? Pipiet Larasatie, Radityo Putro Handrito, Triana Fitriastuti and Dhina Mustika Sari. Forests 2023, 14, 2163. https://doi.org/10.3390/f14112163

high end commercial fit-out where the impact on client experience and flow-on consumption is important. The hedonic concept is also reflected in a "non-purchase" decision based on values.

Implications – The Tasmanian Fine Timbercraft market is not a mass market, the closest sub-sector is production furniture which is supplied through consumer durable chains. Considered targeting and promotion of a value-based narrative is central to both protection of repeat sales and new sales.

Climate change

Climate change is potentially introducing risk to a range of forest types which are both dependent on consistently high rainfall and prone to fire risk. What have been viewed as certain "stocks" may prove not to be resilient in the face of alteration to rainfall characteristics.

Implications - While in the long term, the potential effects of climate change on the SST resource may certainly impact the sector, these potential impacts are unknown at this stage.

Fire

Furland *et al* 2021[16] have modelled the bioclimatic drivers of fire severity in Eucalypt forests. They concluded that "climatic constraints on fire weather and fuel availability, not fuel load, are the key drivers of fire severity in these forests."

They postulated, based on other studies and their results, that the presence of rainforest understory led to a moister microclimate and lower flammability, the effect increasing with the age of the forest.

Low intensity fire has been used for centuries by Aboriginal occupants of Tasmania to limit the spread of rainforest into grass moorlands. The absence of such fires has resulted in the spread of Myrtle dominated forests into grasslands and resulted in the decline of Eucalyptus forests.[17,18]

Predictions around the impacts of high-severity fires are uncertain. There have been fires in Tasmania which have severely burnt large areas of tall wet Eucalypt Forest and pure rainforest. The most recent examples were 2019 fires which severely burnt mature stands of rainforest and Gondwanan pine species in Tasmania. The impact was patchy and unpredictable.

Implications - The supply of special species timber is unlikely to be catastrophically impacted by wildfire unless there is a long-term drought over several years followed by severe fire weather conditions. The risk can be mitigated by strategic prescribed burning on the margins of rainforests and tall wet eucalypt forests along with maintenance of firefighting capacity and infrastructure to enable access to forests for firefighting purposes.

In cases of extreme wildfires, the status of high-quality stands of special species timber should be a consideration in prioritisation of firefighting actions. Rapid response at the early stages of ignition is critically important. As an example, in 2019, dry lightning strikes caused a 36,000ha (approx.) fire in the Wanderer River area in 2019 impacting both dead standing and live stands of Huon pine. This highlights

[16] Furlaud, J.M., Prior, L.D., Williamson, G.J., & Bowman, D.M.J. (2021). Bioclimatic drivers of fire severity across the Australian geographical range of giant *Eucalyptus* forests. *Journal of Ecology*, *109*(6), 2514-2536. https://doi.org/10.1111/1365-2745.13663

[17] Ellis, R.C. (1985), The relationships among eucalypt forest, grassland and rainforest in a highland area in north-eastern Tasmania. *Australian Journal of Ecology, 10*, 297-314. https://doi.org/10.1111/j.1442-9993.1985.tb00891.x

[18] Harvest, T., Davidson, N. J., & Close, D. C. (2008). Is decline in high altitude eucalypt forests related to rainforest understorey development and altered soil bacteria following the long absence of fire? *Austral Ecology*, *33*(7), 880-890. https://doi.org/10.1111/j.1442-9993.2008.01859.x

the need for early suppression to limit high value losses. This highlights the role of dead Huon Pine as a fire fuel load

Externality Interrelationships

While these externalities have separate headings, there is a high degree of direct, lead and lag and weighting interdependence. They impact on the current performance and future of the sector and guide the analysis, conclusions and recommendations of this report.

The analysis recommends adopting a market-shaping, demand-driven approach and practice to sustainably deliver Tasmanian Fine Timbercraft. This should focus on using high-quality, unique timbers sourced primarily through an active, agile, sustainable, light touch selective harvest regime and value chain integration which remains flexible and responsive to both industry demand and market needs.

This approach is framed by the sector's clear strategic intent as the focus for investment, operations and development, a focus which tends to be missing when utilising the traditional and longstanding supply side approach.

2.5. Sector Challenges & Opportunities

The special species defined fine timbercraft sector supply chain has been shut off for the smaller volume, high value timbers as a result of:

1. The sole PTPZ sourced log supplier, Sustainable Timbers Tasmania not developing alternate sources of supply to compensate for the decline in SST harvest as arisings from eucalypt harvesting.
2. Forecast sources of special species timber identified within the Special Species Management Plan (2017) not coming on stream.

The sector has utilised stock holdings to compensate for the lack of certain flow of new material into the supply chain, this is not sustainable in the longer term & already provides a threat to some businesses within the sector.

The sector supply chain lacks a cohesive, active demand focused connection between resource and final product, impacting performance and productivity.

The sector has potential for growth to sustainable harvest limits from a combination of population growth, introduction of emissions pricing into imported materials and targeted market shaping consistent with the Tasmanian narrative.

These key factors are addressed in detail through the report.

3. Demand

Demand is the key determinant of economic success, it is also uncertain, dynamic, changing in the face of trends, competition, active targeted marketing and, at times forgotten, certainty of future supply as a pre-requisite for sales. Tasmanian Fine Timbercraft and the timbers which sustain it have a continuous 200-year history of demand. The demand patterns and opportunities expressed by contributors indicate further opportunity if supply confidence can be established.

Final product and intermediate product demand are systemically and critically interdependent but do not move in parallel. At the intermediate, operational level it is dependent upon viable access to the right material, in the right form to make the product. Strategically, the sectors commercial sustainability and contribution to Tasmania is dependent on delivering value from a viable product/market mix. While there are core value propositions and markets for fine timbercraft, these are in constant flux at the margins.

Predictions of long-term demand in any sector are highly uncertain. Although aggregate patterns are discernible, for example construction materials, the specific mixes of materials which form them are less so. The key to matching future demand is in preparation, the ability to adapt to changes by having the mechanisms and processes in place to identify and utilise market signals to adapt and shape. The previously endorsed policy of small-scale selective harvesting from special species zones and sustainable harvest limits, when calibrated with ongoing demand analysis and market shaping, provides for production, marketing and investment confidence. These are the principles of contemporary active demand management - open, timely access to resource supply and confident, sustainable production business.

An example of this is that many of the contributors to this report don't record in detail the volumes of timber utilised annually, while purchase values are broadly identifiable, these do not often correlate with use value because of draw-down of their own stocks and for larger organisations the cyclical (or lumpy) nature of many contracts. The larger mills and makers with privately owned stocks provide the buffer to peaks in demand, at a cost to them. This weighting on preparation has enabled the production sector, which is highly dependent on the non-blackwood special species to continue in the face of negligible raw material supply. It also explains the high incidence of the use of mills as a source of materials for:

- Supply of blackwood and eucalypt for production and semi-production furniture & fit-out joinery,
- Wide, but small volume transactions of mill sourced timber to complement private stocks.

The sector has adapted to a "take what you get" supply model for non-blackwood special species and within the eucalypt and blackwood components, a decline in log quality.

Currently, the forest resource supply side is framing the market, with low harvest rates, this is mitigated by stock drawdown. While individual businesses utilise demand driven strategies, it is missing at a sector level. Consequently, the sector's strategic positioning, policy settings and consideration are supply side

focused. In previous eras when eucalypt harvesting also delivered fairly certain, significant quantities of high-quality special species and when there was active salvage of species such as Huon Pine, this did not create a problem, this is no longer the case, a flip to an active demand driven management model is challenging but essential.

Introduction of selective harvesting in special species zones enables a more agile, specific needs focused approach to supply compared with the large scale, industrial eucalypt model. This enables a different demand-supply model which provides flexible supply with 2 key parameters,

- actual demand of specified species by log/material quality to suit purpose, and
- maximum sustainable yield for the species.

The current supply side will be significantly disrupted by the selective harvest model applied with a demand-based selection of species trees. The significant milling conversion rate will disrupt the historic conversion/recovery relationships between log harvest and timber recovery, creating a new model for the non-blackwood special species sector.

Specialist millers and other business operators within the sector understand these principles and are committed to both species sustainability and the application of light touch selective harvest and rehabilitation.

From a resource management perspective, this provides a simple, durable model. The challenge is in the transition from a supply transaction model between the forest manager and key industry to a model which is based on a deep understanding of the downstream value chain needs and market/product fit.

The special species timber log volume demand profile to 2037 is dependent on all of these factors, given the lack of new non-blackwood special species material being provided, the sector has adapted its business models in response. As a consistent new supply comes on stream, it will then also adapt to capture the opportunities it has identified in their contributions to this report and included in the analysis below.

3.1. Sector Demand Factors & Patterns

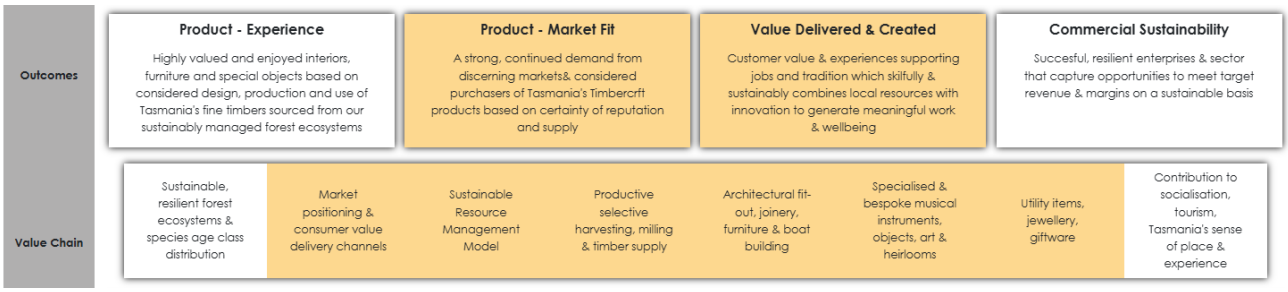


Figure 7 System Implications

The value chain highlights the importance of marketing as a means of shaping final product volumes and characteristics as the basis for intermediate material requirements and back into tree selection at harvest.

Within this context, the following description, analysis and recommendations provide a systemic mechanism to actively support and enable log supply within the sustainable yield parameters that will allow the sector to dynamically and actively manage "bounded demand" within those parameters in conjunction with optimising value from the special species timber resource and how it is transformed into products.

The following frames the basis to develop a demand-based model within a sector currently lacking but aiming for contextual certainty. It is premised on a dynamic, agile approach which connects the players along the value chain to ensure their specific challenges/needs are understood and met.

Given the diverse nature of the sector, different timbercraft groups face varied demand patterns. Architectural fit-out is dependent upon government program spending and the building investment market, both likely cyclical, while wooden boat maintenance might follow a steady pattern, as identified by the Australian Wooden Boat festival, where events will create and uplift. This is exhibited in new wooden boat builds, a large project will consume a yard's production for several years, a single project generating apprenticeships and increased timber production.

A high-profile musician using and promoting the virtue of an instrument will increase demand.

Those operating in tourism markets will experience seasonality and the impact of destination preference changes.

Extreme events such as COVID created increased demand for bespoke furniture and architectural fit-out.

The Tasmanian Fine Timbercraft sector is based on thinking, ideas, creativity and creation, the transformation of carefully selected fine timber through the interaction of these attributes and fine motor skills through hand and machine. This is a culture and tradition that continues to provide meaningful employment, vocation and the generation of interest and engagement at many levels from considered and discerning designers, specifiers and consumers

This is the source of the high value add derived from fine timbercraft and why in other cultures it is both highly respected and supported. The value created is highlighted in the following table.

Sector	Activity & Characteristics	Timber Cost as % Inputs	Output Value	Direct Employment	Role in Sector Product Portfolio	Multiplier + -
Fit-out, Joinery	Joinery, Installation	Select Grade, 10%, $800,000	$8,000,000	35	Scale, prestige locations	10
Wooden Boat	Restoration & Build	Boat Grade, 8% - 15%,$100,000	$1,200,000	2	Presence, tradition	7 to 12
Art Objects	Design, crafting	Feature, 7%, $8,200	$120,000	2	Presence	15
Architectural Lighting	Designed, crafting	Featured veneer, 6.6%, $300,000	$4,000,000 to $5,000,000	1	Striking	15
Giftware, Jewellery, Kitchenware	Repetition, hand finished	Offcut, 17.5%, $350	$2,000	1	Gift, consumer market	6

Figure 8 Value add and revenue derived from SST

Figure 8 highlights the value of demand - both the high value add and the indicative revenue/job, derived from the fine timbers and their typical applications as medium size, small business and part-time vocations. This and its distribution across the state is arguable unique to the fine timbercraft sector. The sectors value add is an indicator of the value delivered from the mix of design, timbercraft and materials, but also provides an indication of where material price sensitivity is a determinant of material choice. Businesses selling into longer distribution chains such as production furniture makers exhibit greater material input price sensitivity as they need to supply to a retailer price point, with little negotiation power.

Such specific market/product segments sit beneath macro dimension changes such as population increase and, for example the flow-on increase in demand for housing, enhanced or constrained by economic conditions. As a response to increased population and the cost of providing proximate and serviced land, the trend to smaller building lot sizes, leads to multi-story residences and demand for stairs, often a feature and joinery requiring high skills.

There are several signals which indicate increased demand potential for Tasmanian Timbercraft and the timbers on which they're based. Realisation of this potential requires a transparent, verifiable, visible and engaging narrative with the market and materially implemented by the sector. The narrative is critical but only a part of the activation.

The demand signals for fine timber, current product offerings and new products are a combination of significant changes in the external environment, survey respondent identification of unmet and potential market demand, examples identified during discussions with industry players and projected population growth. For example, consultation indicates strong demand and continuous flow for both commercial ($500k to $3m) and residential (> $300k) fit-out projects. Within these projects, and boat

building/restoration, materials comprise 10-15% of the cost, providing an important scale component to the sector to support direct employment and foundation to supply smaller operations.

Survey contributors provided a clear indication of both unmet demand and increased demand potential (Appendix 7). There is a clear and strong relationship with the importance of supply certainty and ability to realise this demand. Around 36% of contributors indicate increasing demand for existing products and opportunity for new products. Traditional products are still the dominant use of SST with 77% of contributors, however the identification of new markets (57%) and new product development (60%) reflect awareness of changing markets and customers.

Joineries tend to be responsive to client and specifier demands, with production furniture makers responsive to their retail clients. Smaller scale furniture makers tend to focus on commission work, though some do have a limited production furniture range. Within the furniture sector, consumer awareness and choice based on sustainable and ethical materials and supply chains is increasingly apparent in mid to higher tiers.

Boat building has experienced some decline in new builds of larger boats, and a focus on restoration and repair of wooden boats (84%). However, this can turn quickly with a couple of larger commissions exampled by Tasmanian boat builders constructing vessels ranging from $1m to $7m in value.

The two Woodworking groups (Group 1: Woodturners, Wood Art, Musical Instruments and Group 2: Giftware, Jewellery & Kitchenware) specialise in smaller items, providing them with more flexibility in their approach to products. Both groups offer (89% and 70% of demand respectively) a core range of products and can respond quickly to trends by adding new or modifying products to meet customer demand, using a commission to consider how a variation might be added to the range.

The sector demonstrates flexibility in the challenge of meeting demand. Those utilising low material volumes and those with strong networks feel secure in their supply, many others less so. Small scale, specialty millers identify export opportunities foregone, others indicate the challenge of pricing new commissions when both availability of supply and price are uncertain.

80% of survey contributors overall indicate an ability to utilise more material if it was available, and from this achieve increased certainty of supply and pricing.

The demand for log harvest is driven by the market demand for both fine timber and value added Tasmanian fine timbercraft. These levels of demand are driven by awareness, innovation, population growth, economic conditions and values, it is further affected by the marketing stance and the externalities such as AASB Emissions reporting, ESG and importantly cessation of native forest harvest in other jurisdictions.

Sector contributors overwhelmingly indicated a capacity to utilise increased special species timber supply.

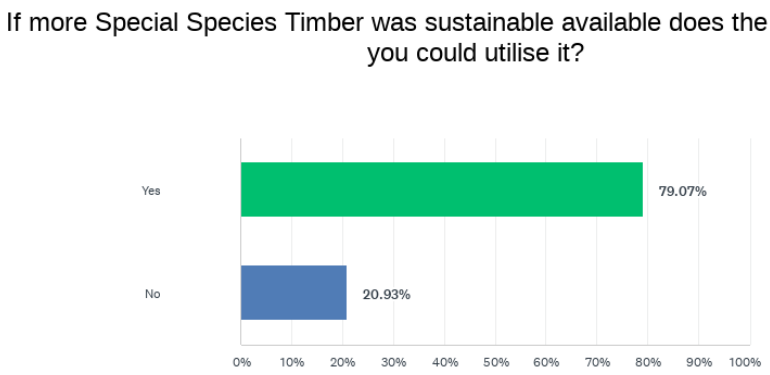


Figure 9 If more SST was available does the market indicate you could use it? (All Contributors)

79% of total contributors indicated that they could use more SST if it was made available. Of those who work full-time 88% would buy/use it compared to 67% part-time workers, a difference explained by a combination of stock holding and lower production. All boatbuilders, 76% furniture makers/joiners, 71% woodturners, wood art, musical instruments and 81% giftware, jewellery and kitchenware indicated the ability to utilise more timber to meet demand growth (Appendix 9).

How would users utilise an increased supply of SST?

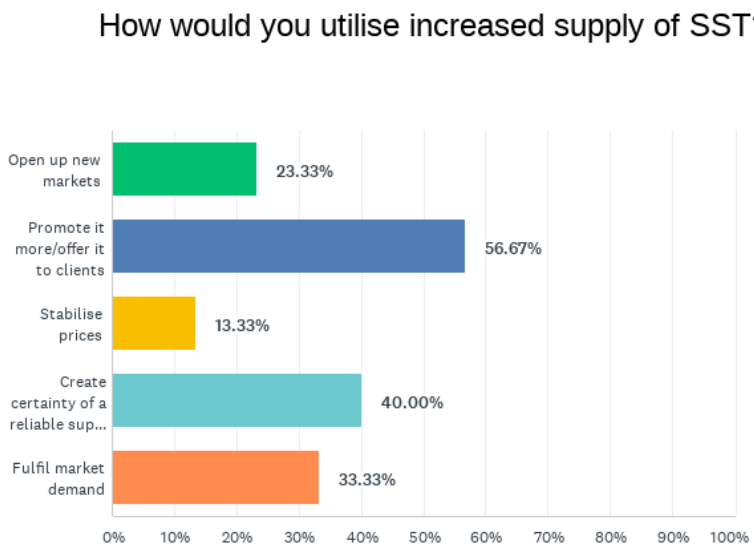


Figure 10 How would you utilise an increased supply of SST? (All Contributors)

Most contributors would utilise additional SST if supply was increased by promoting it more to clients and customers (56.67%). This can be directly linked to creating a certainty of supply (40%) which allows those involved in the SST industry to be confident that they can promote, use and offer the range of SST to customers and clients and the supply is there (Appendix 10).

47.37% full time contributors believe that it would fulfil the market demand that already exists.

These observations are consistent across contributors supplying to corporate, commercial, and residential fit-out, boats and the smaller objects and utility items.

How the opportunities are met and where investment occurs, will determine the harvest trajectory.

The Tasmanian Forestry Hub demand outlook[19] provided an aggregate demand analysis and forecast to 2050 based on population growth and the cessation of native forest harvest in Victoria, summarised in their table below (Figure 11). This is relevant to the Tasmanian Fine Timbercraft sector because it provides a quantified estimate of the relationship between population growth and reduced Victorian timber supply on Tasmanian sourced timber product. This substitution potential for Tasmanian Special Species timbers and joinery products is real. After the Victorian native forest harvest decision, American timbers such as Red Oak and White Oak imports increased by 143%[20] or around $40m on an annualised basis. These imported timbers are direct competitors to Tasmania's special timbers and carry with them the carbon cost of transport, making them potentially vulnerable to replace with Tasmanian timber and with appropriate industry support, fine timbercraft product.

Key macro determinants to timber demand overall and the potential Tasmanian fine timber and timbercraft demand include:

- Population growth.
- The externalities identified driving substitution for production foregone through cessation of native forest harvesting in other jurisdictions and import replacement (both timber and valued added product).
- Community acceptability of and preference for locally, ethically sourced and produced timber and fine timbercraft products.

3.2. Macro Demand Factors

Theses macro determinants can also be applied to timbercraft products derived from high quality Tasmanian Timbers.

Externalities

The following externalities highlighted in the introduction have potential positive impact on demand of both new product and substitution for other products, if a coherent and systemic strategic marketing and supply response is developed. The influences include:

- **Mandatory Climate Reporting, Environmental, Social & Governance (ESG) Markets, climate related disclosures** – Tasmanian Timbercraft resources as a local, Australian substitute for imported timbers utilised in fit-out and joinery in public, corporate, commercial and residential markets. This would reduce the "carbon miles" cost component of the material used. For the materials which are selectively harvested, the potential lower emissions cost, and the recovery and use of components such as root balls etc, can be factored in and as the reporting evolves

[19] Indufor, "Demand Outlook to Tasmanian Forestry Products (2022)

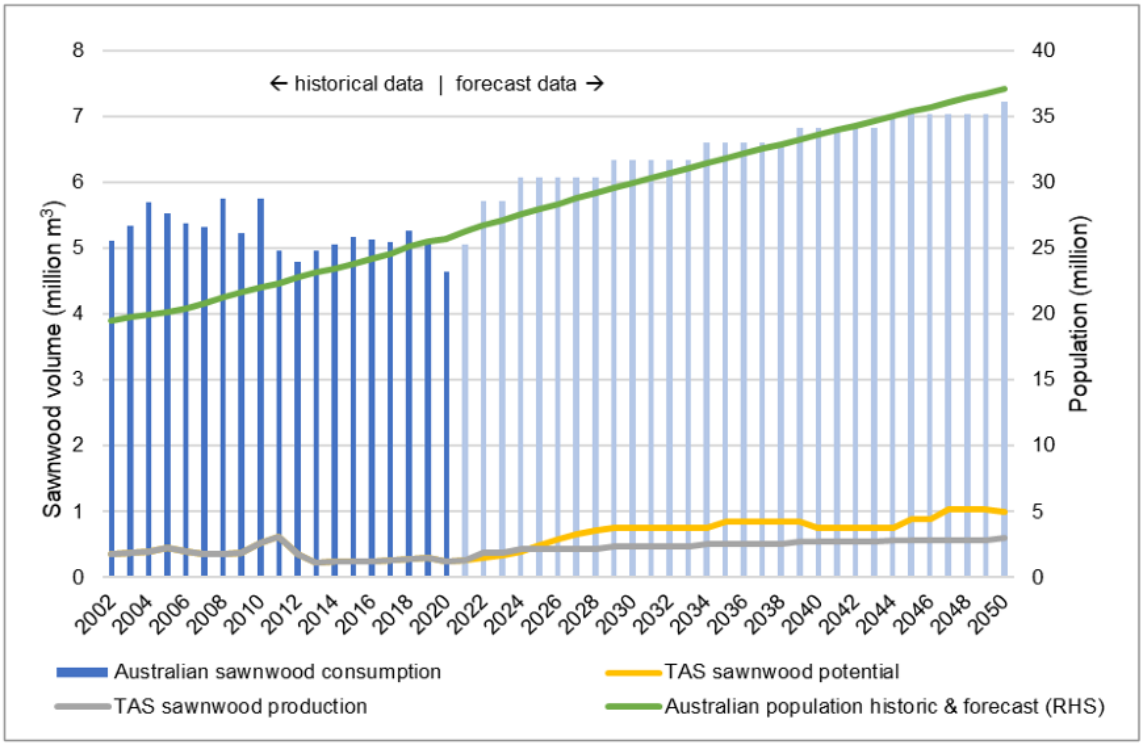
[20] Hardwood Review, Hardwood Publishing Co Inc (April 2024)

the improved biodiversity impact bundled in. This is a critical component of the ESG focus in strategy, operations and market positioning for corporate and government purchasers of major new build and refurbishment fit-out, including furniture and designed objects. The challenge is to capture the positive social and environmental characteristics of this model compared with imported timbers. Tasmanian timber and timbercraft can provide a part of the solution to entities impacted by the (Scope 1, 2 &3) compliance reporting requirement and others which are required (for example by financiers & investors) to demonstrate ESG commitment and management systems.

- **Policy Change –** Cessation of native forest logging in other Australian jurisdictions provides a further timber substitution potential, reinforced by the above.
- **Consumer dynamics** – As earlier noted hedonic purchases are subjective and value driven which add to utility in various degrees. These values manifest around exclusivity, amenity etc but can also be considered as a reason not to purchase. The environmental narrative surrounding locally sourced timber and the Tasmanian Timbercraft sector, reinforces the range of values which can be attached, without risk, to the sector and product. Realisation requires a compelling, widely understood narrative and the transparency and validation to support it.

The Indufor modelling is included to demonstrate base case providing a benchmark which identifies:

- greater than doubling of sawn timber demand by 2037, and
- a Tasmanian sawn timber supply constraint arising in 2030 creating a relatively flat supply compared to population growth.



Source: ABARES; ABS (historic population data and population projections); Indufor modelling of forecast potential

Figure 11 Tasmanian Forestry Hub Demand outlook by Indufor

The Indufor modelling, reflects the closure of the Victorian native forest harvest in addition to the macro population trend with a particular focus on utility grade timbers, arguably less attractive and subject to more competition that the high-quality timber considered within this report and as such a conservative growth potential benchmark. While providing a valid base case for overall sawn timber supply it is silent on other externalities such as ESG, the AASB reporting, the potential to substitute imported timbers and active marketing of higher quality timbers and timber products and from this, the potentially high demand and value add from Tasmania's Fine Timbercraft.

The micro dimension demand view and factors described by review contributors, together with active marketing, is the basis for addition of a demand premium over the Indufor macro trajectory.

This provides the nominal benchmark trajectory for the demand for Tasmania's Fine Timber from local and national markets. In combination these indicate a potential growth trajectory of 7% per annum up to limits set by establishing sustainable harvest levels across a portfolio of species and high value add products for specific market segments.

The Indufor model identifies a flattening of demand from 2037 because of sawn timber supply constraints, within the fine timbers sector, an upper limit would reflect the validated maximum annual harvest for each species and viable harvest.

3.3. Future Demand & Supply Matching Sector Model

The special species sector is a relatively low volume, but high material recovery/utilisation sector where certainty of access to raw materials is central to business confidence, purchase behaviour and investment. Certainty of supply is currently missing across those elements of the sector which are most dependent on the non-blackwood nominated special species. Its behaviour has been distorted through concerns around future supply certainty, its consumer behaviour is also distorted because of lack of confidence in ability to repeat purchase.

Discussion with industry representatives indicate a need to recommence supply of special species timber to reestablish certainty and confidence within the principles and practice detailed in the Special Species Management Plan (2017). It is at this point that the difference between a supply side and a demand side strategy is crystalised.

The eucalypt supply contracts model is an example of a supply side contractual relationship providing the purchaser with the certainty to support their operations and investment, the forest manager harvests an area which has an estimated volume and mix of pulp wood, utility and select grade logs which are sold into different markets, the forest manager taking the output variability risk. A demand side strategy, as proposed, differs in several ways:

- The annual harvest varies, up to a pre-determined sustainable harvest rate for each species, based on market demand.
- Purchaser/harvesters can clarify the specific log characteristics which meet their needs. The fine timbercraft sector is sensitive to material characteristics – fit for purpose is critical to end product and to high resource utilisation.

- Special Species Management Zones can be characterised by dominant product end-use.
- Zones can be incrementally harvested, subject to the parameters set by sustainable yield and viable harvest volumes.
- Multiple purchasers can access the materials subject to access and downstream use protocols.

With the selective harvesting regime and the establishment of "ground truthed" zones across resource rich areas, the volume/quality harvest is highly agile within the parameters of the minimum viable harvest volume and the maximum annual harvest, a perpetuity principle. This introduces a dynamic supply management system, with a lead time of 1-3 years between harvest and usable wood product. This requires a new form of industry model mirroring a dynamic systems framing such as utilised within this analysis.

Within this model, the species which deliver scale are fine timber eucalypt and blackwood, with the other nominated special species indicating growth potential relative to their sustainable harvest levels.

Discussion with sector contributors led to the recommendation of a selective harvest of 200m^3 for each of the terrestrially harvested White & Blackheart Sassafras, Celery Top Pine, and Myrtle for 2 years in parallel with a policy and activation model to establish selective extraction on a long-term sustainable basis. Depending on the harvest method utilised, for example inclusion of some form of helicopter supported harvest, the minimum volume of Huon Pine may exceed this nominal 200m^3 benchmark. This volume and the process was identified as a nominal volume to:

- Signal a return to harvesting,
- Generate volumes which provide viable milling across the mix of milling scales and specialities,
- Provide a meaningful commencement volume around which to gauge variation in respect of log type and volumes.

These volumes are generally less than 50% of the 2005/07 volumes which were the basis of the 2009 Woodcraft Report[21] which identified similar levels of difficulty in accessing timber and in meeting demand as identified by current contributors.

Images courtesy of Axiom Lighting, Denman Marine, Callum Hughes

[21] A Review of the Woodcraft Sector for Forestry Tasmania & the Woodcraft guild (2009) Creating Preferred Futures – Farley M, Farley H, Bishop M

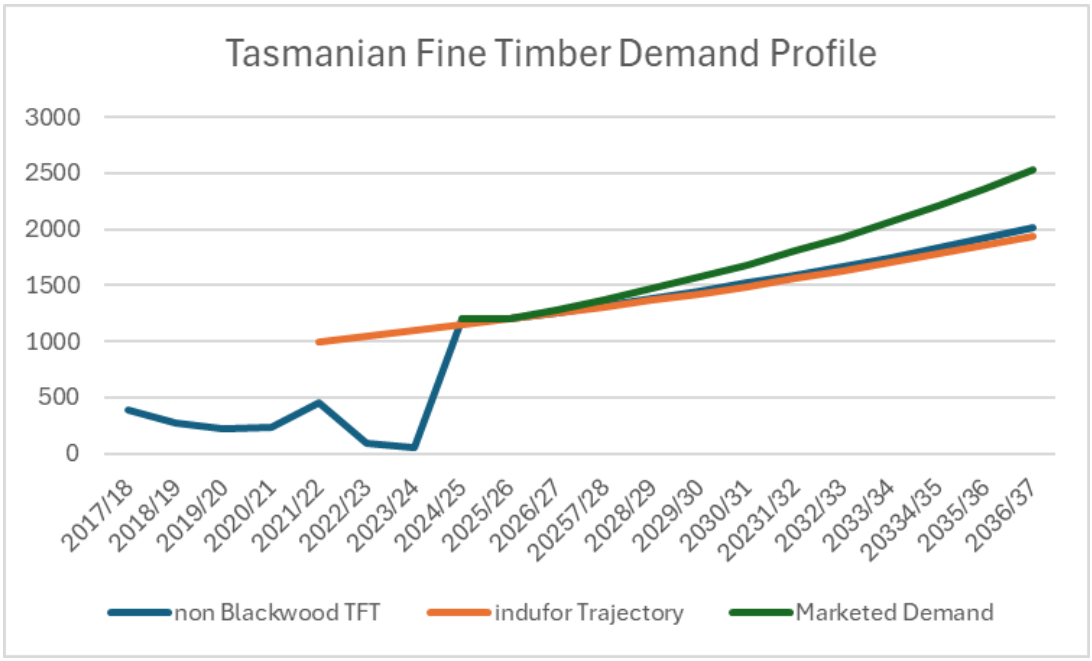


Figure 12 Tasmanian Fine Timber Demand Profile

As noted, the closure of the Victorian source led to a rapid and measurable increase in import of rough sawn timber to substitute decline in Australian timber. Fig 12, above demonstrates a market demand for Tasmanian fine timbers which reflects the Indufor trajectory and a further 2.5% annual growth premised on:

- A marketing stance, in balance with reliable future supply of timber volumes and quality which is fit for purpose,
- The achievement of the increased demand identified by survey contributors through new products and markets,
- AASB focus on the management of scope 1,2 & 3 emissions and evolving biodiversity factors across enterprises and supply chains providing an advantage for local sourced timber and timber products/value add,
- The validation of the sustainability and benefits of the light touch selective harvest regime,
- Accreditation standards and community acceptability.

The volumes demonstrated in the graph reflect the currently nominated non-Blackwood special species timbers. This base volume increases with the inclusion of Blackwood and fine timber Eucalypt.

There is a documented capacity to supply the fine timbers to support this demand. The following table, drawn from the Tasmanian Special Species Management Plan (2017), identifies the potential, maximum annual harvest level from the mix of tenures available for harvest.

Species	Maximum annual harvest quantity (m3/annum	
	Category 4/utility	Outspec
Blackwood	8,525	14,580
Celery top Pine	850	1,100
Sassafras	3,510	2,470
Myrtle	9.930	17.430

Figure 13 Maximum Annual Harvest Quantities by Species SSMP (2017)

Recent log supply flows are not correlated with utilisation in the non-blackwood special species as demand has been met from private stocks accumulated by events and over many years. The resource assessments[22] do not provide a picture of available stocks and sustainable harvest levels and how they complement each other. As noted, the bespoke furniture, designed objects and production utility segments have maintained operations through existing dried and lower quality log stockpiles, an unsustainable model. Smaller specialist mills and boat builders are the first round of businesses indicating extreme supply side pressures in the absence of stocks, this has led to mill down time, transition to part-time operation and potential closure.

None of the non- Blackwood species have been harvested at levels approaching these documented maximum sustainable yield benchmarks. From a demand sensitive perspective, Myrtle is currently less fashionable (contributors' indications of a rebound exist), however the ability to market has been constrained by uncertainty of supply.

Peterson identified a potential harvestable fire killed or dead down Huon Pine sawlog resource of 22,000m^3. This material adds to the fire risk for these forests by increasing fuel loads.

As noted above a benefit of selective harvesting is tree selection, the essential first step aimed at optimising the volume/quality mix. Quality is a function of end use, for the art focused elements of the value chain, this includes logs which will not meet traditional square edged timber sawlog specifications, but do meet market demand, the role of selection and light touch selective harvesting. This approach provides a potential offset to the likely increase in cost and therefore pricing of selectively harvested timber through increased fit for purpose recovery. The concept of harvesting larger volumes to recover a small sawlog proportion is at odds with this model and its principles.

Fit for purpose is the key adjunct to volumes, aggregate volume is not a good indicator that key, strategic needs are met. Furniture makers seek consistent visual appearance, finding variability negatively impacts saleability and increases production costs, boat builders require boat grade Huon Pine, while some bespoke furniture makers value defects. Similarly, Blackheart Sassafras is more coveted, but the existence of the characteristic is only certain upon milling (or by coring as part of a preharvest or active inoculation program).

[22] Special Timbers Resource Assessment on Permanent Timber Production Zone Land (2015)

In effect the future of the Tasmanian Fine Timberwork sector, utilising the full spectrum of knowledge, skills & timbers requires a baseline certainty of supply in combination with a selective harvesting/recovery regime which can dynamically shape markets and respond to demand with a flow of resource which reflects long term sustainable harvest levels.

Conclusions

There are both macro and micro dimension determinants which indicate a growth trajectory for sawn timbers and fine timbercraft products.

The SSMP has identified significant volumes of SST that are potentially available to the sector with sustainable annual supply limits set. If these timbers are harvested using lower impact methods endorsed by the SSMP, they are certainly not at any risk of depletion. Accordingly, perceptions of species shortages in the public and industry domain are directly attributable to inactive management, deliberate market distortions, lack of appropriate policy and failure of implementation of the SSMP.

Selective harvesting provides a low risk, incremental harvest model at, compared with commodity harvesting, small scale. Selective harvesting can provide a harvesting agility and flexibility which can minimise the speculative behaviours which result in a mix of hoarding and price escalation.

Recommendations

The transition to active and dynamic management of the resource to ensure minimum supply while a sustainable selective harvest regime is designed requires:

1. *Commencement of a selective harvesting/regeneration program of a minimum of 200m^3 for each of the terrestrially harvested White & Blackheart Sassafras, Celery Top Pine, and Myrtle for 2 years in parallel with a policy and activation model to establish selective extraction on a long-term sustainable basis.*
2. *As a component of the immediate, selective harvest establishment phase, a commercially viable quantity of dead standing/on ground Huon Pine be recovered, this recovery to include trialling of both terrestrial and helicopter supported techniques to enable comprehensive evaluation to occur.*
3. *The profile of harvested logs should reflect the characteristics identified by contributors to this report and sector participation in initiation activities to support the initial harvest.*

3.4. Intermediate timber material demand

The following provides an overall representation of the timber material characteristics sought. This varies between application. Boat builders indicate a need for long lengths, clear straight grain, free of defects and older growth timbers, while others value highly featured timber. Except for boat builders and furniture makers "colour and feature" are dominant features of demand. Consistency in colour is a challenge to some furniture producers, identifying marked colour variation within packs creating unwanted variation in the product and its uptake. Figure 14 below highlights the importance of tree selection and variation in demand across the sector.

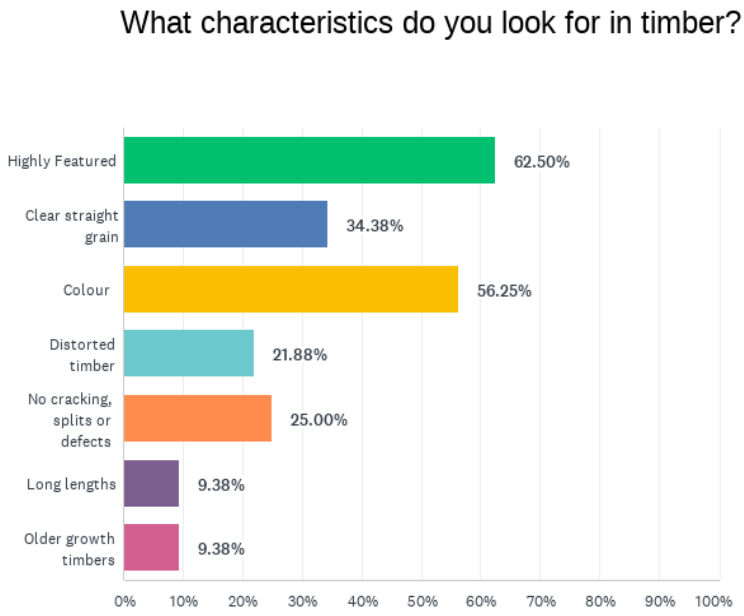


Figure 14 What characteristics do you look for in timber? (All Contributors)

All groups identify that the quality of timber has declined over time, however this is arguably mitigated by careful selection of timber, with most refusing to buy timber sight unseen unless there is an established relationship with the supplier resulting in most accessing timber which they define as excellent to good quality (83%).

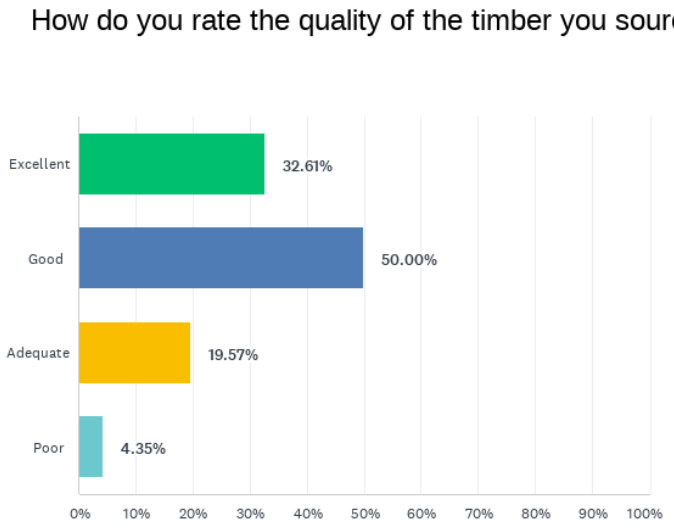


Figure 15 How do you rate the quality of the timber you source? (All Contributors)

The considered and discerning purchase decision behaviour spans the whole value chain, reinforced, along with demand sensitivities, by the comments and perceptions below.

Quality & fit for purpose

These comments highlight the value of a close relationship and clear understanding of the need of those operating in the downstream elements of the value chain. While this exists within specific networks and commercial relationships, much of the sector remains fragmented and misses the opportunities which will arise from greater cohesion.

For this relationship to be successful, it is essential that the requirements/specifications of downstream users are understood throughout every stage of the supply chain.

"Last year's seconds is this year's A grade. Influenced by size of logs and the availability."

"(I) Don't buy veneer without inspecting it first as I've been caught before for poor quality. (local source) veneer is substandard compared to the mainland. Their operators are cutting it incorrectly tearing up the grain, they don't care. Highly figured timbers are a bit more difficult to cut, they just bang it through."

"There has been drop in quality over the past few years. Clean straight grain 3m x 150mm. Shape of the slab, doesn't necessarily need to be straight. We love curved slabs."

"Plantation timber is causing problems with cracking and splitting, the grain is very short and you can break it across the grain. It was never supposed to be used for furniture, just woodchips."

"Less high-quality timber around, and with defects. We don't have the quality or quantity we used to. I like mainly appearance, colour, grain patterns, contrast, something that stands out. Reasonably dry, not too many defects like splits."

"We are looked after generally (by provider). The logs quality have diminished over time though. Forestry have stuffed up by taking out younger trees when they didn't have to to get to eucalypt."

Form

"Still get enough good stuff to do the jobs but getting so much harder in the quantity and sizes."

"One of the advantages I have in my product line is that I can utilise the scrap from one product for another product. I can find enough usable material for a product I am making. Qualities depend upon the end use. In most cases I want timber that looks good - back sawn timber, colour and grain variation."

"Depends upon how much you want to spend. Older growth has more features, small fast-growing logs are a waste of time."

The current model, based on "arisings," overlooks this critical aspect of the relationship, which begins with forest management and harvesting. A thorough understanding of downstream needs and specifications must take priority when selecting and preparing trees for harvest, achieving this requires a much closer collaboration with forest managers and harvesting contractors, along with targeted education to ensure alignment with downstream expectations.

While this exists within specific networks and commercial relationships, much of the sector remains fragmented and misses the opportunities which will arise from greater cohesion.

The range of log purchase and intermediate products is an indicator of the utilisation of whole log and from this the need to ensure strong value chain connections to ensure optimised utilisation and return from the tree and its milling.

Which species and materials

There is a current and future perspective to this, providing a picture of likely future demand.

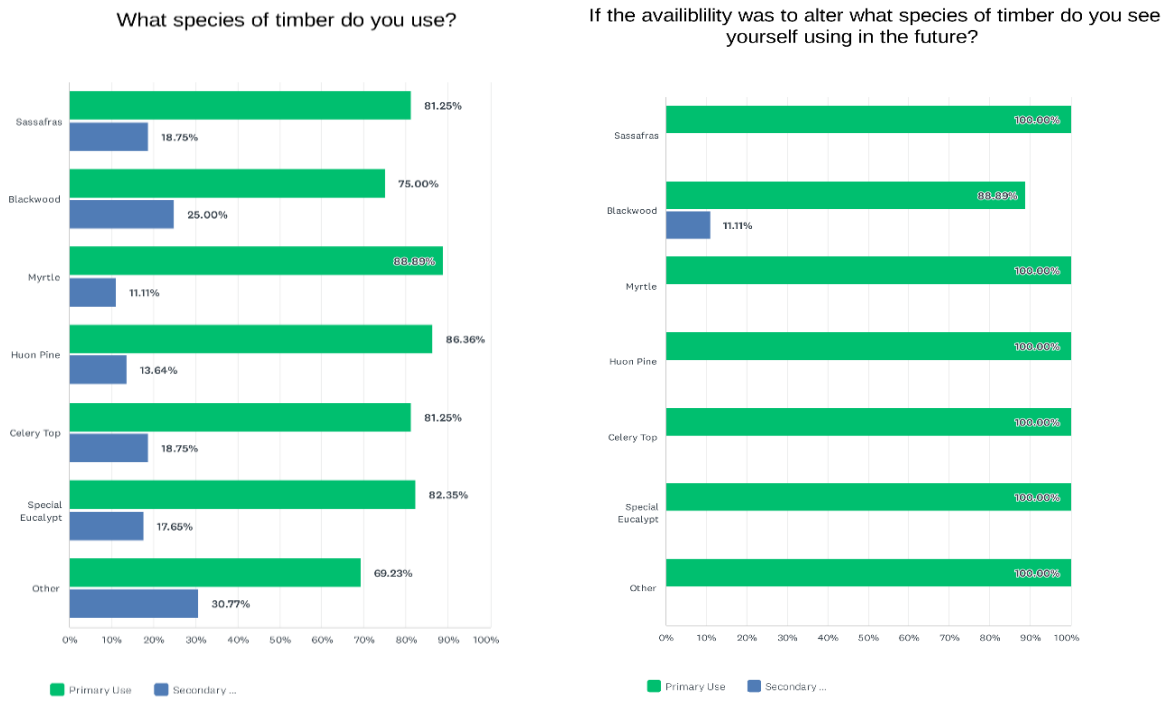


Figure 16 What species of timber do you use? What do you see yourself using in the future? (All Contributors)

Images courtesy of Kyries Timber, Holly Farley, Britton Timbers

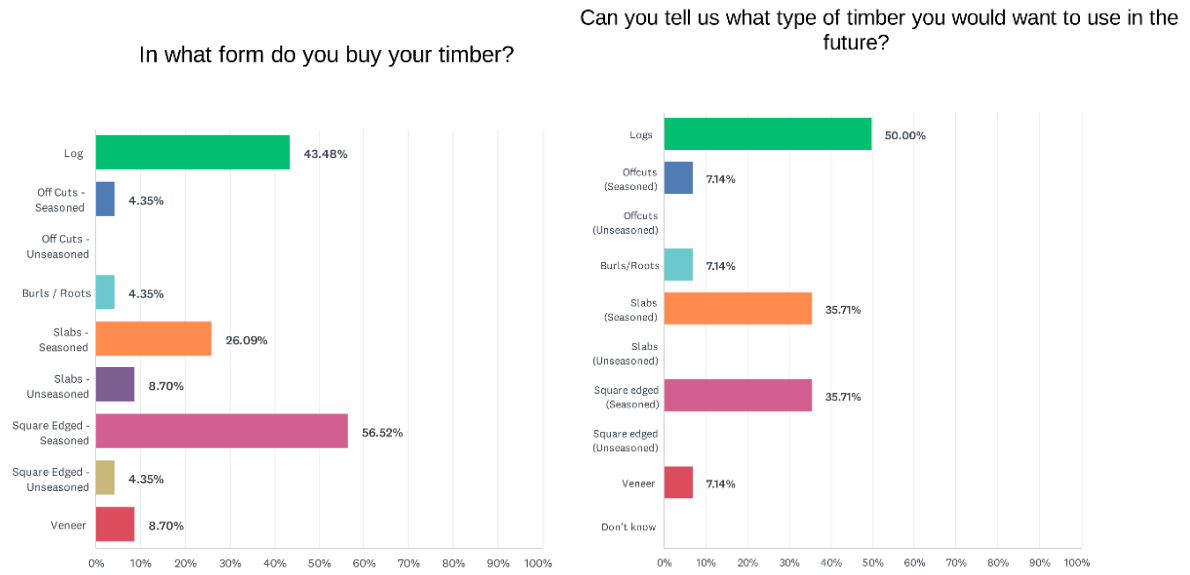


Figure 17 What form do you buy your timber? What form will you want to buy in the future? (All Contributors)

While a large proportion of the sector purchases square edged sections for dressing and utilisation (57%), there are some who prefer to purchase in less processed form (44%).

"Buy it in slab form, so you can see what you are getting out of it. Huon Pine logs can hide faults. Easy to lay planks on top of each other, better fit. Use the off cuts in the fit out. Better yield."

"Like to buy as logs but that's a future investment and requires money."

"I get IST to mill the logs. I use a lot of squares as a woodturner, no one cuts squares if you don't ask for it. You have to tender for reasonable logs for that purpose."

"Because I have a sawmill, so it's cheaper, better recovery. I can get the shapes that I want as opposed to a sawmill."

"Buy all the off cuts because I can work around it all. You've got to look at the timber for best use."

3.5. Access factors

Another consistency among all the groups is the importance of a good relationship with the supplier. The benefits of this is the supplier knows what they are looking for and will get in touch if they have what they want available, some of the mills will cut to their specific timber needs and general goodwill on behalf of both parties. (Appendix 2).

Sourcing challenges identified by survey contributors include:

"Haven't been buying it from shops. Hunting around and getting it from other people's stockpiles. I used to get a craftwood permit years ago but the taps have been turned off and I can't get one. If I had to buy from a shop, I wouldn't be able to afford it."

"I now have to source on Facebook marketplace and the black market. The government have forced it underground - they have blown it and now there are no rules to it."

"Because they are local to me and the prices are good."

"It's where it is available, and they will cut something to length and size. Lately. it is lower quality and inconsistent."

"Nearly all the timber I need is from my own stocks. I very rarely go to the mills."

"I stockpile timber, I only buy if someone has something interesting for me in terms of shape. It's getting expensive these days so I made sure I have enough to last me the end of my days."

"Buy mainly from trees that have fallen and take them to the mill to get them ready for veneer."

"They are involved with the Chain of Custody and they are the only ones we can get the logs from."

"The only place you can get the logs unless they are stolen."

"You can't get the timber. I used to be able to go to the mill and get three sticks of timber as you need it. Get what you want. Keeps costs low and client paid for it. Jobs these days you can't be sure to get the timber the client wants."

"Can't get enough timber; log size isn't big enough; have to use smaller and smaller sizes."

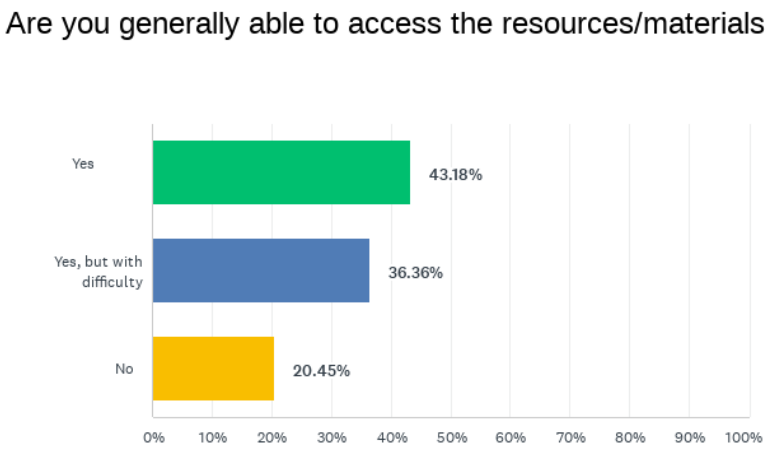


Figure18 Are you generally able to access the resources you need? (All Contributors)

Most contributors can access the resources they need (43%), or they can with a little difficulty (36%), compared to those who can't (20%). Part time and the woodworking groups find it easiest. However, these are also the groups that are generally not working full time, are hobbyists and the most adaptable when it come to the type of timber utilised. Facing the biggest problem sourcing timber is the more specialised users – Furniture/Joinery, 23% can't source what they want and of the Boatbuilders, 50% can't source timber (Appendix 3).

These characteristics lead to a wide indication of ability to grow demand if more resource is available. Those with a stockpile are able to source much more easily with 52% saying yes, compared to 22% yes from those without a stockpile.

Timber characteristic is a key determinant, reinforcing the considered and discerning nature of the whole value chain. It is recognised by all groups that quality of timber has been dropping over time, however this is mitigated by careful selection of timber with most refusing to buy timber sight unseen unless there is an established relationship with the supplier resulting in most finding their timber to be good quality (50%).

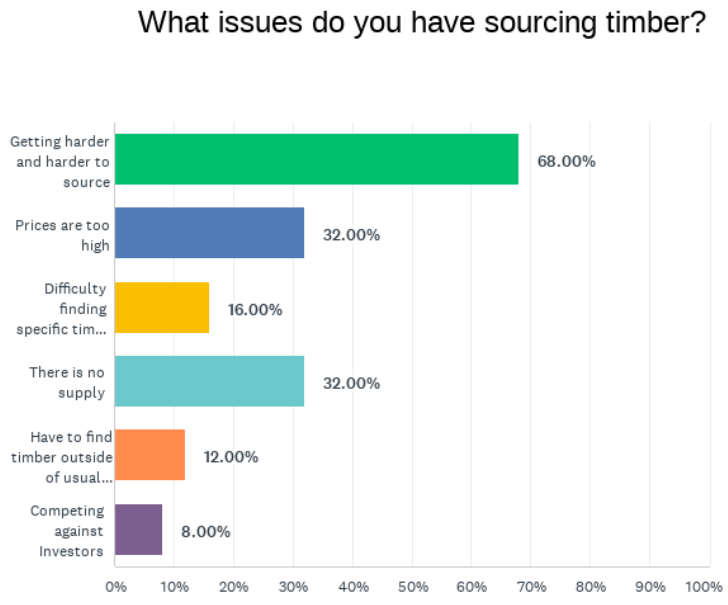


Figure 19 What issues do you have sourcing timber? (All Contributors)

3.6. Pricing Factors

Pricing was identified as an issue with 32% of contributors identifying as being increasingly priced out of the market. Some of this arises from resentment in having to compete with businesses all along the value chain and outside investors for logs. However, the price factor is outweighed by the challenges in sourcing timber with 68% of contributors indicating it is getting harder and harder to find. There is a perception that there is no supply of timber (32%), especially when looking for a specific species such as Blackheart Sassafras and Huon Pine (Appendix 4).

"Don't know what is happening with the industry day to day. Sassafras prices have gone up 10 fold if not more. It results in us trying to charge more money if we can for our products but the market will only pay so much. We have to tender against people who are using it for investment which goes directly against people who using it for their core business. The timber becomes not available for use. The tender system is inflating the market price because of the rarity of it."

"Just getting harder and harder. The lack of timber is the death nell of the business but lucky I'm going to retire soon but if I was younger and starting out, I wouldn't know where to start - no timber for them to use."

"Been struggling to get logs from Forestry for 10 years. Would love to get some Blackwood but it all goes to one big mill who buys it all up. I just can't get hold of any SST so we cut whatever we can get."

"Searching for specific timber, it can be difficult to get but in general I can get what I need. I design to what's available."

"The issue that we have is that Forestry are not doing informed harvesting and they did not develop an aggregated demand for the industry, Their policy on supply of SST is just arising for Eucalypt harvesting. An indiscriminate cut oblivious to demand. Celery Top is in short supply, and they have done nothing to address that 99% reduction of millable log in 10 year period."

"Travel is hard when you have to go and look at the timber. And you can't just go look at stuff. Limited supply and where you can go."

"Because of the availability, it's just not available. Used to be able to ring any mill and get what you needed, they have now all closed up. Basically, to get logs you have to go through IST who are at the whim of Forestry."

"No legitimate supply pushes people to stockpile or find it elsewhere, the black market is notorious on the Northwest and west coast."

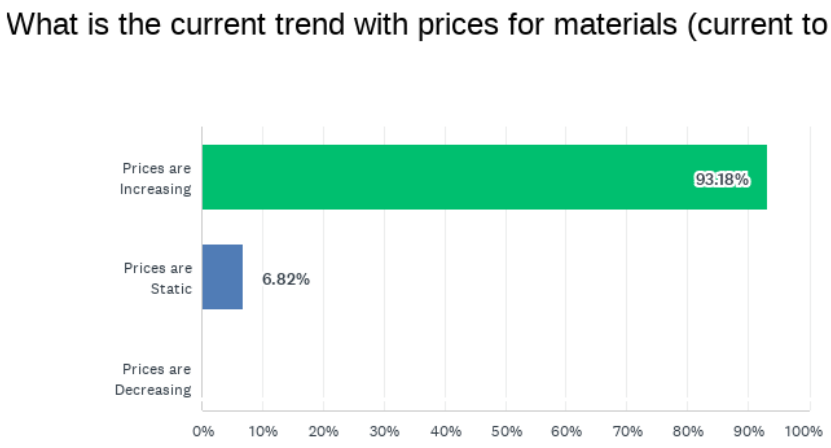


Figure 20 What is the current trend with prices for materials? (All Contributors)

The increase in the price of timber is a huge concern for contributors.

"20 years ago - Celery Top Pine/m3 $2,000 now $12,000 m3"

"Gone up dramatically. Tiger Myrtle $60/super foot - coming to weight rather than the quality of the timber."

28% of contributors indicate having to raise their prices in an already highly competitive market and passing the cost onto the customer (26%). This is more of an issue for the woodworkers operating in highly discretionary markets than larger organisations which operate in commercial markets where these factors are expected but still present. Timber suppliers identifying that during the tender process, joiners identifying lower cost timber options to reduce their tender price and towards the end of projects, negotiated substitution of lower cost materials as a means of reducing project cost over-runs.

These larger firms do not have the stocks to lessen the impact of price such as the smaller woodcraft businesses which utilise stockpile so that they are dealing with a known cost and can keep pricing steady.

Images courtesy of Denman Marine, Axiom Lighting, Brad Moss, Bill Burford

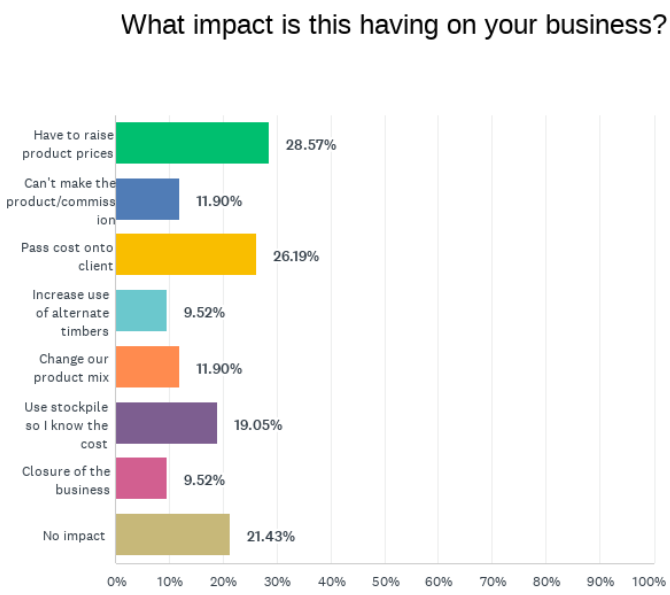


Figure 21 What impact is price having on your business? (All Contributors)

Figure 21 above indicates that most businesses indicate the capacity to pass prices on, or see no negative client impact.

"I've been increasing my range of mainland timbers. Camphor laurel upcoming range. Mainland timber veneers are fantastic quality compared to what our mills turned out and cheaper."

"Some stuff you don't make anymore as there is too much timber in it. Slowly pricing some timbers and products out of the market."

"It's having a happy impact on me because my stockpile has increased in value. I feel we have to look after younger generation coming through."

"Money is tight and I still have had to put prices up which reduces sales, always kept one foot in wholesale and direct sales. What you need to remember is that by buying logs and getting them milled, the timber has to stay in the mill for 6months to 2 years to dry out depending upon the timber. Each log is a long term investment and you don't know how it is going to turn out."

"I pass that cost onto the client. It has an impact but it doesn't stop my client buying it? No."

"We pass on the costs but you're not sure that the product is worth it but then it is because the costs have gone up for materials and that's what you pay for it. It's easier with your stockpile because you know what you paid for it and you're not the mercy of cost fluctuations."

"I can't justify buying it from the big mills. Even out the prices so that each product is the same price regardless of timber anyway."

"It's having an impact. It means that we have to keep our labour costs down or static otherwise the cost becomes prohibitive for clients. Our work is incredibly labour intensive."

"Limited access to SST can take a lot of the creativity out of it. If we were not able to source SST we would be back to Pinus radiata and Tas Oak and it really takes a lot of the creative nature of design and production out of it. The unique character of the timber inspires the creativity."

"No. If the people want it they will pay for it. Impacts when you want to be a continuous producer of timber products. Overheads are massive."

"Not on mine because I have the timber and stock but it has an impact on the market overall. The general consumer doesn't want to pay the higher prices. I've increased my efficiency rather than put up the prices due to the timber."

"Big guys are pricing themselves out of the smaller market and people coming on an probably going to source their own timber and supplies, probably harvesting their own from smaller lots of their own land."

"Very uncertain and you need a stockpile to retain a steady flow out of the workshop. The quality does vary between slow and fast-growing timber. Mainland furniture firms are buying at ridiculous prices."

These points highlight the challenge of price sensitivity. The cost of timber includes:

- Purchase price from the miller (seasoned or not),
- The time it takes to make the purchases – can it be confidently done remotely, or does it require evaluation prior to the purchase – how far is it necessary to travel, delivery,
- Do the material sizes efficiently translate into the production application, is joining required or does machining create significant waste,
- Does the market accept "joined" material
- Does the material available lead to increased "warranty risk",
- Can off-cuts and residues be viably sold.

The sector identified factors all influence the material price and cost profile they face in production.

Conclusion

Most contributors indicate either the ability to pass price increases on, or a lack of client sensitivity to timber input prices, noting that the timber input price for most use cases is 10% or less.

The price of timber input is not just the price of timber purchased, it includes the acquisition costs and the cost of preparing it for use, an increasingly prevalent factor in the current supply model.

The above points and contributor commentary are largely addressed by the demand driven, selective harvest profile outlined. The model also works to negates the need to attempt to define an explicit volume/timber form for each species as underpins a supply side model, replacing it with a consistent, maximum sustainable yield volume which can be accessed based on demand patterns.

In this model, while the standard processed timber product will remain, the potential to develop a more productive, integrated tree selection, processing to specific needs production ready state is central to the approach While this variation may not be suited to large scale mills, it is a key advantage of smaller scale, specialist mills and as is demonstrated by the number of makers who also mill. This has the

potential to mitigate the cost of handling material which is not aligned to the specific production process, reducing waste and preparation cost, offsetting the increased harvest cost.

For those not finding it necessary or valuable to invest in this approach, standard, traditional intermediate products will remain available.

3.7. Shaping Demand

Survey contributors identify potential to meet and shape demand with new product and markets through utilisation of increased supply. Demand shaping requires a deep understanding of the product/market fit for Tasmanian fine timbers and timbercraft.

The sector reflects a range of sales models:

- Direct to end user – retail product from warehouse, workshop or market
- To intermediary as an input into production – joinery, production furniture
- To intermediary for on-sell – wholesale product distribution channel, gallery
- Commission – a bespoke, design made project to unique specification and pricing

Contributors indicate a range of models and multiple channel approaches.

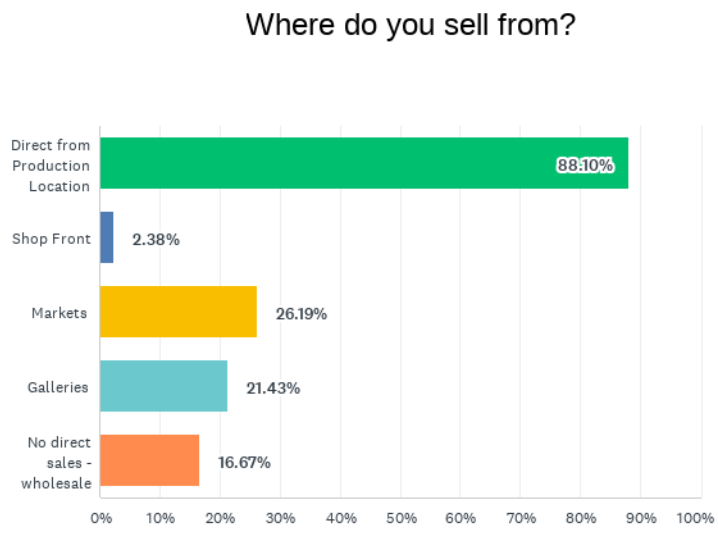


Figure 22 Where do you sell from? (All Contributors)

While the majority sell from their production location (88%), this is often combined with a gallery or market outlet (especially so with the woodworking groups), with the exception of Boatbuilders and Furniture/Joinery who sell almost exclusively from their location (Appendix 11).

The gallery focus and wholesale is an example of the intermediary sales discussion as follows, with the production location and market categories reflecting direct sales.

Promotion is disjointed. Most rely on word of mouth and/or social media (60% each).

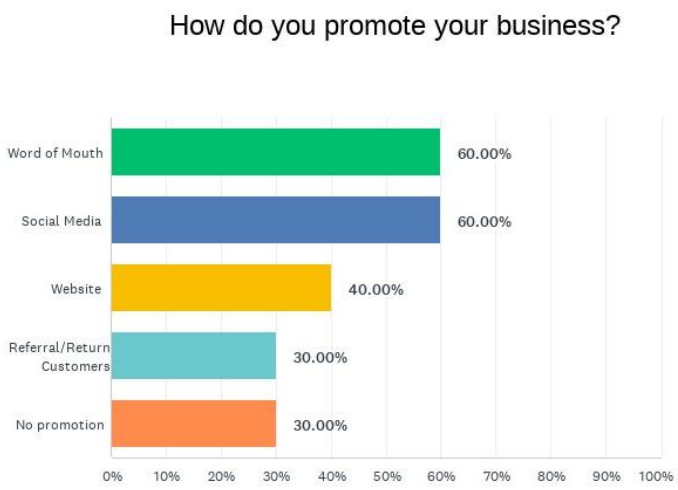


Figure 23 How do you promote your business? (All Contributors)

The use of alternate methods of promotion is identified below.

The profile can reflect the high end reputation which some makers enjoy within specific niche markets, people only selling through specific locations such as markets or retail outlets.

The key is that the sector lacks consistent positioning or visibility apart from its link to people's key interests, whether boats, music or fine furniture etc.

Direct sales

Direct sales smaller businesses have experienced volatility over the past 5 years. During COVID woodworker residential high-end fit-out increased as did enthusiast demand, these subsequently levelled out and in the case of timbercraft enthusiasts, in line with cost of living pressures, has declined. Market stall and direct workshop sales businesses suffered the COVID slow down but indicate a rebound. The number of outlets from Salamanca Market for example, has remained at a constant 20 sites over the past 15 years.

Direct sales is a strategy to maintain margin power, requiring some mix of location and market presence, reputation and positioning.

Those milling and primary processing, sell directly to commercial customers and through distribution channels. Furniture/joinery (86%) and boat building (100%) primarily work out of their production location. Some also supply markets and galleries with smaller woodwork items as part of their overall product mix.

Both wood working groups sell predominately from their production location through commissions that include presentation items, packaging, and specialised items. Wood turners, wood art, musical Instrument products are sold mainly through galleries (50%), while giftware, jewellery & kitchenware focus mainly on "pop up" stalls (64%) (e.g. Salamanca Market and Deloraine Craft Fair) (Appendix 11).

Intermediate sales

This is the critical pivot point at which the demand for timber input into timbercraft translates back into log demand and the operational rationale for selective harvesting.

From consultation with experienced millers, the potential positive impact of selective harvesting is profound. In the current supply side policy of "take what you get" a nominal & potentially likely, annual demand for 10m^3 of Huon Pine boat board would require around 90 to100m^3 of Huon Pine recovered material, based on edge-to-edge milling. From this harvest there is another 90m3 of material to be sold to other craftspeople. Selective harvesting is based on individual stem or small group selection. This enables 'fit for purpose" tree selection, a practice which can deliver the 10m^3 of boat boards from 25 to 30m^3 of log material when milled to deliver relatively standard boards. If larger sections are required, the recovery rate declines.

The prices of such selected materials increases but is offset by the productivity gains from having fit for purpose material available.

This productivity offset has the potential to address challenges for some producers, for example production furniture makers. While all producers require a price set to market and individual client perceptions of value, in some circumstances businesses along the value chain are "price takers" or suffer rejection based on price. Having a good product is no guarantee of sales. Having access to material input does not necessarily mean it's viable to buy.

The variation in log supply volumes flow and quality also results in variation in stock levels. Over supply, followed by under supply creates challenges in marketing when subsequent interest cannot be fulfilled, this is a factor in fit-out and areas where relatively large volumes are required. In such instances the customer acquisition cost and loss of reputation outweigh the sales margin.

Production furniture is sold through a mix of local suppliers and national chains. National chains tend to operate on rigid retail margins – this sets the wholesale price as a mandated condition of supply. This model negatively impacts both local furniture suppliers and the sale of timber to national and international furniture makers, demonstrated by a current reduction is sales of lower quality timber to Chinese furniture manufacturers. Businesses tend to mix markets to meet such challenges, for example produce both production and custom furniture. Production joineries, which supply into the corporate residential new build market, are faced with challenges when the prime contractor has a policy of providing client options at the same price point/margin, regardless of the timber input cost.

Again, the influence of ESG values and AASB reporting is indicating some reflection by national retail brands on how they respond to these reporting challenges and parallel direct questioning from potential customers.

Similar dimensions of market power and influence apply in the relationship between makers and gallery and other outlets. The acceptance, or not, of such conditions relates to the margin of safety around the business break-even level of sales in the context of the cost of holding stock.

Commercial and high-end residential fit-out is subject to a range of factors in achieving a smooth flow of sales

- The initial hurdle in the process is timber specification by the architect/designer (although some clients specify use of local timbers) – this is impacted by awareness, its relative attractiveness to alternatives based on fit-out ease/cost and perceptions of availability,
- Builders and sub-contractor quoting and offering up options with lower cost/easier availability, and
- Cost over-run earlier in the project leading to "savings" at the fit-out stage. Although with some projects, the fit-out has a long timeframe so the decision is committed relatively early on.

Small scale, specialist millers sit in this intermediary model, the second place in the value chain. Margins tend to increase with progression along the value chain and to less structured and formal business operations. Reduction in supply volumes for the traditionally low volume species and the role of IST tender system for small volume unit sales as the primary access process has:

- Provided an open & transparent market,
- Created a price point which matches future value and margins associated with bespoke items and "investment", creating a pricing structure which small scale millers indicate inability to match to achieve a miller's margin,
- Provided a pricing signal which has been used to generate "stumpage" royalties.

While this may be viewed as the market at work, it also has flow-on impacts across the sector:

- Reducing the number of smaller scale and specialist mills, disrupting their markets/opportunities,
- Increasing the number of makers who also mill,
- Arguably reduces the productivity of the value chain overall by allocating capital and people to lower value add activity,
- Losing accessibility to experienced and specialist milling skill and recovery/quality expertise.

Makers supplying through galleries are similarly subject to external factors, however they also provide an outlet for small scale operators and start-ups, while being themselves vulnerable to external factors.

"We have 30-40 different craftspeople who supply the shop"

"Galleries are very uncertain since COVID, no one is game to order in slow times and don't hold stock."

These factors provide an indication of how the sector actually operates; what businesses need to deal with on day-to-day basis. Overlaying a materials supply challenge on this has added to stress, lack of certainty, confidence to operate and desire and capacity to invest.

This is the key to dynamic product/market fit in response to values, perceptions, challenges and competition in the markets for high-quality Tasmanian Timbercraft in an open market.

The engagement, actions and transactions along the value chain from considering a log, through to purchasing an object, to observing the lines of a restored wooden boat, is based on consideration and

discernment, founded on a tradition of sustainably combining unique timbers to specific applications using a mix of creativity, design, technologies and hand.

This bundle of characteristics provides a strong cultural and contemporary narrative, which, at times may be overweighed by economics, arguably provides a durable positioning and competitive advantage. It has a range of key elements.

- Central to this is resilience and sustainability from environmental, cultural and community perspectives from local through to global dimensions. Purchases based on environmental and social grounds has evolved from a discretionary "values based" decision to one driven by impactful mandatory compliance reporting. The AASB corporate reporting framework, with its initial focus on climate reporting, requires corporations, such as those in large scale commercial and residential construction and refurbishment, to report, it is mandatory to include their supply chain and flow-on impacts. This brings into focus the "value" of local timber supplies in carbon miles relative to imports and the advantages of the selective harvesting. As the scope of reporting expands to include social impact the sector delivers further advantage. These are a commercial evolution of triple bottom line and United Nations Sustainable Development Goals (UNSDG) and Environmental, Social & Governance (ESG) embedding them in company strategy and procurement practice and further reinforced by commercial banking inclusion in their decision criteria.
- The carbon sequestration dimension is advanced through the way the sector can operate. The selective harvest approach minimises the harvest-based carbon and bio-diversity deficit through its selective harvesting approach and minimal ground disturbance. The recovery of much more of the timber and its transformation into durable, long lasting products such as boats and heritage building may go through several refurbishment phases over their lifecycle.
- The culture and tradition of handmaking and design using a natural resource which is fit for purpose and creates a sense of wellbeing and provides an experience for the maker and user is an intangible bridge to the tangible benefit and value, supporting local communities.
- The cessation of native forest logging in Victoria has the wider adverse consequence of directly and immediately increasing the importation of substitute timber from, for example North America.
- Globally the focus on lost trades (at times in conjunction with contemporary technical capabilities) is a focus for training, experiential tourism and adding the story behind the purchase and is a major focus of government heritage strategies and programs.

Individually, these factors are present in much of the sector's marketing, however they are not used in a cohesive, structured way to provide a consistent positioning or, as in the case for the fit-out and production furniture sectors, as a partial solution commercial challenges.

A sector advantage is that it demonstrates high positive sentiment, based around:

- Tradition
- Specialist craftwork that is valued for its skill
- The rarity of the timber

- The beauty of the timber.

"Logging and the Tasmanian Government" are generally negatively viewed in this digital conversation[23].

These four 'tent poles' provide a great deal of comfort and nostalgia to potential purchasers, who have an abundance of goodwill toward the products as identified from exhaustive social media sentiment searches.

The potential of marketing is demonstrated by "Hydrowood" and its establishment of a position in the market. As with other individual firms and collective efforts such as the Timber Promotions Board, digital marketing, complemented by physical presence and factors such as design competition and other message interest stimulants and purchase motivators is central.

The positioning of the larger businesses dominates the sectors marketing; however analysis of the digital marketplace sees little active presence. It is important to the awareness of the sector and its wide scope of offers is more visible and engaging.

The 21st century has seen a decline in the Tasmanian presence in high end timber furniture design and exhibition. This along with interiors and associated designed objects in combination with wooden boats can contribute to a stream of awareness of the combined value of sustainability, unique timbers, design and timbercraft.

Image courtesy of Toby Muir Wilson

[23] An analysis of social media traffic performed by "Polipedia" as a component of this review

4. Species Distribution and Supply Capability

Figure 24 Distribution & Harvest System Fit

This value chain element has multiple dimensions – from where, by what method, for what purpose/value and under what authority and practice regime to achieve the interdependent, environmental, economic, and social contribution.

The Special Species Management Plan (2017) includes tenure specific resource assessment of species across the landscape to which the SSMP applies. These assessments utilised best available aerial photo interpretation of forest class (Pi Type), inventory and LIDAR based imputation models.[24] These models have been complemented with further assessment modelling.

The brief for this project requires assessment of accessible special species resources across all land tenures, a different scope to the SSMP assessment. As a result, the following analysis is not an equivalent to the earlier work, not an "apple with apple" comparison. They do reach similar conclusions.

- There are large scale areas of suitable forest types which support special species available across multiple land tenures, and
- As discovered through STMU resource variability, ground truthing is a critical next step

4.1. Desktop analysis of SST access and availability

Resource assessments have been carried out for PTPZ[25] and FPPF Land[26] as part of the Tasmanian Special Species Management Plan 2017.

[24] SSMP 2017, p32
[25] Forestry Tasmania (2015) Special Timbers Resource Assessment on Permanent Timber Production Zone Land. A report to Department of State Growth and Ministerial Advisory Council Special Timbers Subcommittee. 44 pages.
https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0008/525455/Special_Timbers_Resource_Assessment_on_Permanent_Timber_Production_Zone_Land.pdf
[26] Forestry Tasmania (2017) Special Timbers Resource Assessment on Permanent Timber Production Zone Land, Future Potential Production Forest Land, Regional Reserves and Conservation Areas. A report to Department of State Growth and Ministerial Advisory Council Special Timbers Subcommittee. 143 pages.
https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0009/525456/Special_Timbers_Resource_Assessment_on_Permanent_Timber_Production_Zone_Land,_Future_Potential_Production_Forest_Land,_Regional_Reserves_and_Conservation_Areas.pdf

4.2. Special Species Timber Accessibility

To assess the availability of SSTs on PTPZ, FPPF and private land a multi-criteria decision analysis was undertaken[27] using spatial data extracted from the LIST with the following characteristics:

- Use of the special species timber spatial layers
- Restricting SSTs to a minimum height of 20m using the canopy height layer
- Restricting SSTs within 200m of an existing road
- Rudimentary stream buffering

The spatial distribution of special species timber within land tenure types is as follows:

Land Tenure	Area (ha)	Accessible within 200 m of road (no stream buffer)
PTPZ	177 384	157 616
FPPF Crown	185 338	170 884
FPPF Hydro	8 253	8 170
Private Freehold	186 885	167 762
Total	557 860	504 432

Figure 25 Spatial distribution of special species timber by land tenure

Distribution of specialty timber by vegetation type is as follows:

The TasVeg layers used were:

- RCO: Coastal rainforest
- RML: Nothofagus - Leptospermum short rainforest
- RMU: Nothofagus rainforest (undifferentiated)
- RMS: Nothofagus – Phyllocladus short rainforest (Myrtle & Celery Top)
- RMT: Nothofagus – Atherosperma rainforest (Myrtle & Sassafras)
- NAD: Acacia dealbata forest

[27] Technical Forest Services 2024. Report of Multi-Criteria Decision Analysis for Identifying Areas of Accessible Special Species Timber

TasVeg Classification	Total area (ha)	Accessible within 200 m of road (no stream buffer)	Canopy height >20m and within 200m of road
RML	10 721	7 712	1 860
NAD	77 421	62 795	4 991
RMS	146 606	131 450	6 549
RMT	315 240	296 698	31 537
RMU	7 819	5 751	752
RCO	53	26	3
Total	557 860	504 432	45 692

Figure 26 Spatial distribution of special species timber by forest type

Stream buffering does not work very well with the LIST stream order classification and was not useful for this analysis. More detailed analysis should be carried out and followed up with ground-truthing of forests identified as suitable for SST production over the next 20 years.

This assessment is based on a 200m from road parameter, in terms of the area of forest supporting the distribution of the special timber species, this is highly conservative. Discussion with harvesting firms indicate capacity to harvest within 600m of forest tracks with ground harvesting equipment appropriate for the "light touch" selective harvesting principles and practice.

4.3. Huon Pine

In addition to the above, Huon Pine is arguably Tasmania's most iconic tree species and timber, it remains highly prized for boat building, restoration, bespoke furniture and instruments as well as utility items. It is intrinsically linked with the tangible/intangible ship and boat building history of the State and it's positioning the visitor market.

The Teepookana Plateau, south of Strahan, has been the primary area for Huon pine salvage for the past several decades having been previously cut over by earlier harvesting commencing 120 years ago. Salvage ceased in 2021. Earlier recommendations (2017) and a subsequent recommendation (2021) from the Ministerial Advisory Council (MAC) to initiate recovery policy & practice did not result in action to ensure supply.

In 2017 Peterson[28] assessed in detail the distribution, density and accessibility of Huon Pine live, dead standing and fallen trees, building on work conducted during the lead up to the 1997 Regional Forest Agreement process. While the analysis included both dead/down or fire killed trees, it also included live stands and is excluded from this report:

[28] Michael Peterson, "An assessment of options for the future supply of Huon Pine Timber" 2017 for State Growth Tasmania

> *The sawlog component is considered to consist of 22,000m3 of dead/down or fire-killed trees. Salvage of standing fire-killed trees in the West Coast Range should be a priority before another major conflagration destroys this large and valuable timber resource.*

During this updated assessment, Peterson analysed and detailed significant quantities of lightly fire killed, dead standing and down Huon pine, likely killed in the 1898 West coast bushfires. Some initial testing of the timber in the 1990's found the timber to be well preserved with Peterson reporting:

"There has been some sampling of two of the fire-killed stands for climate research purposes and the conclusion from coring was the wood properties are still very good quality. Many of the dead standing stems surveyed have good form and size and should produce a much higher recovery than current production at Teepookana which produces very little if any quality boat and furniture grades." This finding is already apparent and severely impacting both sub-sectors, for sector participants a cost of strategic inadequacy by resource managers.

The harvestable Huon Pine resource was identified within 4 West Coast zones. Access to the stands by road is only possible to 5% of the area, and Peterson identified the potential recovery through helicopter supported harvesting.

Conclusion

This spatial data analysis, previous STT (& Forestry Tasmania) mapping and reports, reinforced in discussion with foresters and harvesters, indicates significant areas of SST rich resources within the bounds of accessible, sustainable selective harvesting across tenures.

The value of standing resource value is also able to be enhanced. Active resource management such as Sassafras[29] inoculation, or branch breaking to open the bark layer, transform it from "blond" to the higher value "blackheart" variation, mimicking the process by which blackheart develops naturally through physical damage to the standing tree.

Partial/selective harvesting can provide productive, demand driven recovery through careful tree assessment and selection.

Partial/selective harvesting provides a marginal, incremental approach to matching supply and demand, reflective of the characteristics and positioning of the woodcraft sector. While there is a seasoning time lag from harvest to transformation into a highly valued product, there is an agility from selective harvesting which enables the sector to carefully integrate market shaping, demand and supply which is unavailable in industrial scale, commodity markets. This better enables certainty and confidence of supply than the dependence and variability arising from Eucalypt harvest model.

[29] Dr M Lynne & M Jessup conducted inoculation trials in Sassafras, demonstrating success in enhancing "blackheart" characteristics in "blond" stems. 2m/yr indicative spread.

Recommendations

1. *A program of ground truthing and resource assessment of accessible SST rich forests & dead Huon Pine recovery, with a focus on short term supply resolution and the long-term sustainable supply from the mix of available land tenures, including trialling helicopter supported recovery.*
2. *Identify and define special species management zones and refine/utilise legislative & policy instruments to codify operations to enable dynamically managed, long term supply continuity.*
3. *Commence immediate introduction of selective harvesting for non -Blackwood special species to deliver nominal, viable log volumes to the market.*

Image courtesy of Deman Marine

5. Harvest Legislation, Policy Settings & Management Stance

Delivering the potential of the Tasmanian Fine Timbercraft sector is underpinned by fit for purpose legislation, policy and management. This necessitates complementarity and alignment between forest policy on PTPZ, FPPF, Crown Reserves, Sustainable Timber Tasmania and other GBE landholders and consistency in interpretation of their relationships with the Tasmanian Timbercraft Sector and the collection/harvesting of nominated special species timbers.

The ability to access timber materials with relatively certain parameters is the key factor to the success and sustainability of any timber production sector. In terms of non-blackwood special species timber supply these settings have not delivered supply of fit for purpose logs, any certainty and confidence in future supply. For businesses other than those who hold large stockpiles, this is a major risk to their future.

The settings and suite of instruments are effective in meeting legislated eucalypt sawlog mandates and the supply of blackwood but not the supply of other nominated special species timbers.

The model below represents the sector as a dynamic system largely founded on the legislation, policy and government system, including that of the responsible GBE Sustainable Timber Tasmania, as the underpinnings for private investment and the application of timbercraft knowledge and skills. The policy, governance and management settings do not:

- Identify a clear, sectoral and societal strategic intent reflective of whole of government policy,
- Fit to, govern and complement the characteristics of the sector,
- Enable the harvest of non-blackwood special species timbers and ongoing certainty of access.

Legislation, Policy and Governance - System focus & direct impact

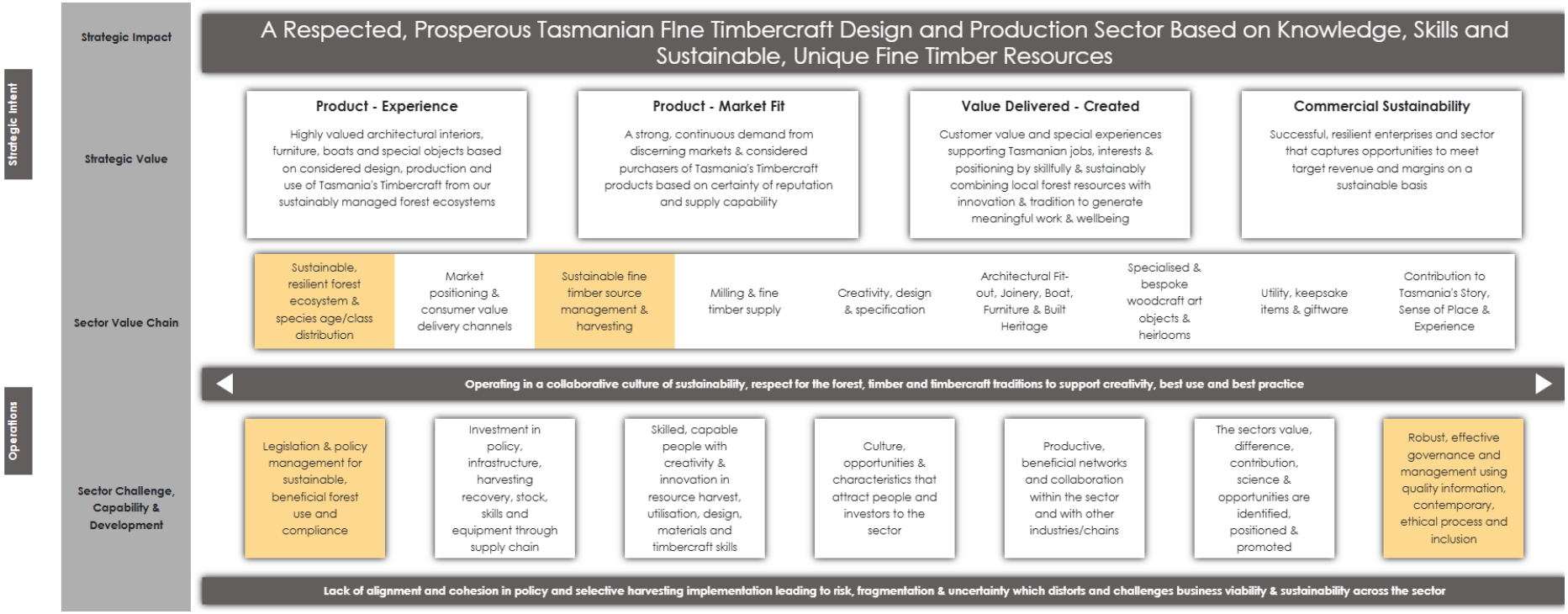


Figure 27 Legislation, Policy & Management System Fit

The following brings together the key elements of the instruments under which special species timber harvesting occurs.

5.1. Legislation

The following legislation and policies provide the legislative and policy framework for Tasmania's special species forest management policy and regulation.

- Forestry(Rebuilding the Forest Industry) Act 2014
- Forest Practices Act 1985
- Forest Management Act 2013
- Forest Practices Regulations 2017
- Tasmanian Regional Forest Agreement
- Tasmanian Nature Conservation Act 2002
- Tasmanian National Parks and Reserves Management Act 2002
- Tasmanian Permanent Native Forest Estate Policy

A number of these instruments are discussed below.

The ***Forestry (Rebuilding the Forest Industry) Act 2014*** (the Act), provides the legislative framework for Tasmania's forest management policy & regulation.

The Act defines special species and provides for extension of the species list, clarifies the harvesting method and the requirement for special species timber management plan.

Special species timber includes:

(a) timber of the following species:

(i) Blackwood (*Acacia melanoxylon*);

(ii) Myrtle (*Nothofagus cunninghamii*);

(iii) Celery-Top Pine (*Phyllocladus asplenifolius*);

(iv) Sassafras (*Atherosperma moschatum*);

(v) Huon Pine (*Lagarostrobos franklinii*);

(vi) Silver Wattle (*Acacia dealbata*); and

(b) timber of any other species that is prescribed by the regulations; and

(c) timber with particular properties that is prescribed by the regulations.

It is important to note that although not designated a special timber through legislation, eucalypt harvested from mature mixed forests is used in the timbercraft sector for applications such as fit-outs, joinery and furniture. Its unique grain and features also make it highly valued for crafting musical instruments and art pieces such as bowls. Eucalypt species have also been used to make key structural members in wooden boats such as keels, framing, knees and planking for over 200 years. Mature

Eucalypts are also valued in certain architectural and infrastructure projects to provide large dimension feature beams, planks and poles.

There was a consistent view across the respondent sample that eucalypt species with specialised, highly valued properties should be added to the list of special species timbers defined by regulation. Feedback has shown support for a small scale, sustainable supply of such timbers to meet the needs of the timbercraft sector. This is not a new concept, in 2010, it was agreed by the signatories to the Tasmanian Forests Agreement that the ongoing provision of special species timber would include *"eucalypt for our Tasmanian High value furniture and craft industries."*[30]

Given the important role that these mature Eucalypts play within the special species sector, inclusion in the supply approaches identified below warrants careful consideration.

Part 3 of the Act allows for consent to harvest in Future Potential Production Forest Land and the requirement for the minister to prepare a Special Species Management Plan. The conclusions and recommendations within this analysis conform to the Act.

The ***Forest Practices Act 1985*** provides the legislation which enables the development and revision of the Forest Practices Code. The Code accesses various technical documents and knowledge which are required to be used in the development of certified Forest Practices Plans. The Act also provides for Regulations which outline specific operating parameters and Code exemptions in special circumstances. The Regulations and Code could be revised to facilitate efficient and sustainable SST harvesting and reforestation.

The ***Forestry (Rebuilding the Forest Industry) Act 2014*** was developed during a period of uncertainty within the forest industry and how it would prepare itself for the future. In part this arose from the role of certification, particularly around the role of FSC Certification and Forestry Tasmania's pursuit of it. Some of the proposed legislation created significant tension with the views of the Tasmanian Special Timbers Alliance, representing the specialty timber sector.

A point of contention related to Clause 11 of the proposed Act requiring any harvesting on FPPF land to be consistent with the certification standard under which Forestry Tasmania operates.[31] This requirement had been included to protect FT's pursuit of FSC certification and avoid any potential issues regarding FSC's Policy for Association.

The specialty timber sector argued that certification should be a market-based business decision – not a directive from government. An agreement was subsequently reached between the Government and the Specialty Timber Sector that no special species harvesting would be undertaken on FPPF land for a period of 3 years, and not until the SSMP had been developed. In return, the Government provided assurances that for the period, an amount of non-blackwood millable logs equal to the

[30] Tasmanian Forests Statement of Principles to Lead to an Agreement 14th of October 2010
[31] Hon Paul Harriss, Minister for Resources, Second Reading Speech HA 2014

former 2010 Special Species Strategy would be provided. [32] This benchmark was 500m^{3}of millable logs of each non-blackwood species, a total of 2,500m^3 per year.

Despite this the agreed volumes of timber were not provided. In 2015, only 26% of this commitment was met, and by 2024 only 3.4% of the 2010 benchmark was harvested.

Evidence tendered to the parliament in 2014 was that it was believed that FT would achieve FSC certification by the end of 2015. Some ten years later, STT still has not achieved FSC but the impediments within the Clause 11 process remain, potentially constraining small scale selective harvesting.

This is included as an example of the longer-term consequence of inclusion of tactical elements within legislation, their durability constraining future options. Arguably if specific circumstances which led to the creation of Clause 11 no longer exist, Clause 11 of the Forestry (Rebuilding the Forest Industry) Act 2014 could be amended to remove subclauses 2-7 inclusive.

5.2. Regional Forest Agreement

The Tasmanian Regional Forest Agreement (RFA) provides a framework for the sustainable management of Tasmania's public owned forests.

The Australian and Tasmanian governments signed the Tasmanian RFA on 8 November 1997. It was varied on 18 August 2017 to extend its life to 8 November 2037 and to establish an automatic extension mechanism, with subsequent five-yearly extensions contingent on satisfactory completion of five-yearly reviews.

The RFA provided for mechanisms to support the policy of long-term, sustainable production of special species timbers, including the zoning and management of specific purpose areas[33], this resulted in the establishment of 143,000 Ha of Special Timber Management Units (STMUs). The STMU area was reduced by around 50% in 2005 when units were transferred into State Reserves, with a further reduction in 2012 resulting in the total area outside reserves being reduced to 35,000 Ha.

The Tasmanian Government identified within the Tasmanian Government Regional Forest Agreement Outcomes Report 2017-2022 that the Special Species Management Plan in accordance with Recommendation 12 of the RFA had been completed to the requirements of the Forestry (Rebuilding the Forest Industry) Act 2014 (Tas).

While the RFA recognises, supports and theoretically enables the specific management of the SST resource, as a non-binding agreement, it has not translated into the active and certain management of SST supply and mitigation of future risk to SST stocks.

[32] Hansard Legislative Council 26 August 2014
[33] Tasmanian Regional Forest Agreement, Attachment 12, Clause 27 1997

5.3. Special Species Management Plan 2017

The Tasmanian Special Species Management Plan provides a management framework to activate the long term, sustainable harvesting of special species timbers in Tasmania. The Plan applies to all public land tenures/classes where special species harvesting is consistent with the statutory purposes and/or objectives of the land tenure/class. Specifically:

1. As an advisory document only on Permanent Timber Production Zone Land (PTPZ Land) managed by Sustainable Timber Tasmania.
2. Future Potential Production Forest Land (FPPF Land) managed by the Parks and Wildlife Service (PWS) under the Forestry (Rebuilding the Forest Industry) Act 2014.
3. Conservation Areas and Regional Reserves, which are proclaimed reserves under the Nature Conservation Act 2002. PWS manages this land consistent with the National Parks and Reserves Management Act 2002.
4. Other public land, primarily managed by PWS under the Crown Lands Act 1976 (CLA). The remaining land in this category includes public land that has been vested in an authority, including Hydro Tasmania.

While each tenure has a specific management regime, the common denominator is the preparation and certification of a Forest Practices Plan (where required) to meet the requirements of the Forest Practices Code. This applies to both STT and private interests seeking to harvest.

Sustainable Timber Tasmania has chosen not to harvest SST from PTPZ land under these provisions except in one case for the harvest of Blackheart Sassafras.

It was identified by the then Forestry Minister Guy Barnett MP in 2017 that the implementation of the Special Species Management Plan (2017) was impeded by a range of legal hurdles, convoluted and unworkable process [34] and to date these impediments have not been resolved. The Ministerial Advisory Council subsequently provided input into the resolution of the impediments, however no action resulted, leaving the sector's future in a policy void. The plan remains unfit for purpose conflicting with internal Department of Natural Resources & Environment review findings.

The commercial viability of selective harvest is dependent upon scale, landform, access and method, within the context of ecosystem protection. [35]

Consent to harvest on land other than the PTPZ is reflective of the stance adopted by the management entities managed by Parks & Wildlife Services, Crown Land Services and Hydro has not proven feasible due to other legal constraints and/or risks identified by the land managers. Contributors indicate the practical impact as:

[34] Premier of Tasmania, Press release 17 July 2017
[35] NRE Minute to Minister for Resources – 19/01/2023

- Trees which are "storm-felled" are at times not recovered because of concerns relating to Chain of Custody;
- Consent to harvest is provided however the conditions applied render the approval commercially unviable, arguably a form of "constructive denial"; and
- Reluctance to allow timber harvesting in "protected areas" due to lack of management expertise and willingness to deal with the associated public relations aspects.

A key aspect of the SSMP is that it is only statutory on FPPF land and reserves advisory on the PTPZ tenures. For example, while harvesting special species by partial harvesting methods is mandatory on FPPF land. This clarification was provided by former Minister Felix Ellis MP[36] :

> *It is important to note that advice STT's management of specialty timbers (which is consistent with page 6 of the SSMP) indicates that:*
> *1. Non-compliance with the SSMP has no legal effect on land other than Future Potential Production Forest (FPPF) land; therefore, STT cannot be obliged to carry out special species harvesting activities in accordance with the "partial harvesting" principle of the SSMP on PTPZ land; and*
> *2. There is no other legislative requirement, including Tasmania's commitments under the Regional Forest Agreement (RFA), for STT to conduct its operations in line with the SSMP.*

Harvesting and supply of special timbers to the sector through contentious integrated harvesting that is not in accordance with the SSMP introduces unnecessary risk into the supply chain which potentially impacts the sector's positioning in the marketplace.

Harvest of SST is permitted on FPPF and Reserves. It requires differing approval processes for the managing agencies, a further challenge to those aiming to selectively harvest small volumes.

5.4. Sustainable Timber Tasmania

Sustainable Timber Tasmania is established and governed by the Forest Management Act 2013 and from a wood supply perspective the provision of Part 5, Wood Production Policy. While the Act proscribes 137,000m3 of eucalypt sawlog, while naming Special Species, no designated volumes are attached.

As noted in the introduction, Sustainable Timber Tasmania has continued the practice of harvesting non-blackwood special species as an arising from eucalypt harvesting. The continued downward trajectory of this harvest indicates a lack of corporate focus on special species harvesting and alignment to the Special Species Management Plan (2017) selective harvest approach which was designed as the instrument to address the harvest decline.

STT's Forest Management Plan (FMP - 2019), identified some 52,700 Ha of PTPZ land as special species timbers zones and the primary source of special species timber on this land. STT's FMP identifies that the

[36] Letter Felix Ellis MP to Tasmanian Special Timbers Alliance 30th November 2023

zones is comprised of blackwood forests, rainforests and eucalypt forests that are rich in special species timbers. [37]

The degree to which STMUs are fit for purpose and how they have been managed and utilised is a source of significant tension between STT and some sector representatives.

The Special Species Timber Alliance was advised[38] that the profile of vegetation types included in the STMUs varied as identified below.

Vegetation Type	Area - Hectares
Total	52,700
Previously Harvested Regrowth Forest (little or no SST)	3,740
Non forest areas (no SST)	10,560
Mining Leases including active mines & tailings dams	5,430
Forest scheduled for eucalypt harvest prior to 2026	1,200
Classified nonproduction for eucalypt – may still be suitable for SST harvest[39]	20,000
FSC HCV 3.3 designated forest not available for harvest	1,650
Old Growth Forest	1,650

Figure 28 Profile of Vegetation Types

This information supports the conclusion of misalignment between the identification of STMU as the foundation of the future of SST to the Tasmanian Fine Timbercraft sector and reality.

The STT stance towards the non-harvest of non-blackwood special species timbers raise questions of their role within the future management of the species from some sector contributors.

This overview signals a legislation, policy and management suite which blocks, rather than enables the harvest of the defined non-blackwood SST.

Sustainable Timber Tasmania (& Forestry Tasmania) have long predicted significant declines of SST from PTPZ land in the 2020's, and most recently, this was highlighted in STT's 2015 resource assessment of PTPZ land[40], excerpt below.

It is important to note the role of the Sustainable Timbers Tasmania charter as the critical driver in their focus and priorities.

[37] Sustainable Timbers Tasmania Forest Management Plan 2010, p.32

[38] Minister Letter Ellis letter to Dean Harriss MLC (16/05/2023) & information request to TSTA from STT 17 May 2023

[39] Sustainable Timber Tasmania's Forest Management Plan (2019) describes "non-production land" as "Areas of the PTPZ land that are not within the CAR reserve system, but which are not designated for wood production due to various constraints (e.g. too steep, inaccessible, non commercial stands, non forest)".

[40] Special Timbers Resource Assessment on Permanent Timber Production Zone Land (September 2015)

Table 9. Estimated volume (m³/year) of special timbers sawlogs available by species, time period and region. See Figure 1 for extent of regions.

		Volume of cat 4 plus utility sawlogs (m³/yr) by region			
Species	Time period	Northwest	Northeast	South	Total
Blackwood	2015/16 to 2026/27	4005	82	188	4275
	2027 onwards	3093	1	1	3095
Celery-top pine	2015/16 to 2026/27	25	0	105	130
	2027 onwards	8	0	2	10
Myrtle	2015/16 to 2026/27	232	5	33	270
	2027 onwards	215	5	5	225
Sassafras	2015/16 to 2026/27	48	2	40	90
	2027 onwards	47	2	1	50
Silver Wattle	2015/16 to 2026/27	0	3	67	70
	2027 onwards	0	-	-	-
Total	**2015/16 to 2026/27**	**4310**	**92**	**433**	**4835**
	2027 onwards	**3363**	**8**	**9**	**3380**

Figure 29 Estimated volume of SST sawlogs available

It is important to note that this is not inferring lack of resource, rather a lack of resource which fits the Sustainable Timber Tasmania business model and the strategic and governance parameters set the Tasmanian Government. This brings into question the future role & viability of Island Specialty Timbers.

5.5 Importance and Activation of Selective Harvesting

From consultation with experienced millers, the potential positive impact of selective harvesting is profound. In the current supply side policy of "take what you get" a nominal & potentially likely, annual demand for 10m³ of Huon Pine boat board would require around 90 to100m³ of Huon Pine recovered material, based on edge-to-edge milling. From this harvest there is another 90m3 of material to be sold to other craftspeople. Selective harvesting is based on individual stem or small group selection. This enables 'fit for purpose" tree selection a practice which can deliver the 10m³ of boat boards from 25 to 30m³ of log material when milled to deliver relatively standard boards. If larger sections are required, the recovery rate declines.

The prices of such selected materials increases but is offset by the productivity gains from having fit for purpose material available. This improvement in conversion:

- Improves resource productivity,
- Potentially reduces the overall volume of log harvest necessary to support demand, and
- Reduces impact on the forest.

The creation of the SSMP was seen as providing potential pathways to selective harvest-based resource security for the sector, however the plan cannot operate as designed without the enabling legislative and policy instruments (which function as intended), as well as a whole-of-government approach to implementation of the plan.

Since the creation of the plan, only one case of harvesting on PTPZ land has occurred and no successful application to harvest under the SSMP on FPFZ or Crown Reserves have occurred. The introduction of a demand driven selective harvest regime arguably requires enhancement to approval mechanisms to reflect the small scale, selective and potentially longer term, ongoing harvest management of small volumes of renewable resource. A key source of the challenge is multiple approval authorities, the landowner and the Forest Practices Authority working in a new small scale forest harvest context:

- For an FPP to be certified, landowner consent must be provided. The government has stated that it is not prepared to provide landowner consent to an applicant before an FPP is developed. This places an applicant at significant and completely unnecessary financial risk.
- FPPF land specifically requires an FPP for small lot operations of less than 100 tonnes or one hectare[41]. This is not required for all other land tenures in Tasmania, under such circumstances.[42] On FPPF land, even if an applicant wishes to harvest a single tree, a full FPP is required. This is overly restrictive for no apparent reason and remains a disincentive to harvest SST on FPPF land. No such requirement exists on any other tenure in Tasmania to which the SSMP applies. The selective harvest application process differs for FPPF and Crown reserves.

These requirements create a significant financial risk and create a block to the introduction of selective harvest.

This risk is exacerbated by the inability for a potential harvester to gain security for the investment in the approval process. A further situation arises when an applicant seeks to obtain a licence over an area of FPPF land for the purposes of SST harvesting. Government advice to applicants has been to seek a licence initially so that any major red flags for such harvesting would be identified, and that the licence process would give some assurances to an applicant before expending funds, thus reducing applicant risk. However, in practice, this process is problematic, as explained below.

- Clause 4 (8) prohibits "the managing entity of future potential production forest land cannot sell, transfer or convey that land to any other person." other than a lease, as opposed to a licence to harvest.
- For an entity to apply to harvest SST from FPPF land, there is a requirement to:
    - Identify a potential area suitable for harvest.
    - Ground truth the area to confirm resource and environment suitability.
    - Engage a Forest Practices Officer to prepare a Forest Practices Plan.
    - Prepare an application, containing the FPP to the Crown Lands Minister to harvest SST – the procedural challenge is that the FPP certification requires landowner consent.

The uncertainty of approval, gaining some form of license to protect and ensure harvest viability creates an unviable commercial environment.

[41] Forest Practices Regulations 2017 Clause 5

[42] Forest Practices Regulations 2017 Clause 4(a)(i) (ii), Forest Practices Act 1985 Clause 17(6)

The SSMP provides a different pathway for Conservation Areas and Regional Reserve SST harvesting. Landowner consent for the FPP can be provided to an applicant after a preliminary assessment of the proposed harvesting activity. This consent is provided very early in the process, and although further assessment is conducted post-FPP submission, the initial risk to the applicant is lower.

Conclusions

A consistent theme repeated during this study from sector contributors and documentation is that the full suite of Tasmanian legislative and policy instruments which form the strategic basis for sustainable Special Species Timbers supply have not been, or unable to be, activated at the operational level and that the instruments do not provide an obligation for the land managers to enact focused special species harvesting policies and practices.

This is now longstanding, and has effectively removed the foundation element of the sector value chain – consistent, reliable supply of special species timber, blocking the productive, sustainable implementation of the value chain and distorting system and business operability.

Consequently, Special Species Timber harvest continues to be supplied as "arisings" from Eucalypt harvest resulting in uncertainty and diminished confidence rather than enabling and optimising the value-add operations and potential of the sector. And forcing the sector to develop "work arounds" and to become heavily reliant on privately held stocks for production. This is not sustainable.

The value of legislation and its enabling instruments is in what it delivers, facilitates and what it protects, achieving the contemporary environmental, social and economic balance on which a prosperous resilient society and sustainable environment is based. The current legislative, policy and management settings and institutions do not combine to balance SST supply to demand within the principles and practice of sustainable harvesting.

The basis for sector operational and investment confidence is missing, generating a socio-economic opportunity cost throughout the sector value chain and the Tasmanian community.

There is a lack of systemic governance and management linking strategic intent, policy, strategy and practice across the sector, consequently the critical linkages between government agencies, business sectors and enterprises along the value chain are missing, ad-hoc or specific issue based. This results in a lack of common objectives, aligned purpose and resultant cohesive, complementary action, these carry a cost.

Effectively the fine timbercraft sector is attempting to operate without fit for purpose enabling legislation, policy and governance framework in place, this is not sustainable.

The Forest Practices Act, regulations and codes require consideration as to their suitability to support small-scale, SST partial harvesting. This consideration of how SST zoning is dealt with under those instruments, including the SSMP statutory authority and enabling processes across tenures.

In addition to specific SST zones, SST occur within land tenures and easements managed by other authorities. In addition to fallen timber, organisations such as TasNetworks undertake infrastructure

clearing as part of their FPA endorsed Environmental Management System as endorsed by the FPA. The model may be effective as an option to support SST zone management.

Recommendations

1. *Initiate urgent review and as necessary amendment to the policies, processes, strategies and charters and if necessary, forestry legislation to enable the implementation of the Special Species Management Plan (2017), the Regional Forest Agreement, and The Forest Practices Act 1985, to ensure the harvest of special species timbers across permissible public land tenures.*
2. *Utilising the "other species" categorisation of special species in the Act, nominate Eucalypt species with specific, high value and timbercraft based applications for inclusion with special species definitions and selective harvesting.*
3. *Develop a collaborative strategic positioning, governance & management framework to effectively enable policy and strategy to be implemented systemically and consistently across land tenures to provide the dynamic, demand driven linkage between harvest, the market and sustainability parameters.*
4. *Within this collaborative model, collect and analyse operational information relating to material use, employment, knowledge & skills development, and market conditions as the basis for metrics which enable active, dynamic management.*

Image courtesy of Britton Timbers

6. Harvest, Supply

Figure 30 Partial/selective Harvest, Milling & Timber Supply Fit

6.2. Harvest Profile

Intensive harvest methods such as Clearfell and aggregated retention forms, are the current, primary harvest & supply methodology for special species timbers as an arising from eucalypt harvesting. Blackwood harvest occurs within clearfell ground operations, while Huon Pine is selectively recovered from dead standing or fallen timber, or in minor volumes, from waterways.

The harvest method based on a range of environmental and operational criteria in conjunction with silvicultural aims[43]. There is significant contention relating to the harvesting of what are designated STMUs to produce primarily eucalypt to achieve contractual obligations, and very small volumes of special species timber. This raises questions as to the original classification of the coupe as a STMU. It is important to note that although the SSMP applies to the PTPZ land, it does so in an advisory capacity only. There is no legislative requirement for STT to conduct its operations in line with the SSMP or comply with the plan's partial harvesting restrictions for special species timber.[44]

"Hydrowood" salvages Eucalypt, Myrtle, Blackwood & Celery Top Pine from trees inundated within Hydro Tasmania's Lake Pieman. This is positioned on its difference to forest based resource and not included in the scope of this report.

Timber supply is governed by direct harvest volumes and quality, milling recovery rates for various grades of timber and existing stock and flow of material into the markets.

The sector has experienced a major log supply shock commencing in 2012. The forest harvest profile for the nominated special species has declined to the point where it has ceased for some species. The Special Species Management Plan (2017) commitment and management practices have not been implemented. The immediate impact is felt by specialist millers and a reduction in their operations to part-time and indicated imminent closure. While this may from a sector volume perspective seem minor, it is the small specialist mills which can mill to highly specialised needs to support the mix of high value transformation in parts of the value chain, contributing to the overall positioning of the sector and the Tasmanian Brand. It is not a "zero sum" impact where the loss of one piece of the jigsaw can be easily accommodated by another.

[43] An example is Forestry Tasmania Native Forest Silviculture Technical Bulletin No 8 2009
[44] Letter from Hon Felix Ellis MP Minister for Resources to Tasmanian Special Timbers Alliance dated 30th November 2023

Consequently, the market for non-blackwood special species has been met using existing stocks of timber and, for some species and grades such as boat grade Huon Pine and Celery Top Pine, been difficult to access. While it demonstrates the resilience of the sector, it is not sustainable.

The volume of special species logs from the PTPZ over the past six years through STT operations is as follows, the vast majority being Blackwood. It demonstrates the declining proportion of sawlog, a function of the harvest forest characteristics. This does not include timber sourced from salvaged operations or from private land.

Species	Category	Volume						
		2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Blackheart Sassafras	Cat 4	29.6	5.5	18.7	47.03	73		2
	Outspec	154.5	1.8	133.9	300.85			21
	Utility	6.3	3.9	6.4	7.53			
	Total	190.4	11.2	159	355.41	73	0	23
Blackwood	Unseg. Sawlog	6302.3	3969.1	2467.7	3916.73	12674		
	Cat4	734.6	670.69	649.6	461.43		4125	2817
	Outspec	1589.2	3314.8	3199.2	1955.17		2379	3884
	Utility	391.6	562.2	454.8	238.53		258	630
	Total	**9017.7**	**8516.79**	**6771.3**	**6571.86**	**12674**	**6762**	**7331**
Celery Top Pine	Cat 4	109.9	83.1	95.8	48.17	56	92	3
	Outspec	388.8	313.4	236.6	86.67		420	8
	Utility	42.3	71.7	93.1	12.75		22	
	Total	**541**	**468.2**	**425.5**	**147.59**	**56**	**534**	**11**
Huon Pine	Cat 4	125.7	157.8	28	51.51	75		
	Utility	24.2	19.7		12.68	90		
	Craft		488.3	124.4	138.12			
	Burls		8.3					
	Burled Log		6.3					
	Total	**149.9**	**680.4**	**152.4**	**202.31**	**165**	**0**	**0**
Leatherwood	Outspec	3.2	6.4	9.7				
Myrtle	Cat 4	25.5	11.1	27.1	21.56	170		2
	Outspec	179.3	2.6	2.9	127.98		58	112
	Unspecified			13.8	25.7		15	31
	Stumps				3			
	Total	**208**	**20.1**	**53.5**	**178.24**	**170**	**73**	**145**
Silver Wattle	Cat 4	96.8	12.2	38.1	63.33	8		46
	Outspec		0.5		33.02			
	Utility		0.6		1.29			
	Total	**96.8**	**13.3**	**38.1**	**97.64**	**8**	**0**	**46**
White Sassafras	Cat 4	0.4		16.4	1.63	68		1
	Outspec	1.9	0.8	50.8	28.75		44	1
	Utility	5.4	1.1	7.6	2.11			
	Total	**7.7**	**1.9**	**74.8**	**32.49**	**68**	**44**	**2**
Eucalypt	Burls			3.2				
Other	Cat4	17.4	5.2			859		
	Outspec	4.8	2	41.9				
	Utility/craft		0.4	221.7	1235.75		947	728
	Total	**22.2**	**7.6**	**266.8**	**1235.75**	**859**	**947**	**728**
	Total	10233.7	9719.49	7944.6	8821.29	14073	8360	8286

Figure 31 Volume of special species logs from the PTPZ over the past six years through STT operations

The above table demonstrates the random nature of the harvest. This is a function of:

- STT primary focus on harvest to meet regulated Eucalypt sawlog availability guarantees (& Blackwood), combined with the policy of not introducing partial/selective harvesting on PTPZ,
- The change in Eucalypt harvest source to include native forest regrowth and plantation, and
- The unplanned and "arisings nature" of special species timber as a by-product of native mature Eucalypt forest harvesting, apart from Blackwood, which is also subject to significant annual variation.

This volume and quality profile is set against the background of the 2010 Special Species Strategy which set the benchmark and expectation of 12,500 m3 of Special Species Timber millable logs, 10,000m3 of Blackwood and 500m3 each of Silver Wattle, Myrtle, Sassafras, Celery Top Pine and Huon Pine. This benchmark and expectation has flowed though into the consideration of following legislation, policy and agreements but not been realised, despite plentiful resource.

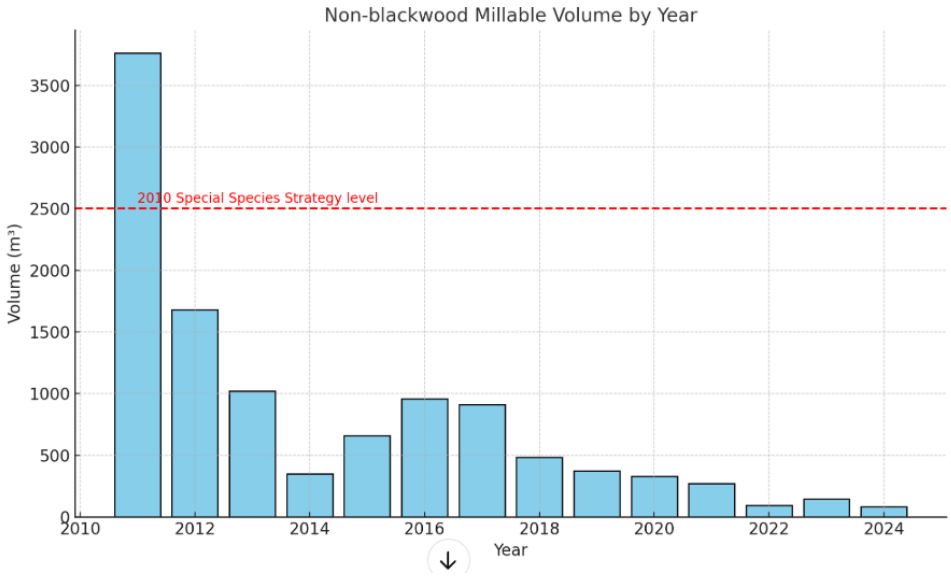


Figure 32 Non Blackwood Millable Volume by Year

The current root cause of the ongoing failure to meet this, or any, consistent supply benchmark and the steep decline is lack of implementation of the Special Species Management Plan (2017) because of long-standing, unresolved legislative and administrative blockages[45] to actively managed selective harvesting of trees which are fit for purpose to the sectors value chain. This supply decline directly impacts the sectors potential yield, productivity, operations and value add from the use of higher value of the wood and in some species a more diverse product mix, relative to those achieved from utility grade timbers.

The existence of limited but increasing, poaching is also evidenced through contributors indicating receipt of offer for logs from ambiguous, unidentified sources. In part this is related to the current high

[45] Premier of Tasmania, Press release 17 July 2017

value of timber in all forms from the uncertainty and the only partial implementation of certification and Chain of Custody.

The grades of recovered timber for supply to the value chain is totally dependent upon resource quality. Select grades provide the resource for square edged boards, the staple across the sector. Bespoke makers and specialist producers have very specific need for material such as burls, slabs and veneers.

This supply profile highlights the cause of commercial and market uncertainty within the high value woodcraft sector and subsequent reduction in confidence in its long-term future. Sector continuity over this disruptive period has been achieved using privately held stocks, innovative "work around" to challenges, importing wood (solid & veneers) and by combining timber with other materials.

This randomness also results in the Island Specialty Timber (IST) operation being stocked with "whatever has been harvested" material rather than market focused, curated material. An industry sector cannot prosper in a random commercial supply environment, COVID disruption to supply chains has demonstrated this. Drawdown on dried inventories, in conjunction with seasoning time lags, has masked the lack of new log supply.

The current harvest model fails to provide the foundations of the fine timbers and timbercraft sector which contributes higher average value of input and high value add across the Tasmanian community.

The above Harvest describes the programmed arising from Eucalypt harvest management. In addition to "Hydrowood" recovered from Lake Pieman, SST logs are sourced in other ways and from private land. Huon Pine is an example, anecdotally identified as being salvaged in minor quantities from west coast harbours, rivers and beaches. Some of these logs have been harvested decades earlier and left within river flood zones for later recovery; plans which have not been realised.

Clearing for infrastructure (roads, transmission lines) and mining can result in salvageable timber being wasted, primarily due to lack of knowledge or experience of the entity authorising or managing the clearing operations. This activity increases the range of agencies and entities with an indirect interest, but direct impact on special species recovery – they are invisible in current approvals, but should be included.

Where SSTs are not recovered there is an opportunity cost.

Conclusions:

Within the traditional "tall-wet Eucalypt" native forest clearfell harvesting, what are known as "special species" timbers were recovered as "arisings" from the primary focus on Eucalypt harvest. This practice resulted in significant quantities of SST; a mix of higher-grade logs and a relatively low average harvest cost as a consequence of the scale of harvesting in mature forests.

- Continued step reductions in native mature forest harvesting and substitution with native forest regrowth and plantation Eucalypt and Pine has led to a consistent and major decline in the harvest of the species.

- The exception to this is the harvest of Blackwood, historically and continuing to occur within specific species rich locations primarily in N/W Tasmania.
- The reduction in native mature forest Eucalypt harvesting has led to a reduction and variation of the annual SST volumes from this residual harvest method. The flow-on from this is a significant alteration of the supply of timber and the pathways from the forest to the "maker".
- STMUs, once promoted the source of sustained, long-term, consistent supply of special species timbers have not been utilised to achieve this.
- There is no targeted, demand driven harvesting mechanism in place, this creates a threat to the sector which is currently being realised in small scale, specialist milling, production furniture and boat building.

Recommendations

1. *Commence immediate introduction of selective harvesting methods for non-Blackwood special species to deliver nominal millable log volumes to the market.*
2. *The nominal volume phase be of 2 years, while ground truthing and sustainable yield volumes are re-examined in detail,*
3. *Existing STMUs should be analysed and ground-truthed for resource availability and yields, and*
4. *Aligned to the original purpose of STMUs, those found to be SST rich should not be utilised to meet legislated HQSL quotas but retained for partial harvesting practices in accordance with the SSMP and supply of SST.*

6.3. Partial/Selective Harvesting

The ***Forestry (Rebuilding the Forest Industry) Act 2014*** prescribes partial harvesting as the methodology for the harvest of Special Species Timbers, when this is the primary focus of the harvest. This prescription is only mandatory where compliance with the SSMP is also mandated, currently FPPF land, it is not obligatory on PPTZ land and therefore STT operations.

In the past almost 50 years there have been trials of harvesting methods to recover SSTs from pure rainforest and mixed wet Eucalypt forests. These have ranged from single tree extraction, through selective harvesting methods to clearfell. Focused SST harvesting is restricted to selective harvesting as either single stem or group selection.

The Warra Silvicultural Systems Trial in the southern forests was established in 1995 and examined several harvesting and reforestation techniques in a mixed wet *Eucalyptus obliqua* forest with rainforest understory[46]. Unfortunately, the trial was severely compromised when a catastrophic wildfire burnt the area in 2019.

[46] Neyland, M., Hickey, J. Read, S. (2012) A synthesis of outcomes from the Warra Silvicultural Systems Trial, Tasmania: safety, timber production, economics, biodiversity, silviculture and social acceptability. Australian Forestry75(3): 147-162.

The Sumac rainforest harvesting trials were conducted from 1976-78 and monitored since then. The most recent assessment of the trial site was conducted following the development of the SSMP in May 2019[47].

Rainforest species can establish in previously harvested areas from vegetative propagation and seed[48]. The Eucalypt component still requires an ash bed to ensure adequate regeneration of sown seed. It was established that the viable reforestation area can be achieved by gap size of approximately two Eucalypt tree lengths from a standing forest edge. Harvesting and reforestation methods were developed such that areas could be burnt for Eucalypt regeneration and where close to edges for rainforest understorey species to establish over time.

This was operationalised through the introduction of group selection harvesting systems[49] in mixed Eucalypt forests, where up to one-third of a coupe may be harvested at each cycle in openings about two (Eucalypt) tree heights wide. Receptive seedbed for Eucalypts is prepared by moderate intensity burning and rainforest species regenerate naturally.

Within the current native regrowth forest harvest profile and the Act, the findings relating to single stem and small group harvesting provide the most useful learning.

Rainforest harvesting is guided by the Rainforest Silvicultural Guidelines[50] which encourage low-volume production on a tread widely and lightly basis.

Several "one-off" operational trials[51] have been carried out to determine practical aspects of different ground-based harvesting techniques, the impact on remaining trees, timber recovery and costs. The cost/m^3 of recovered logs is highly sensitive to the fixed costs of site establishment, FPA approval, harvest planning and access requiring an extended time-period of harvest and matching scale of harvest over which to amortise these fixed costs. This cost is further offset by the quality profile of log recovery, to some degree breaking the cross subsidisation of higher quality timber sale value and the low relative margins of lower valued recovered products. There is a balance between incremental principles of selective harvesting and the distribution of harvesting effort across species rich, accessible locations, inherent in this is reputational risk to the industry.

Planning, overall harvest management and tree selection require high levels of knowledge, skills and experience and a profile of harvesting which allows them to be in continuous practice.

Ground- based harvesting costs are impacted by:

- Volume of timber extracted.
- Assessing the soundness of a tree before and after felling (e.g. external assessment of timber quality in Myrtle is difficult, with about 50% success rate)[52].
- Terrain (vegetation, slope, soil condition, stream crossings).

[47] https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0004/525460/Sumac_Rainforest_Harvesting_Trial_Report.pdf
[48] Tabor, J., McElhinny, C., Hickey, J. & Wood, J. (2007). Colonisation of clearfelled coupes by rainforest tree species from mature forest edges, Tasmania, Australia. Forest Ecology and Management 240: 13-23.
[49] Forestry Tasmania (2010). Silvicultural systems for native eucalypt forests. Native regrowth forest Silviculture Technical Bulletin No. 5, Forestry Tasmania, Hobart.
[50] Department of State Growth (2017) Rainforest Silvicultural Guidelines.41 pages.
https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0011/525458/Rainforest_Silviculture_Guidelines.pdf
[51] Forestry Tasmania (2014) Report of EP048C Celery-top Pine Harvesting and Sawmilling Trial
[52] This was ascertained by the Forestry Commission in the mid-1980s in a comprehensive assessment of the South Arthur rainforests.

- Distance from landings and roads/navigable tracks.
- Extraction techniques (avoiding damage to retained trees).
- Equipment and personnel required.
- Distance to market.

Harvester discussion identifies the increasing feasibility of ground harvest with contemporary equipment which allows "bush track" access (seasonal/weather dependent), ground operations (subject to terrain) to 600m of access tracks and specialised cable logging equipment for longer distances and steep terrain. Given the low cost of infrastructure, the primary operational set-up cost is initial movement to site and set-up, on this basis, with individual loads of approximately 32m^3, minimum recovery of 100m^3 is considered operationally viable to deliver a competitive mill gate price.

Small scale recovery also provides the opportunity for on-site milling, a model which has been made possible through availability of mobile, horizontal bandsaw mills, reflective of far based milling and an option for makers who also mill.

Ground operations can be combined with helicopter lifts as necessary and viable. Funds have been allocated for such trials.

There is limited experience using helicopter techniques in Tasmania although it is used in the Pacific Northwest (Canada and USA). The viability of helicopter extraction is impacted by:

- Terrain (slope, vegetation).
- The lifting capacity of the helicopter.
- Cycle time and turn around distance from log (or log bundle) collection to landing.
- Preparing areas for helicopter pick up.
- Preparing landings for log drop.
- Ability to aggregate a load in between helicopter pickups (i.e. limiting down time).
- Extraction of logs on the ground or standing trees (specialised felling technique).

Heavy lift helicopters are generally used for this type of operation. There could be opportunity to utilise helicopters that are in Australia on fire standby during shoulder periods around the fire season.

Image courtesy of Craig Howard & Son

7. Milling & distribution

Figure 33 – Milling & distribution system fit

SST logs are subject to the natural variability of any natural, biological resource, not each Sassafras log demonstrates the "Black Heart" characteristics, not every Huon Pine log contains 15% "boat boards". Sawn recovery varies by log diameter and quality, a species such as Huon Pine which was able to be cut as slabs can delivery around 75% of original log volume, where other species which require "quarter sawing" deliver a range of 25% to 35%, drying and further dressing reduces this recovery, as does in-house dressing to fit the final product. This discounts the roots, burls and limbs which in some species are highly sought after.

"Recovery" relates to the proportion of the overall log volume recovered through the break-down and processing process. This is firstly considered as an aggregate in green form and subsequently by the proportion of the log by timber and therefore use characteristic. At each stage volume is lost by sawing/dressing and in initial drying leading to shrinkage. Species differ in recovery rates overall and in "product type" categories because of treatment and end point structural, durability and visual features.

The primary processing log recovery rates and quality from the species vary because of material characteristics and its response to milling in the context of its intended purpose. Contributors indicate quarter sawn timbers can vary from 25% -38% recovery rate while slabs can enable recovery rates greater than 75% recovery, mills which process a wide range of the species achieve 50% - 60% recovery. At this primary processing stage, the wood product is rough sawn timber, further material loss occurs through the drying process (shrinkage) and secondary processing in dressing and as necessary profiling.

Each log (by species) produces a different product mix, some in high demand, others not. Optimisation of recovery is based on the product mix available, aiming for the highest value of recovery based on a hierarchy of fit for purpose material application, e.g. boat, fine furniture, fit-out/flooring, feature based high end/designer, musical instruments, utility products, jewellery etc. While there is a price/value relationship attached to the hierarchy, very small, high-quality design/crafted products demonstrate a high value add compared to material usage and cost.

The high value woodcraft sector differentiates from the structural timber sector through its use of varied components of the tree, from root balls, burls, branches, outer edges, bends and knees, including elements of figuring and characteristics which would diminish structural integrity in a load carrying application. This variation introduces a critical knowledge and skill dimension in recovering the timber to ensure its characteristics are fit for final purpose. This highlights the interdependence of miller and

woodcrafter, a factor emerging in the analysis as a challenge. IST indicated the demand for limb wood which goes into the craft and souvenir sector is much stronger and more constant than demand for logs which can be converted into sawn timber or veneer.

The maker survey indicated some concern for quality, indicating some replacement of Tasmanian product with imported because of these quality concerns. This highlights the critical role of skill and experience in balancing percentage recovery overall with percentage recovery of fit for use material.

Notwithstanding, while some special species have a very high milling recovery rate (compared with say eucalypt) the production of a small proportion of premium quality material results in large volumes of material which must be processed and sold to ensure the viability of processing the source log. This first stage of process recovery requires a high level of knowledge, skill and familiarity with the variations of the species to optimise quality recovery from a "best for purpose" perspective.

The period since the 2016 review has coincided with a reduction in registered sawmills, mills processing lower volume special species logs and an increase in makers vertically integrating milling into their operations. It has also coincided with the first mentions of makers importing mainland species sections and veneers to widen their offer, responding to the price of local timbers and in response to the quality difference to local products. While not milling their own logs, makers identify log purchases and utilisation of small-scale millers to process the logs under their supervision to deliver the sawn section to best meet their need.

There are indications from production furniture makers that:

- Mills do not always make available sections which best suit their needs, requiring too much work in laminating sections as part of the furniture manufacturing process, in effect transferring cost and increasing the total input cost.
- The use of plantation eucalypt in load bearing furniture has increased warranty claims from frame failure (such as cross grain breaks).

These comments highlight the importance of the quantity, quality, price and margin balance in the recovery equation. They provide both challenge and opportunity to the sector. It also reflects a lack of understanding of the quality of various timber products by both the seller and the buyer/manufacturer. This represents a disconnect in the market and perhaps a decline in experience and knowledge. An opportunity for education.

Importantly the commercial milling process incorporates 4 distinct stages:

1. Initial log purchase, break down, sawing/slicing,
2. Drying, and for sections/mouldings,
3. Dressing,
4. Stocking & sale.

This is a lagged process. Mills also sell unprocessed logs, green components and residual materials to offset costs.

The 4 stages highlight the log supply, recovery/timber supply and the intermediary and consumer demand challenges.

7.2. Milling Business

The level of employment from Harvest through to primary processing in Tasmania the native hardwood sector, in 2016/17 was 656[53], 51% of those employed in this activity. This does not include the associated secondary dressing resawing processing associated with the hardwood mills. The proportion of those employed in production of the select grade eucalypt, blackwood and the other nominated special timbers is unknown. Clearly over the past 5 years, the level of resource provided to the mils has declined, reducing their dependence, if not their capability.

Tasmania has 17 hardwood mills (excluding portable mills) reflecting the following production volume bands[54]. This reflects a reduction of 2 mills since 2016-17.

Mill type and log input capacity (m^3/yr)	TAS
Hardwood sawmill	
Less than 3 000	5
3 000 to less than 15 000	6
15 000 to less than 45 000	5
45 000 to less than 75 000	1
Total	17

Figure 34 Hardwood Mill Profile

Three smaller scale specialist mills, processing a mix of timbercraft species and/or specialising for example in Huon Pine and celery top, operate from the West Coast, mid- north & Huon Valley, currently primarily sourcing from stockpiles and operating as resource is available – these indicate a mix of responses to the current harvest situation from imminent closure or reversion to part-time/reduced staffing operation.

Island Specialty Timbers (IST)is fully dedicated to the fine timbers, with the remaining mills, while not fully dependent on the timbercraft purposed wood products, the contribution of the species and characteristics are essential to employment and productivity. Hydrowood recovered timbers is processed by 3 mills.

All of the hardwood mills process Eucalypt. The nominated special species go to make a viable product mix, when available. Nationally, appearance grade timber represents 20% of the hardwood sawmill output[55], this forms the portfolio of timber product which in conjunction with the nominated special species underpins the Tasmanian fine timbercraft sector.

[53] Jacki Schirmer, Mel Mylek, Anders Magnusson, Brigitta Yabsley and Julian Morison Socio-economic impacts of the forest industry Tasmania May 2018

[54] Jonathan Wong, Jeremy Tasker, Stephanie Black, ABARES National Wood Processing Survey, 2021–22

[55] Jonathan Wong, Jeremy Tasker, Stephanie Black, ABARES National Wood Processing Survey, 2021–22

The profile of milling businesses and capability in Tasmania has altered since 2016 through a mix of closure, business disruption, acquisition.

In general terms, there are 4 milling, seasoning and dressing models in practice:

1. Large-scale, capital-intensive milling of Eucalypt and the SST, then selling through long term supply contracts and local/national distribution channels,
2. Small scale mills and millers specialising in particular species or the mix of low volume SSTs for either public on sale or specific order,
3. Distributors/retailers who either directly mill or sub-contract, and increasingly
4. Makers who mill to recover timber to their specific requirements and then on-sell timber not required.

This mix reflects highly different cost structures, operational models and are viable pricing models related to where the "margin" is taken. This introduces the importance of scale in the earlier, lower value add stages of the value chain and some explanation of the challenges faced by small scale mills when the funnel for access to the low volume SST logs is primarily through the public tender process managed by Island Specialty Timbers.

Britton Timbers, through its focus on Blackwood is the largest miller of SST by volume, also milling other SST as they are available. Britton Veneer Products slices high-quality SST into veneers for on processing and sale.

Island Specialty Timber (IST) is owned by Sustainable Timbers Tasmania (STT), operating a major stockpile, milling services and storage site at Geeveston and a stockpile site at Strahan. This provides the primary channel for special species timber from the STT harvest to the market through a public tender process for logs and sale of sawn product. The operation provides a contract milling and air-drying service. IST is the dominant player in the non blackwood SST supply chain.

Other mills express frustration and identify commercial risk and challenges because of the inability to access logs to support their core business or to increase their scope of offer. The smaller, less capital-intensive milling operations tend to seek out direct market opportunities at a scale which matches capacity and to create a network of makers and a relationship which delivers material to purpose. These include timber export opportunities, some of which have been foregone because of inability to access logs.

Maker-millers purchase logs, mill to suit their specific product and forecast volume projections and sell the remaining material to a range of makers. This output includes sawn sections, slabs and thick veneers. The downstream impact is makers purchasing green timber as a mitigation of concerns over lack of future supply.

Several milling contributors indicate a preference for increased access to high-quality eucalypt and the nominated special species, such as blackwood to support their business model.

Conclusions

The decline in harvesting special species timber has distorted the market for logs in terms of what is available and elevated the price businesses are willing to pay for logs because of uncertainty of future supply and being available in small lots.

These factors tend to "squeeze" millers by reducing the miller margin, making milling for public sale unviable.

Variability in supply leads to makers "overstocking" materials, distorting their business models and undercapitalising their future potential.

7.3. Sawing, Drying & Dressing Recovery

The following analysis is designed to indicate the relative recovery of product category from the initial recovered, sawn material. Blackwood and Celery Top Pine provide the example species. Both charts utilise an index structure to make it easier to identify proportional change and to obscure commercial in confidence data.

The recovery graphs connect the overall proportion of milled timber from the total volume delivered to the mill and the associated log category profile. It provides a clear indication of how the reduction in log quality impacts recovery.

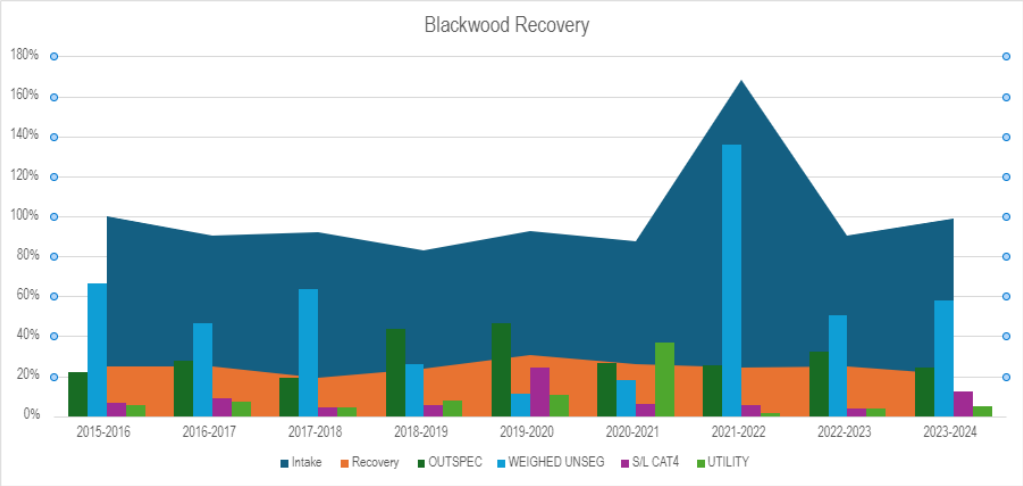


Figure 35 Blackwood Recovery Profile

The apparent anomaly in the 2019/20 and subsequent year recovery rate for Celery Top is because the logs were purchased in the earlier year and processed in the next. The graph highlights the difference in recovery rates. IST indicates an overall recovery rate of 55% for its species and log mix, with Hydrowood around 38%, mirroring Eucalypt recovery rates.

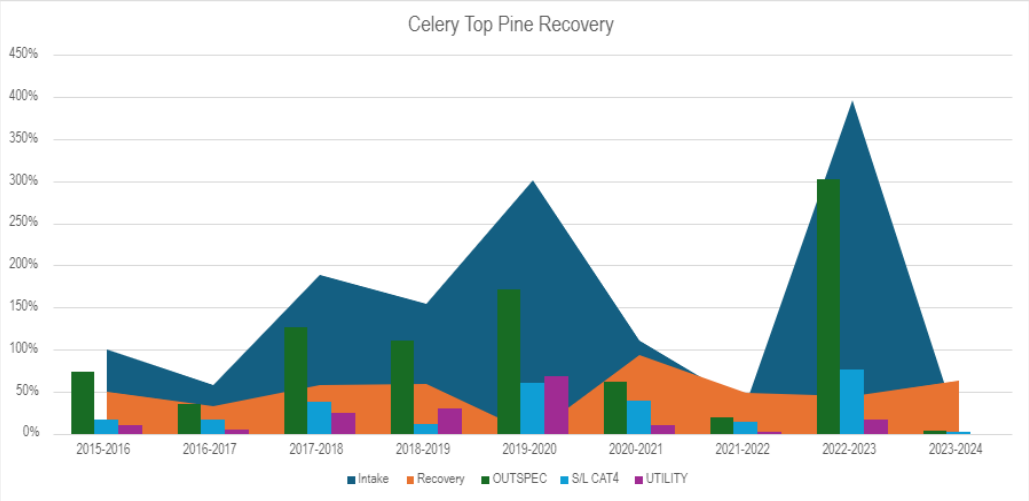


Figure 36 Celery Top Pine Recovery Profile

The sawn material is transformed into specific products to achieve highest value add. The following tables indicate the broad product range, volume sold and how the difference adds to stock. The early sales are derived from product produced prior to commencement of the sample period. The key is the pattern of stock increase from the commencement of the sample period, highlighting the degree to which mills "end up" holding large inventories. The cyclical nature of sales is also apparent (including COVID).

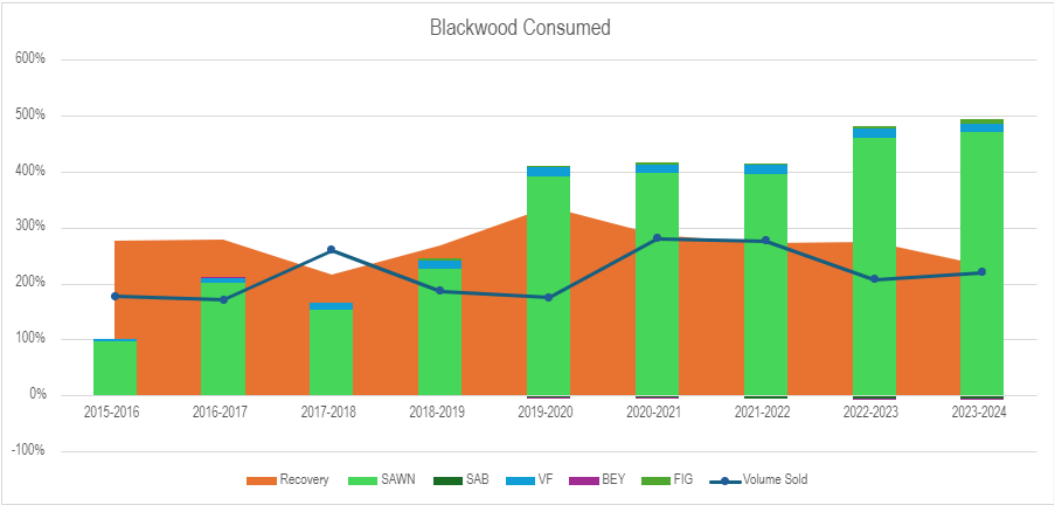


Figure 37 Blackwood Product Recovery and Volume Sold Profile

While Celery Top exhibits more consistent sales volumes, it also demonstrates greater unsold volumes. Both charts highlight the milling challenge of creating a fit between recovered product profile and the market.

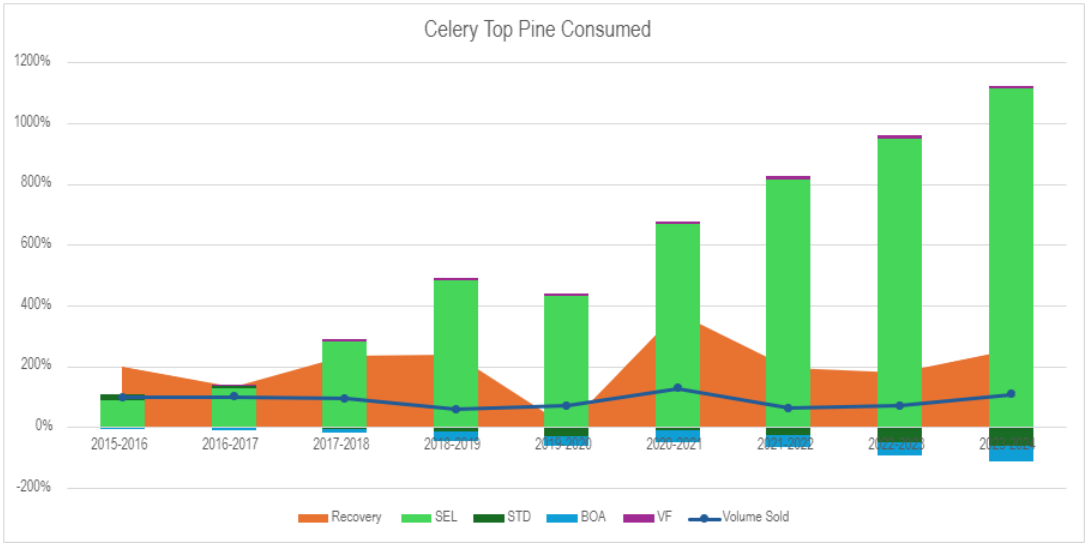


Figure 38 – Celery Top Pine Product Recovery & Volume Sold Profile

This risk is exacerbated if the species, e.g. Myrtle is not supplied in consistent volumes and quality rendering sales opportunistic rather than strategically promoted.

Conclusion

The decline in special species volumes is accompanied by a decline in log quality and consequent sawn timber product recovery.

Implementation of the selective harvest strategy for non-blackwood special species, will enable increase in supply and improvement in fit for purpose quality based on primary use demand and need through its stem selection process. Inherent in this is the increase in recovery, offsetting (to some degree) the increased unit cost of harvesting compared with clearfell operations.

Recovery is critical to both process productivity and production of saleable product, some product remaining in stock for long periods, resulting in significant holding costs.

Continuity & certainty of product supply is critical to the confident creation of a market presence, ongoing stream of income and community benefits.

7.4. Stocks

Sector Dimension

Stocks of the nominated non-Blackwood special species have supported the continuity of the sector during this period of declining log supply, this is not sustainable.

Stock is held within all elements of the value chain and as noted in private/investment stocks. The current low harvest rate has been offset and the production risk mitigated by increasing the flow of these stocks into the market, in part attracted by the increases in the price of dried SST.

Stocks of special species dried timber are held as commercial, risk reserve, investment and involuntary stocks.

Stockists and distributors hold extensive stocks reflecting their position in the value chain as connections between the log, the timbers and the makers. Some firms integrate all these steps while others fulfill a specialist or locational role, for example an interstate distributor. For some the product range and stocks are focused on supplying fit out and joinery commercial, residential markets and production furniture, others to designers and makers of bespoke and crafted objects as described above.

These distribution channels have been severely disrupted over the past 7-8 years. Variation and in some instances virtual cessation in supply volumes and profile has led to business uncertainty and negatively impacted the flow of material from forest to project/product, it has:

- Introduced perceptions and fear of future lack of supply, increasing log and timber prices,
- Attracted commercial investors to the "market",
- Increased uncertainty and reduced confidence in the future of businesses and capacity to invest,
- Created a situation where the marketing of some species to, for example, interstate commercial fit-out markets, is not viable because of supply inconsistency negatively impacting the distributor and species reputation for continuity,
- Created the environment for sale of privately held stock to become a key source of supply to the maker market, in combination with online (FaceBook, Gumtree etc) and other markets capitalising on the "windfall" of long held stocks increasing market presence, while also undercutting commercial operations, putting the professional businesses at risk and certifiable supply chains,
- Increased substitution of Tasmanian timbers with international imports for project and products along the whole of the value chain,
- Resulted in smaller scale, specialist mills no longer operating viably and transitioning to part time operations or closure, and
- Marked increase within medium scale businesses in the number who purchase logs, mill and dress their own to purpose.

A stockpile of Huon pine craftwood and sawlog exists, largely created from the recovery of timber during the historical flooding of hydro impoundments. As of August 2024, the stockpile contained approximately 2,935 cubic metres of timber comprising:

- 320 cubic metres of Cat 4 and utility sawlog
- 2,500 cubic metres of craftwood

The stockpile value as of August 2024 was approximately $2.75 million, [56] with the craftwood valued at $2.1 million and the sawlog valued at $0.65 million.

In addition, contributors to this report indicate privately held log stockpiles of varied species.

[56] STT Huon Pine Stockpile information provided to Future Forest Advisory Panel 6th August 2024

Large scale milling operations operate in conjunction with local and national distribution outlets and partners. In the middle market space, businesses such as "The Wood Guys" and "Distinctive Timbers" operate specialty warehousing and retail operations. The levels of stock held by these businesses is estimated in the tens of AUD millions. While held on balance sheets, these are not a recognised commercial asset within the finance market and are arguably an impediment to investment in value-add opportunity further down the value chain.

Miller makers operate in both fields, processing material for their own use and for sale within their network of other makers and, in some instances, distribution outlets. Boat builders and other makers sell offcuts to those operating further along the value chain, as do others. It is these informal networks that support supply, if people are not connected, it increases the level of difficulty in supply.

Digital marketplaces indicate a continuous supply of SST, some sites represented on an ongoing basis. In some instances, the provenance of these materials is questionable. Not all sites are Tasmanian based.

The survey indicates significant stocks of timber held by producers, the exceptions being production joinery and production furniture groups who purchase on a regular basis or as negotiated on a large project sequencing basis.

Specialist timber retailers are holding significant stocks, for example up to 300m^3 of mixed species, primarily based on logs they mill and season.

The largest stocks are held by mills. It is important to note that not all stockholdings are voluntary because not all wood products have a ready market or are in equal high demand. The cost of this stockholding, in conjunction with the seasoning time at minimum 1 – 2 years depending on the profile dimensions is identified by business as a key viability challenge and industry constraint.

Publicly available stocks, based on primary supplier data, are described at a minimum in the following table.

Category	Volume (m3)	% Blackwood
In Process (green & in rack)	3308	70.3
Finished Product (rough sawn and dressed)	4879	73.9

Figure 39 Stock in Process & Finished Profile

For non-blackwood species reflecting low harvest, the following stocks are identified.

Species (m^3)	In process (m^3)	Finished Product (m^3)	Total Boat Grade (m^3)
celery top	136	173	1.7
huon pine	37	45	25[57]

Figure 40 Huon Pine and Celery Top Pine Stock

[57] This includes 22m3 held within the Wooden Boat Bank

These volumes do not reflect the full volumes which may be available but are considered highly indicative in both volume and species proportion at near use stage. In addition, mixed species and diverse quality category log supplies are held by IST and private sources.

The available and projected volumes drive the price structure and its premium over the staple Eucalypt product. There is a price progression based on species and specific product/use within the species profile. The price of specific species and grades, while attracting attention as benchmarks are a poor indicator of the return from purchasing, milling, seasoning, storing, distributing and selling the timber.

Select grade Eucalypt is a reference point, at an average price around $2,500 per m^3 it provides a baseline, above which others increase dependent upon species, for example blackwood sells on average for $3,500 per m^3 on average. Featured Eucalypt sells for between $6,000 and $10, 000 per m3 in rough sawn form and between $10, 000 and $15,000 per m^3 in dressed form. This highlights that elements in less demand sell for much lower prices, sale of the full spectrum is critical to achieve a viable return.

Timbers are subject to grading, for example slabs graded on a scale of 1-5 reflecting different volume pricing. Turning blanks ranging from $7,500 to $12,000 per m^3 based on the transition from plain to highly featured. Celery Top boat board, $10,500 per m3 and Huon Pine boat board, $13,200 per m^3.

The fine timber production elements of the value chain operate quite different models depending on scale and product focus. This impacts where their source of timber and the degree to which they hold stocks.

Enterprise Dimension

The relationship between product source and utilisation is important.

The dominance of mills is apparent, across the sample and when the producers are employing business and as they increase in scale.

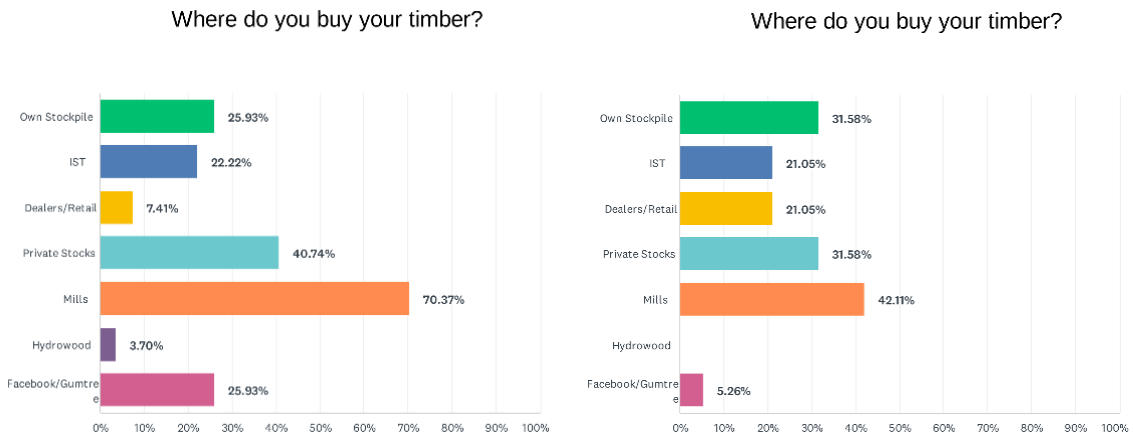


Figure 41 Where do you buy your timber? Full Time vs Part Time

The mills are the primary source for Furniture/Joinery (59%) and Boatbuilding (80%), however sourcing from private stocks is their next option with 31% Furniture/Joinery and 60% Boatbuilders buying. It is

worth noting that 60% of Boatbuilders are also using Facebook and Gumtree to find appropriate timber. It is noted that the furniture and fit-out cohort purchase profile includes high quality eucalypt and blackwood utilised in fit-out and furniture. This cohort utilises mills more than the smaller scale operations which are more highly dependent on the non-blackwood special species and their own stocks of timber. The profile does not indicate mills holding large stocks of non-blackwood special species timber.

With the smaller operators and hobbyists, their stockpile is an ongoing source, with mills and private stocks used as the next option. (Appendix 1).

Supply access dominance (46%), and price sensitivity are indicated (37%) along with good supplier relationship (26%) as the main drivers of supplier selection.

Full time contributors along with larger furniture producers/joiners and boatbuilders buy through larger mills and recognised specialist supplier to meet their need for higher quality timber, cut to specific measurements. For boatbuilders quality and sizes is the primary goal, for a cost, within viability parameters. Small millers and woodworking groups are much more focused on cost due to the tighter pricing margins, offset by their practice of sourcing much more from their own personal stockpiles, some have enough to see them through to the end of their business.

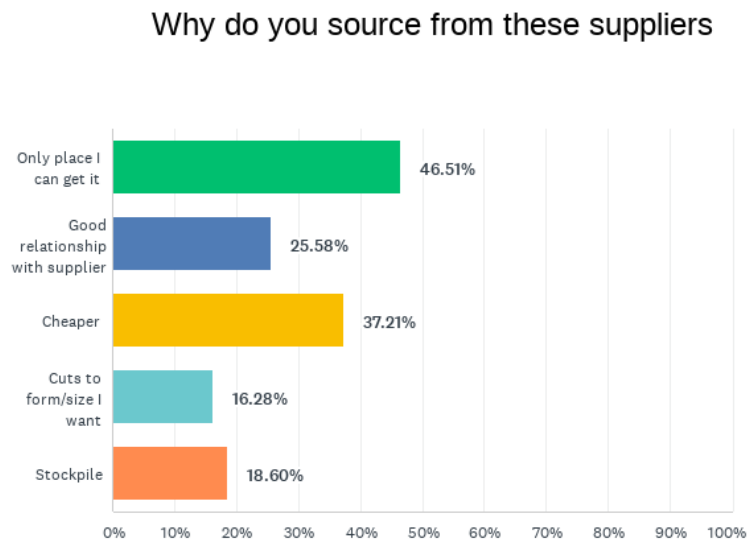


Figure 42 Why do you source from these suppliers? (All contributors)

Full time contributors are more driven by reliable suppliers and need for higher quality timber cut to specific measurements.

For craftsmen producing high value products with low material input ratios, material price is less of an issue, whereas the woodworking groups are much more focused on cost due to the tighter pricing margins, this also reflects a price maker, rather than price taker market.

Commercial inventory comprises a level of stock which is held to cover the period between re-order and re-supply. Until recent supply chain disruption through COVID and with globally integrated supply chains, this was underpinned by "just in time" (JIT) practice, designed to minimise stockholding costs

but requiring high levels of certainty and confidence. The timber industry, in particular, the hardwood producers, is characterised by long lead times as a result of the drying process, in the case of the small-scale elements of the Tasmanian Special Species Timber Sector, the major downward trend and historical variation in supply provides a stockholding challenge.

Longer established, smaller businesses interviewed, tend to hold stockpiles of material as part of their risk management strategy. These are incrementally and opportunistically increased, (in some instances are inherited) to counter the uncertainty of supply of both volume and quality of material. Of those who don't stockpile, 75% would, if they were able to do so. Some contributors have stockpiles which will last out their careers, for some in small object production for example, this does not equate to large volumes.

The survey highlighted a strong preference toward stockpiling timber in volumes and for reasons described below. The larger entities such as fit-out joineries, production furniture makers and larger project boat builders do not follow this pattern because of a combination of site capacity limitations and the relatively higher values of projects and the holding costs. They compensate for this through enduring relationships with preferred mills and by providing programmed lead times to delivery. The lack of what is perceived as fit for purpose Huon Pine and Celery Top production has led to considerable pressure on the boat sector.

Across the balance of the sector, stockpiling is normal practice.

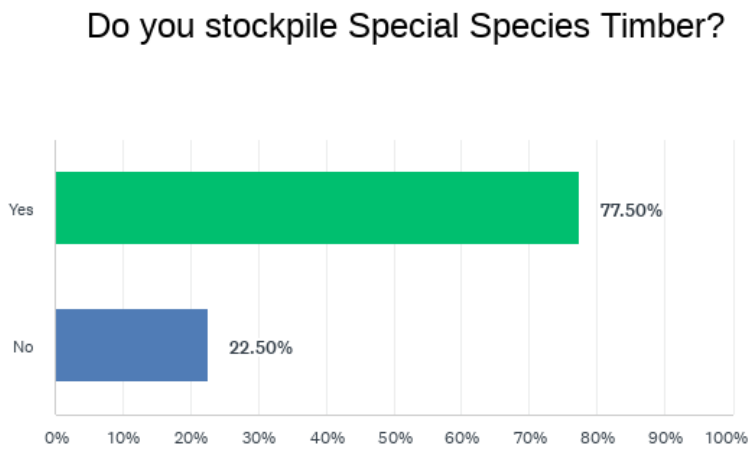


Figure 43 Do you stockpile SST? (All Contributors)

78% of participant's stockpile timber. Those who don't are generally limited by storage space or finance. The use of stockpiles, especially within the two Woodworking groups where over 80% stockpile in both groups, enables the participant to stabilise the prices of their products because they know how much they paid for it, and ensure ongoing supply (Appendix 5).

Larger scale business such as production joineries and furniture makers are the exception to this, generally purchasing stocks to a pattern or upon planning for a commission, establishing a supply program with a mill/distributor.

The reduction in harvested volumes has sent negative volume and quality of supply signals to the sector and its markets. The response has been for some makers to increase their direct purchase of logs or to buy unseasoned timber. This is a risk mitigation cost, as the following table demonstrates, this is an unwanted but considered necessary cost. For others it results in unsalable stocks because of incapacity to provide continuity of supply.

Some businesses are unable to purchase stock for storage as it impacts cash flow and the asset value on the balance sheet is uncertain. One supplier elected to liquidate stocks to improve the liquidity of the business on the guarantee that sufficient logs could be purchased to meet ongoing needs. The supply of future resource is now uncertain, and this has had a negative effect on business growth and confidence.

Large scale programmed and opportunistic recovery of SST emerged as a pattern during the southwest and west coast construction phases, in particular the hydro dam building period which established both resident populations and access infrastructure to these regions. While some stocks were set aside for future use (at times not realised), others were a pure investment. These have provided a source of informal network supply and periodically as deceased estate sales. In the context of the small volume flows, these are not trivial, an example identified during this research is a high-quality Huon Pine stock which has a value of almost $200,000 of dried high-quality material ranging from boat boards, knees, feature grade slabs and roots. While unusual as a personal stock, it is an artefact of an earlier period, now being supplemented by professional investment through the tender process.

Earlier gathered stocks raise the challenge of Chain of Custody certification. The Chain of Custody is identified as having relatively simple mechanisms to address the undocumented status of the stockpiles. The harvest model proposed by the Special Species Management Plan (2017) and built upon in this report should ensure Chain of Custody certification in line with strengthening market expectations of certification.

The recovery of special timbers from dam impoundments prior to fill was a standard operating practice, for example, Lake Gordon provided a source of Huon Pine, however these recovered stocks have depleted to around 300m^3. Investigation into further salvage from Lake Gordon and Lake MacIntosh is progressing.

Involuntary stocks reflect holdings of unsold or risk mitigation timber. This can reflect a mismatch between the section, species, features, sale source and price conditions and demand.

- Investing in timber stocks because of lack of supply chain confidence.
- Existing commercial supply chains disrupted through what is emerging as a peak of "estate" and opportunistic sales of private stocks as intergenerational change or response to price signals occurs. The next few years may see a decline in these stocks.
- There is at times a tension between achieving the highest rate of log recovery and producing a section or piece that can be productively used for a specific purpose, increasing involuntary stock holdings.

- The ability to respond to a market and importantly to shape a market, requires certainty of supply. Lumpiness in supply renders investment in the marketing required to shape a market and stimulate demand unviable.

The existence of risk mitigation and involuntary stockpiles is a lead indicator of the difficulty of operating a business in the sector. Stockholding carries a holding cost, but it means people can price and supply with certainty. This stockpiling practice enabled some bespoke furniture makers to capitalise on the COVID demand spike.

The stockpiles of SSTs include:

- Dry, dressed and sliced timber product within mills ready for sale to distributors and end users.
- In log form by Island Specialty Timbers at Geeveston & Strahan, available through tender. Much of this resource requires ongoing water treatment to ensure it remains viable. This is publicly available, the pricing reflecting the value which small scale millers, miller/producers, producers and investors ascribe to the resource.
- The wooden boat bank which has recently repacked material to include smaller, less expensive packs in response to market feedback. Requests for the purchase of individual pieces from this stock has been rejected, as has requests to use the bank to support refurbishment/restoration. The principles of smoothing supply & demand and providing a transitory home for high quality boards to prevent lower value use remain relevant.
- Stockpiles of timber in private hands (often stored under houses and in sheds and of indeterminate quantity and quality). At times these are offered as estate sales. Such sales intersect with concerns over Chain of Custody and whether the purchase is "legal". Much of this stock was established during the Hydro west coast dam construction period.
- Logs and racked green sawn timber for drying held at sawmills for minimum periods of 12-18 months and in various stages of processing and sale, plus unsold stock as identified in the Blackwood and Celery Top examples above.
- Stocks held by makers as a risk management strategy.

There is evidence of inherited stockpiles being sold on Facebook Marketplace, Gumtree and other social media sites, some of these include several hundred thousands of dollars based on current prices.

"We would stockpile if we had the money and the space."

"I have to stockpile because of how far I have to travel to the West Coast to get it. Sassafras is a hard log to store and stockpile, too expensive. Only goes to tender, and I buy direct from the mills."

"Like to buy as logs but that's a future investment and requires money.'

"Nearly all the timber I need is from my own stocks. I very rarely go to the mills."

"I stockpile timber, I only buy if someone has something interesting for me in terms of shape. It's getting expensive these days, so I made sure I have enough to last me the end of my days."

"Buy in bulk and have a supply that has lasted for years. Inherited for father as well."

"If I have the time to plan ahead, I can make sure the timber is ready to use. When I have some money I want to talk to my sawmiller and get it when the timber is available for a small stockpile."

The stockpiling reflects a mix of species, including those commonly available and challenging to access.

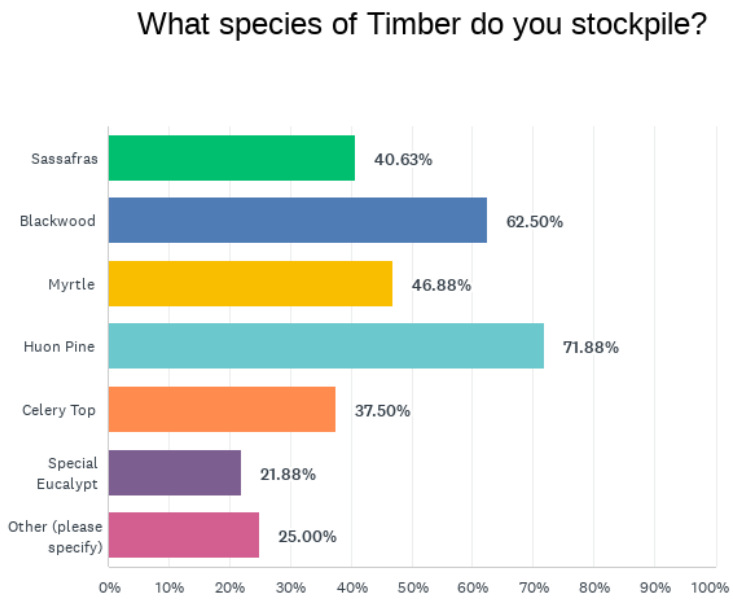


Figure 44 What species do you stockpile? (All Contributors)

Stockpiles ranged from some makers having three sheds full to smaller quantities stacked in a corner of the workshop. Stockpiles ranged from 2m3 through to 6m3 in volume, dollar value ranged from $500 to some with an excess of $15,000 worth of timber. The future longevity of their stockpile was varied, dependant on their industry, with some makers of small volumes indicating stockpiles which will meet base demand for years. Within the timber retail sector discussions, stockholdings of around 300m^3 of mixed species were identified (Appendix 6).

While these stocks accumulate over time, for makers in particular, the makers stocks provide some future business certainty to counter concerns relating to their existing supply sources.

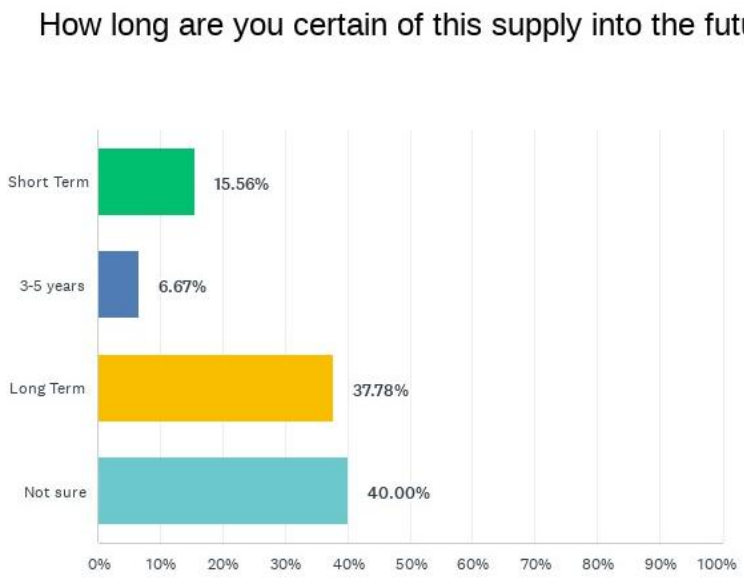


Figure 45 How long are you certain of this supply into the future? (All Contributors)

In 2016 only 2.99% of contributors were unsure of the supply of timber into the future, in 2024 40% are unsure of the supply.

7.5. The Burden of Stocks

While inventory is how producers approach to even out variation in supply and demand, the length of seasoning time and variation in supply and therefore ability to generate relatively stable demand creates a stock burden material stockpiles is a burden on the sector. Recognising there is a long lead time from log harvest (unless dead standing for example) to a dried, fit-for-purpose material, the need to hold excess inventory limits other investment options such as equipment renewal/upgrades.

Sector milling and distribution business models are characterised by large stock holdings. While a characteristic of the milling and seasoning process which can take several years, and the variation in products recovered from the logs, the universally large stock holding distorts business models, arguably reducing the funds available for technological and product innovation.

A consistent and certain flow of material is critical to normalising the cost of business stock holding models to realise latent potential of an environmentally and economically sustainable sector.

Conclusions

The non-Blackwood and Eucalypt special species fine timbercraft sector has primarily operated from internal stocks for the past few years, for many businesses and the sector, this is not sustainable.

The Tasmanian fine timbercraft sector is at risk of losing its iconic products/species mix and consequently the employment and marketing advantage which is based on them if new supply is not generated.

While the wooden boat bank provided a potential, for a range of reasons it has not provided an effective risk mitigation to boat building and restoration sectors.

New entrants into the sector are most challenged in establishing reliable timber supplies, a barrier to entry.

The cost of holding excess to need, or risk motivated stock in semi processed and dry condition is a high cost of doing business and a potential constraint in further value add investment.

Recommendation

This direct harvest intervention can be complemented by initiatives to **make greater stocks of often long hoarded timber available** and to optimise the potential value of these resources until a certainty of sustainable supply can be achieved, this includes consideration of:

1. *How special species can be drawn out of stockholdings not forming inventory with active contributors in the sector and introduced into the Chain of Custody certified supply chain.*
2. *How the limited sales which have been made from the wooden boat bank might be used to create additional supply of material for both restoration and larger vessel construction promoting greater stock turnover and capacity to self-generate*.

Image courtesy of Rob and Nelson Bird, photo by Jade Hallam

8. Achieving sustainable supply and demand

Matching supply to demand in a diverse, dynamic market is a challenge requiring similarly dynamic operational management underpinned by systemic management of legislation, policy, strategy and best practice operations which provide certainty to its foundations. This is made more so when the product is based on a "wild, natural" input which then requires some years of seasoning prior to use.

Special Species logs are a metaphor for the sector where the challenge is typically to balance timber supply with demand, for example if a Huon Pine log produces 10-15% boat board, 85% of the recovered timber remains to be sold across the sector as part of the cost recovery and margin generation process. Stock holdings carry a direct and opportunity cost. This challenge can be elevated to species harvest balancing.

The root cause of the challenges facing the Tasmanian Fine Timbercraft sector, particularly those with a high dependency on the non-blackwood special species is the lack of systemic management and responsibility performance oversight and priority. Operationalising the interface between a state owned resource, government agencies as land managers and the private sector is always challenging, made more so when a GBE is inserted between government and the private sector as a key land manager and primary supplier of resource to the privately operated production sector and their markets.

This context frames a complex, dynamic system whether convenient or not to recognise it. The situation where organisations focus on their "specific box and interests" leaving the other boxes within the system to others and the resulting negative outcomes, is evident from the analysis. The sector framing designed for this analysis also provides the framing to manage the system, to activate and implement the recommendations of the report within the collaborative, needs based stance. It provides a consistent visual model to enable people to locate themselves and others in a commonly used, structured way to enable their role, input and performance levels and challenges to be clearly articulated and subsequently objectively addressed from the "box and system" perspectives.

Figure 46 following, visually highlights the root causes using the coloured elements:

1. Lack of meaningful, active harvest of non-blackwood special species within the sector value chain threatens the sustainable, long term and high value performance of the sector,
2. This is caused by a combination of Sustainable Timber Tasmania's strategic focus and governance stance and unresolved impediments to the implementation of the Special Species Management Plan (2017) and the intent of instruments such as the Regional Forest Agreement, removing 2 critical capabilities from the system, legislative authority and system wide governance.

Without these the remaining elements of the system are in the short term less productive and capable than they could be and in the longer term at risk of not being viable. In effect removing the coloured elements renders the system inoperable once stocks diminish to the critical tipping point(s).

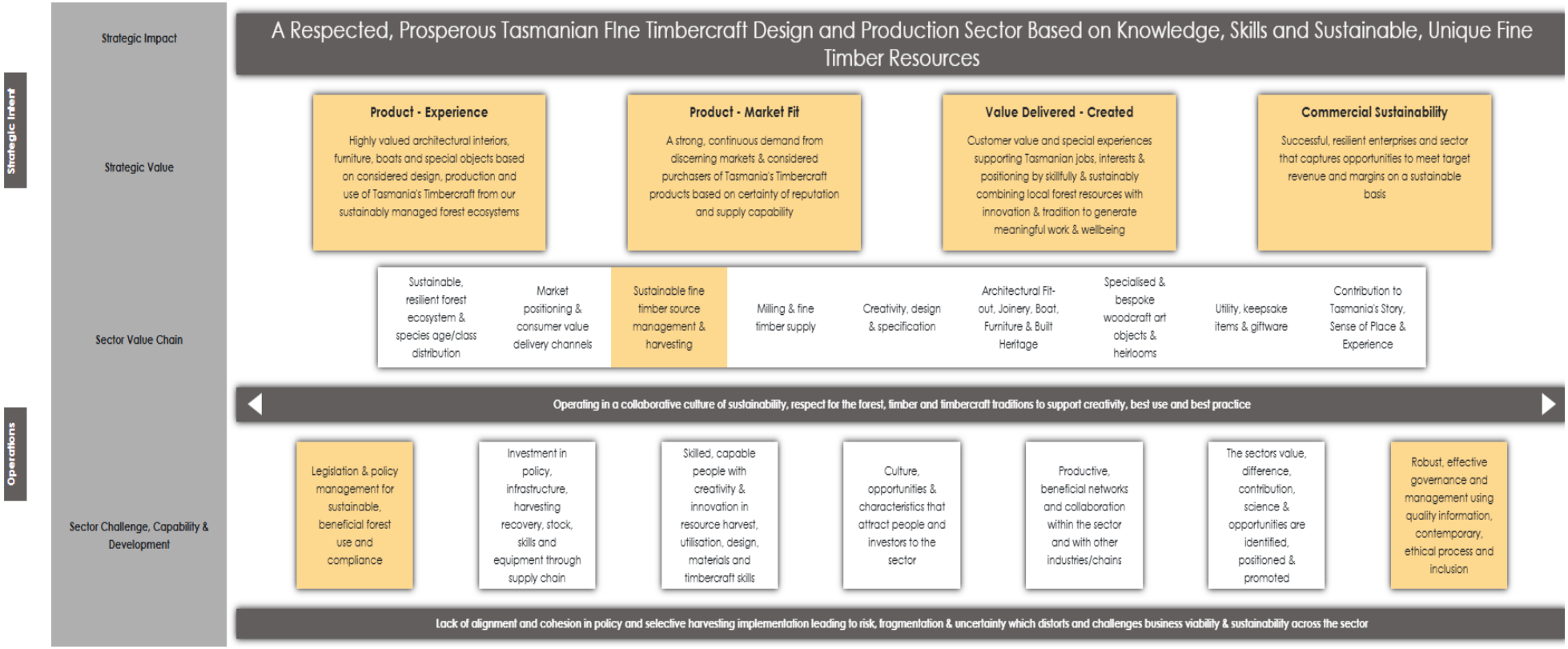


Figure 46 Tasmanian Fine Timbercraft Sector Situational Root Cause

Currently, the critical iconic special species timber component of the sector, is sustained by "workarounds" and depleting timber stockpiles, including those held in private hands (including those under houses, in sheds etc); this is not sustainable. Several businesses contributing to this report have reduced employment, transitioned to part-time, and are planning closures due to supply issues, not a lack of demand.

The quality of blackwood and eucalypt which is available to the fine timber sector is declining in parallel.

Without confidence in future log supply and quality, the other factors identified in this report become irrelevant.

8.1. Log Supply Access

Central to the challenge is transition from a supply based on native mature forest harvesting arisings to a special species zone defined supply based on selective harvesting and reforestation reflective of demand for the defined, icon species.

Selective harvesting provides for a targeted, incremental and flexible approach to harvesting, ranging from single stems to small groups of single and/or multiple species from a location in approximately 32m^3 loads. Utilising existing roads and bush tracks in conjunction with suitable machinery, the sunk cost of site establishment are minimised. As noted for some areas, Huon Pine, helicopter recovery in conjunction with ground operations is an option. Consequently, within the time frames required for seasoning, there is the ability to moderate supply and demand as the means to match the market and optimise inventories.

Site selection is a critical environmental and economic factor. This report confirms large areas of PTPZ, FPPF, Regional Reserves, Conservation Areas and private land which are accessible for SST harvesting subject to detailed analysis and FPA and land manager approval. These are harvest feasible if access conditions, volumes and overall harvest cost is commercially viable. The quality of resource, in term of fit to market, will improve through the identification, selection and identification of the stems to be harvested. This is important in achieving commercial viability, reflecting the importance of log classification skills and techniques as a component of ground truthing and harvest planning.

Depending on the site and species distribution a Forest Practice Plan (where required) and any land access or license agreement would require a multi-year life with an ability to make nominated amendments in a cost effective and efficient manner. Selective harvesting provides the combined hypothesis value of low impact, regeneration and log quality interdependency as longitudinal sustainability learning.

8.2. How log supply is managed

The Special Species Management Plan (2017) was to have resulted in certainty of supply of the nominated special species to support the timber production and fine timbercraft sector based on the

resource assessment conducted by Sustainable Timbers Tasmania. The plan has not been implemented, impediments identified in 2017 have not been addressed and consequently, in conjunction with Sustainable Timbers Tasmania harvest practice, no nominated non-blackwood special species have been harvested other than those as arisings from eucalypt harvesting.

The incremental nature of SST partial/selective harvesting delivers the agility to match species/volumes/category in a profile which can be capped in line with sustainable harvest criteria. The link between mixed timber product demand and harvest resource provides a potential to customise harvest to client need, this would be a major break with current practice but in-line with a recent private, selective harvest of blackheart sassafras, identifying a potential for a mixed model. In this model private interests could selectively harvest the nominated species from approved zones, using approved contractors. For this to be successful, it will require viable and certain rules of engagement around the regulatory instruments., giving a clear, unobstructed pathway to harvest applicants.

The preparation of "ground truthed" resource verification, nominated species zones, sustainable harvest limits and harvest performed with the aim of light touch and replanting from targeted recovery, is weather, experience and skill dependent. This would require specialist silviculture, timbercraft collaboration and skilled harvest contractors, to deliver the basic principles and practice of productive selective harvesting.

The following table summarises the scope of activities and options for individual and/or joint responsibility/engagement.

Activity	Responsibility Options		
	STT, PWS, Property Services	FPA	Private/Government owned entity
Resource Assessment & Sustainable Harvest Limits	✓		
Special Species Zone ID & Access Management	✓		✓
Forest Harvesting Plan Approval	✓	✓	✓
Selective harvest timing, species, volume	✓		✓
Contract Harvest			✓
Log & use Grading	✓		✓
Evaluation & adaptation	✓	✓	✓

Figure 47 - Key Responsibilities of a Special Species Management Entity

The aim is to progress to a system of timely resource access in terms of volume, category and quality which provides certainty and confidence in supply within established harvest limits.

The interconnection between the harvest, miller and maker at a sector level is not systematic and reflective of joint decisions, this is important in the transition to this model to optimise recovery value and value add potential.

8.3. Implementation

The following development pathways provides a summary of how to deliver the recommendations work as a systemic suite of initiatives to both improve current policy and business operations and performance and to further develop its capacity to reflect the projected growth.

The development pathways have an explicit focus on the value chain and capabilities and enablers which need to be in place to ensure it performs, is productive, resilient and sustainable. It allows development initiatives to be placed in context and to locate the roles of existing or new sector player, their individual responsibilities to be defined and to enable cohesion in their efforts.

Failure to implement and further refine the suite of recommendations will have a negative impact on the system. There is a decade and a half long history of special species sector analysis, conclusions and recommendations which have not been enacted. The current situation was foreseen, a special species management plan was developed and agreed however it has not achieved the outcomes sought.

The Development Pathways locate the project investment inherent in the recommendations, summarising how they are designed to close gaps across the operational component of the fine timbercraft model, and the result sought. It is important to note the dual focus on delivery and capacity building.

The orange coded rows and columns reflect the strategic blockers and enabler deficits. The pathways representation also provides a home for the additional recommendations which are important but dependent upon these major challenges to be resolved if they are to provide optimal return.

Within the intersecting cells, key deliverables are highlighted. This view is designed to reinforce the recommendations as a suite, if some are ignored, they will negatively impact the return from others.

The importance of collaboration, joint and separate responsibilities is evident in the development pathways representation.

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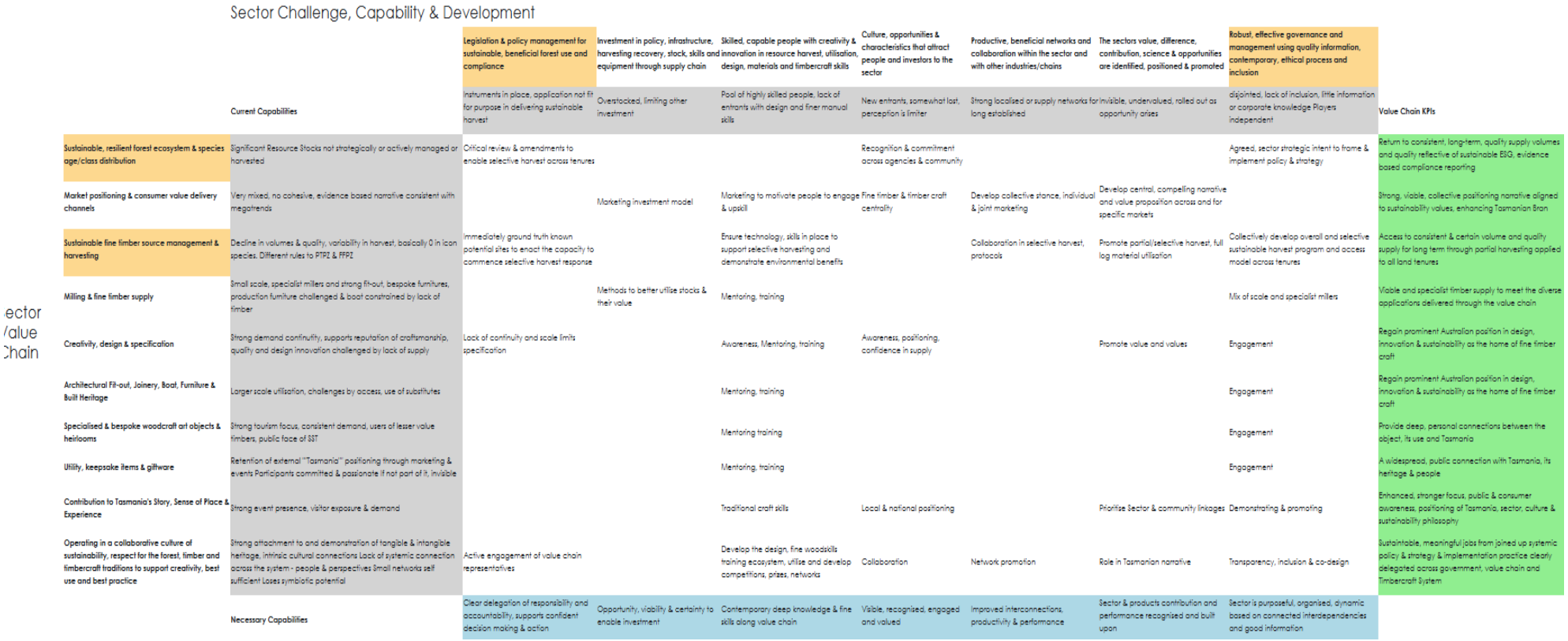


Figure 48 Tasmanian Fine Timbercraft Development Pathways

Conclusion

There is a current lack of clear policy and management strategic intent and purposeful support for the Tasmanian Fine Timbercraft sector and management of its source timbers.

The lack of systemic design and integration of policy, strategy and harvesting practice has resulted in an erosion of supply to an almost effective zero for the non-blackwood special species, an unsustainable position.

There is a critical need to develop specific purpose management mechanism that reflects and harnesses the characteristics of the sector to create certainty and flexibility of access to log material which is fit for fine timbercraft purpose and in volumes which support active and confident investment in marketing, operations, and innovation.

Recommendation

To enable this, it is recommended that government and special species timber interests:

1. *Perform detailed analysis and consideration of options for a strategic special species management structure, governance, and operational models, and*
2. *For this optimal model, identify the management & operational structure, responsibilities and access protocols necessary to deliver a demand driven selective harvest & diverse supply model which can sustainably underpin the systemic purposeful development of the Tasmanian fine timbercraft sector and its businesses*

Image courtesy of Tasmanian Shipwrights & Co

9. Community Contribution, Social License & Sentiment

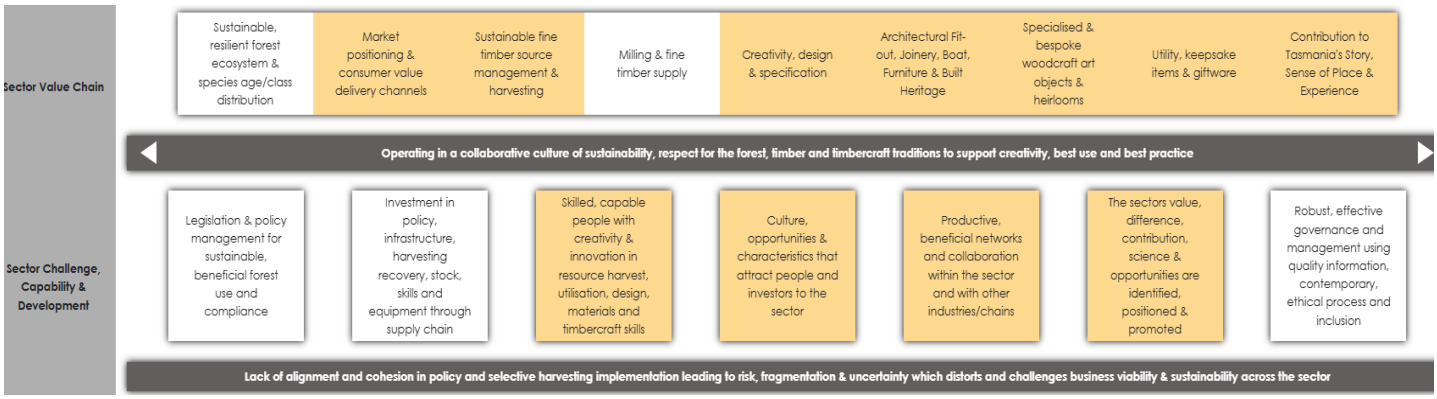


Figure 49 – Values and Flow-on Effects

Any initiatives within forest management are potentially contentious and potentially open to dispute ranging from expression of divergent opinion, through to active threat.

9.1. Digital marketing & sentiment

While the Timber Promotions Board identifies significant views and the major timber companies individually identify fine timbercraft examples, there is very little social media, digital marketing utilisation relating to SST. From the small volume the sentiment indicates an excellent reputation in the general social media community. High positive sentiment is based around:

- Tradition
- Specialist craftwork that is valued for its skill
- The rarity of the timber
- The beauty of the timber.

"Logging and the Tasmanian Government" are generally negatively viewed in this digital conversation, potentially identifying risk from the "arisings" nature of harvest.

These four 'tent poles' provide a great deal of comfort and nostalgia to potential purchasers, who have an abundance of goodwill toward the products as identified from exhaustive social media sentiment searches on the following platforms:

1. Facebook including Facebook marketplace
2. Twitter/X
3. YouTube
4. Etsy
5. eBay
6. Google
7. Instagram
8. Pinterest

An area of contention/confusion was discovered around the Chain of Custody of forestry products. This is consistent with the survey, many have a low level of awareness, see it as irrelevant, or don't care. Those operating in corporate or export markets take a more positive view, recognising it as important. This is likely to

increase as ESG compliance reporting along value chains becomes mandatory. A form of recognised certification, such as the Fine Timbers Chain of Custody System is likely to be increasingly necessary.

A search of Facebook pages for some of the main companies involved in special timbers revealed many are regularly posting, but they are not getting engagement.

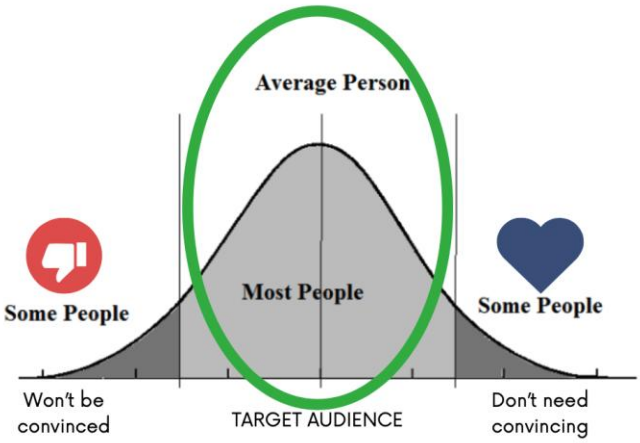
Key industry digital media mixes do not appear to be optimised to extend reach and relevance.

The hyper-localised "Facebook marketplace" indicates multiple, consistent suppliers. A range of mainland locations also indicated a distributed, informal network of suppliers, with additional content from woodworkers demonstrating technique and product. YouTube "Stories from Tasmania's Southern Forests" has the largest view (131,000) and positive commentary.

SST is largely invisible in social media, as a SOE marketing presence and makes general media primarily in relation to events and personal interest stories.

The print and television media report on protest events which occur, this does not appear to translate into general social media discussion beyond a limited group who reflect sentiments opposed to any form of native forest log harvest.

Community acceptability provides a challenge to natural resource-based sectors. The parameters around what is supported or not, alter over time. with opinion leading individuals and organisations. The following diagram is a visual representation of the distribution of sentiment on specific issues.



Some are highly negative, others positive, while other people are focused on other interests and priorities and will express views if awakened to an issue and its general alignment with their values.

The Tasmanian fine timbercraft sector, grounded in foundational legislation, the Regional Forest Agreement, and the 2017 SSMP strategy, provides a strong example of evidence-based sustainability and strong economic and social contributions to Tasmania's modern sustainable practices. The continuity of cultural heritage within this framework creates a narrative that resonates with both the market and the wider community.

9.2. Training, Knowledge & Skills Base

The performance of the sector is highly dependent upon its knowledge & skills base.

- The ability to harvest utilising the practices identified within the 2017 Special Species Strategy is dependent upon the skill to selectively identify trees with the key SST characteristics, to access them with minimal environmental footprint and safely harvest and retrieve them for transport – in a highly mechanised clearfell and plantation environment, these specialised skills are becoming increasingly rare as specialists retire or find the sector unviable. There is critical need for contractors and forest managers to have a strong understanding of the needs of millers and end users.
- Log recovery rates and sawn/sliced product conversion as identified above is a critical step. Again, this requires a deep understanding and careful/respectful application of proven techniques. This step in the value chain has seen an uptake of bandsaw technology by a wider range of businesses seeking to ensure the quality of their input and to manage the input prices.
- Log and sawn product treatment is essential to minimise waste. Some criticism has been made of storage methods allowing logs to dry-out or not be value added in time to prevent them from becoming "firewood". The arisings, rather than selective, market driven nature of harvesting contributes to this.
- Design is an essential element of the SST sector, the platform for the highest value-add craftsmanship to build upon – designer recruitment for both product and in relation to commercial fit-out diminishes with reduced supply and opportunities to demonstrate the mix of timber and design across many markets.
- Craftsmanship is being redefined with the increase of automated manufacturing and fitment of CAD-CAM components in residential and commercial fitout and in accredited training.
- Exposure to fine timbers and hand-based craftsmanship is viewed as an add-on. In schools it is linked with teacher interest, in carpentry apprenticeships, joinery is an elective chosen by around 20% of apprentices and furniture design an elective within architecture.

100% of sample contributors indicated they could not recruit the skilled employees they need. This is consistent with the findings for other industries.

Within the respondent sample, a bespoke furniture maker and a joinery have adopted in-house apprentice training, utilising TAFE to provide assessment. Other contributors' express concerns about the training system – it's scope, quality and assessment.

UTas no longer provides a focus on wood design and crafting, rather includes 2 modules within Architecture, while this is useful in creating awareness, it does not lead to the understanding of materials, design and fine, handcrafting skills as achieved through a full-time course.

Formal education and training need to reflect contemporary approaches to design and production. However, the system does not provide the fine handcrafted joinery and finishing skills on which much of the sector is founded. This is a global and national challenge, providing Tasmania with an ability to differentiate in both training and market offerings. There is a strong emphasis in Europe, the UK and North America, on the continuity of metal fabric and timber craft skills as part of a wider movement around foods and other traditional

approaches. These form the basis of meeting interests, creating jobs and tourism. Within the Tasmanian built heritage sector, people from these countries provide many of the traditional trades. Sovereign Hill in Victoria provides some offerings to the market.

As with many specialisations, deep knowledge and skill development occurs beyond the foundational education and through life. Recent recruitment of apprentices into boat building has emerged after a period of decline, however the numbers remain small.

Contributors identify the potential to provide post trade/degree programs, short courses, internships and mentoring programs to deliver this upskilling along the sector value chain. This is consistent with the above, a profile of offerings and delivery methods which meet local production needs and contribute to tourism, these are complementary.

Fine timbercraft training is provided by a small number of providers, participation is dominated by visitor markets and locals who are interested developing the knowledge and skills on a personal level. While demonstrating the tourism potential, it does not increase the State's value add capability.

Despite these challenges, the sector is attracting new entrants.

Aligned to this, is the role of design events and competitions which deliver awareness and motivation to both compete and become part of the sector.

Recommendation

1. *Key entities, practitioners and development specialists jointly consider and design options to provide a contemporary, flexible model for the delivery of fine timber harvesting, processing and fine timbercraft knowledge, skills & practice development for heritage, creative and contemporary value chain application as a priority.*

9.3. Tourism

Tasmanian Timbercraft has a strong presence in Tourism. Outlets and galleries are represented around the State contributing to the visitor experience and visitor infrastructure overall, they are important for direct sales and to extend the visit from "drive through" to "stop and look around". Wherever making demonstrations occur they hold interest.

Salamanca Market, while currently indicating low visitation, retains around 20 operators, contributing to its decade's long attraction and retention of visitor, their length of stay and expenditure. On an annual basis, the Tasmanian Craft Fair at Deloraine provides a key regional example of the ability of crafts, including timbercraft to maintain momentum and attract local and interstate visitors.

A more intensive visitor experience is delivered through residential and training programmes focused on traditional skills and wood. While the boat schools have a long history, programmes around chair making, for example demonstrate the potential in the combination of skills and heritage applications.

Since 1994, the biennial Australian Wooden Boat Festival (AWBF) maintains its contribution as a major interstate and overseas visitor attractor. The influx of some 60,000 visitors over the festival, their 10 day average stay and $26m in spend is important as is the estimated $4m spent on the boat sector in preparation.

Such events are intensive in preparation, with long lead times for organisers and contributors, followed by lengthy ongoing promotion. These have high value.

9.4. Culture, Tangible & Intangible Intrinsic Heritage

The UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage defines intangible cultural heritage as:

the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

These principles inform much policy and investment globally, overlapping key, demonstrable tangible perspectives.

As identified within AWBF evaluation and 2025 promotional document, wooden boats reinforce "*our connection to the sea - uniting people from all walks of life to engage, understand and find common ground for a shared future. Fosters a sense of belonging and full participation in the community, respecting Traditional Custodians and supporting diversity, access and inclusion*".

It further reinforces "*actively contributes to intergenerational exchange via programs that educate and promote lifelong learning. #AWBFnextgen, programs activities that build practical skills and resilience and improve mental and physical health*".

From a community capacity and engagement perspective, the evaluation identifies collaboration"*with 40+ community groups, NFPs & associations that are involved with creating the program and delivering the 4-day event, (it) runs the largest festival volunteer program in Tasmania with a 350+ dedicated team*".

These comments highlight 3 major dimensions of the value created from continuity and prosperity in Tasmania's Timbercraft sector and its interconnection with the timber species which play a special role in our culture:

1. The importance of tangible and intangible cultural connections,
2. The role of traditional skills transfer, and
3. The importance of groups of likeminded organisations and people, sharing purpose and ideals.

Cultural Heritage

Tasmania plays a key role in representing an important, if contested period in modern Australia's cultural heritage, it is an important component of the State's tourism positioning. For the most part this reflects our

tangible built and maritime heritage on which much of our positioning & reputation & attraction is based and reflected in State agency focus.

The notion of culture, how we view, value, approach and engage in "things" and the intangibles such as the traditions which have evolved and the skills which support their continuity are central to making sense of the tangible and evolving them into contemporary meaning.

As noted above, the motivations for 19% of the survey contributors lies partially in the traditions of handcraft and intergenerational transfer. These trades and manual skills have thousands of years of evolution and application. It is argued that framing these skills - "rare, vital, heritage and as makers trades[58]" elevates them to importance. While not observed as a priority in the digitised (& critical) focus of much training, they are consistent with both market interest, UNSDGs and the UNESCO Convention for the Safeguarding of Intangible Cultural Heritage (2008). The sector provides a practical vehicle and implementation application for these mechanisms.

In part this is facilitated by the range of organisations with an interest and capability described in the AWBF document. Statewide this is augmented with Men's Sheds, the Woodcraft Guild and other organisations which both utilise the SST and develop skills. Cooperative workshops such as DOT (Designed Objects Tasmania) play a key role in both production and capacity building.

While much of this is not unique to Tasmania, Tasmania is a principal custodian of these in how we approach, utilise and foster sustainable forest harvesting and its tangible and intangible benefits.

9.5. Wellbeing & Quality of Life

The benefits of SST and timbercraft are widely, geographically distributed, enabling participation and engagement at many levels, providing degrees of prosperity and importantly contribution to feelings of wellbeing. Contributors identify the value of belonging to something, pride and satisfaction in their craftsmanship and as a kind of therapy/stress relief.

Tasmania's built heritage is a key attractor, the role of fine timbercraft and use of traditional materials is central to this positioning and importantly the adaptive re-use of buildings to reflect contemporary use with respect to the past. The use of these buildings within tourism generally and for example as settings for wine and whisky offers is an example.

The importance of vocation and meaningful satisfying work in an individual's wellbeing is increasingly recognised as a determinant of overall health and family cohesiveness. The following survey responses are an indication of the sector's capacity to deliver on a range of these determinants.

[58] Allison Wain, Jesse Stein, Mitchell Cleghorn – "Rare & vital": positive terminology. Contemporary relevance and robust teaching options for heritage maker trades in Conservar Patrimonio (2023)

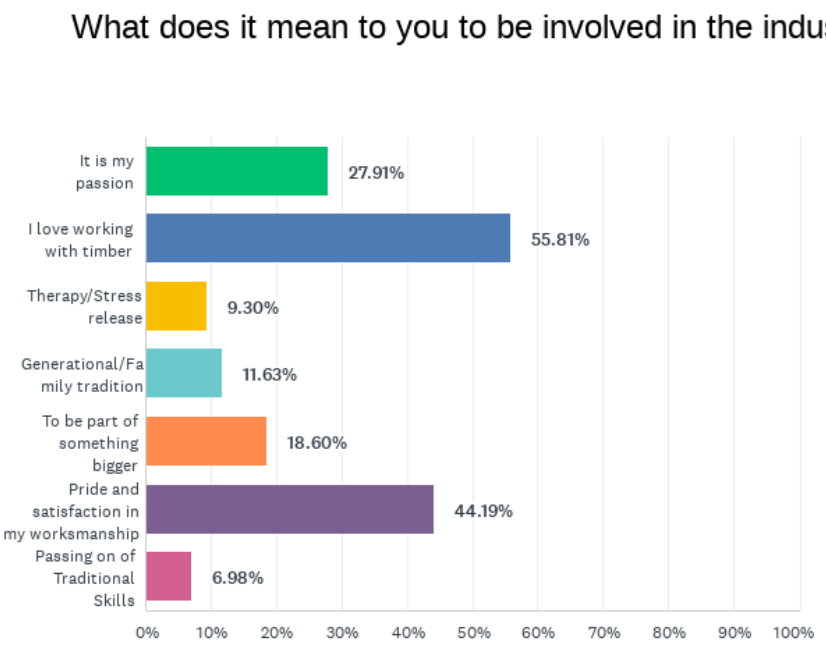


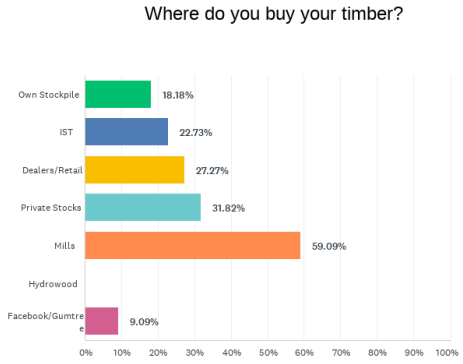
Figure 50 What does it mean for you to involved in the industry? (All Contributors)

These factors are potentially reflective of the basis on which people participate in the wide range of cultural and traditional components which are part of the sector and the foundations of its value creation.

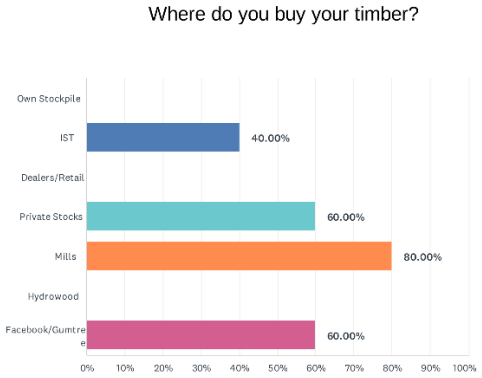
Appendices

These graphs represent the varied responses to survey questions by different sector groupings.

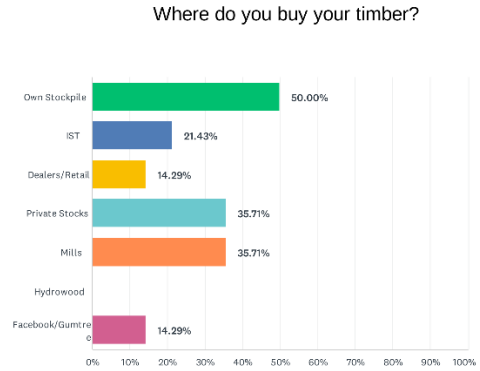
Appendix 1 - Where do you buy your timber?



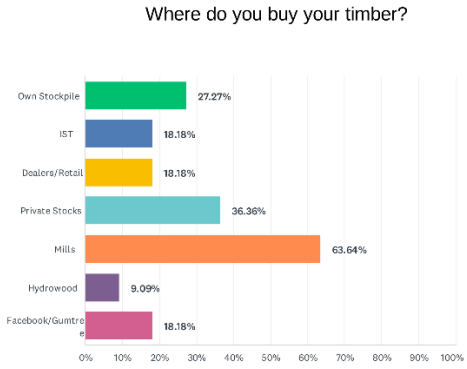
Furniture/Joinery



Boatbuilding



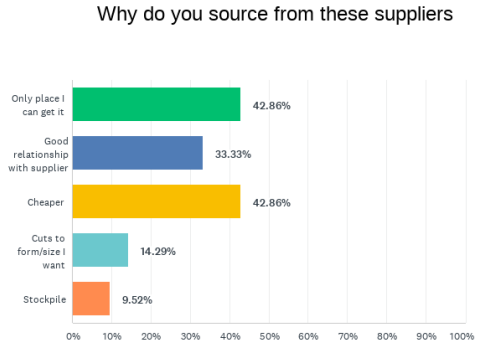
G1:Woodturners, Wood Art, Musical Instruments



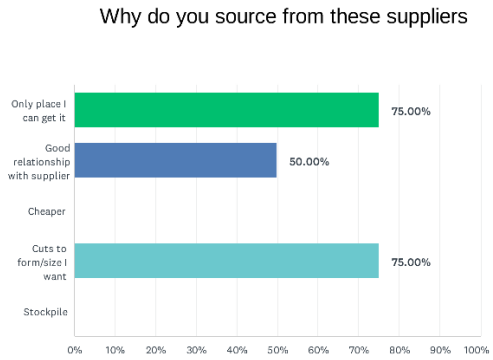
G2:Giftware, Jewellery & Kitchenware

Access (Only place it can be bought) (46.1%), and price sensitivity are indicated (cheap) (37.21%) along with relationship (good relationship with supplier) (25.58%) are the main reasons for where participants sourced their timber. Full time participants along with larger Furniture/Joiners and Boatbuilders buy through larger mills and recognised specialist supplier to meet their need for higher quality timber, cut to specific measurements. For Boatbuilders quality and sizes is the primary goal, for a cost, within viability parameters. Small millers and woodworking groups are much more focused on cost due to the tighter pricing margins, offset by their practice of sourcing much more from their own personal stockpiles, some have enough to see them through to the end of their business.

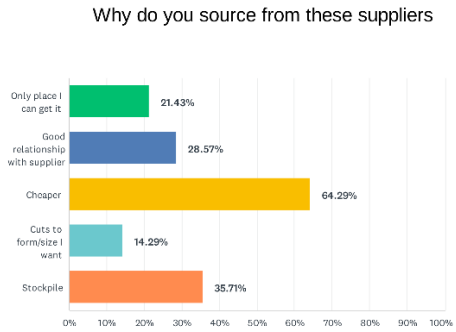
Appendix 2 - Why source from these suppliers?



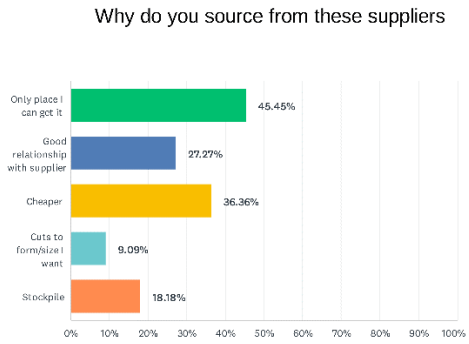
Furniture/Joinery



Boatbuilding



G1:Woodturners, Wood Art, Musical Instruments

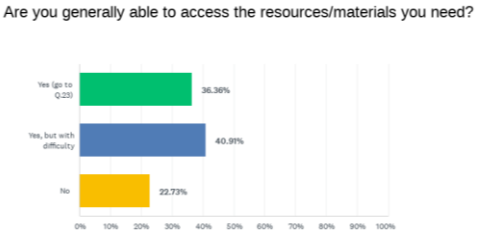


G2:Giftware, Jewellery & Kitchenware

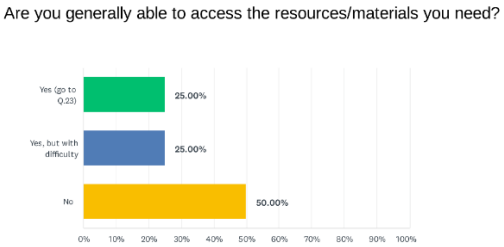
Only place it can be bought (46.1%), cheap prices (37.21%) and good relationship with supplier (25.58%) are the main reasons for where participants sourced their timber. their business.

Boatbuilding Giftware, Jewellery & Kitchenware Only place it can be bought (46.1%), cheap prices (37.21%) and good relationship with supplier (25.58%) are the Full time participants are probably more driven by reputable suppliers and looking for higher quality timber cut to specific measurements, along with Furniture/Joiners and Boatbuilders. For Boatbuilders cost is not an issue, whereas the woodworking groups are much more focused on cost due to the tighter pricing margins. They also source much more from their own personal stockpiles, some have enough to see them through to the end of their business.

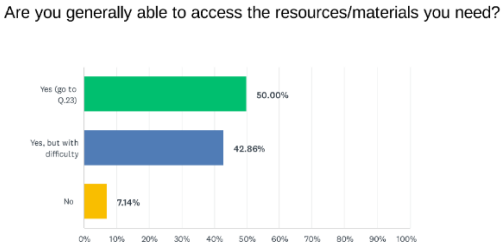
Appendix 3 - Are you able to access the resources/materials you need?



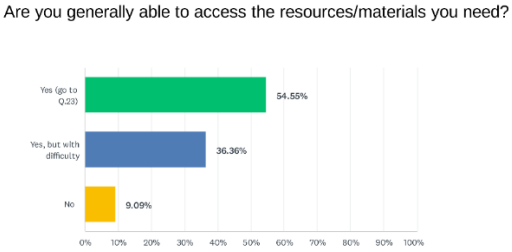
Furniture/Joinery



Boatbuilding



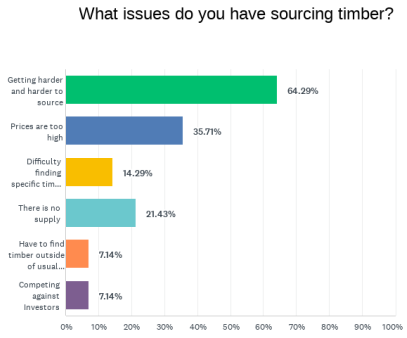
G1:Woodturners, Wood Art, Musical Instruments



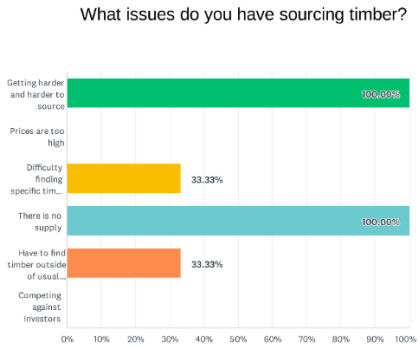
G2:Giftware, Jewellery & Kitchenware

Most participants can access the resources they need (43.18%), or they can with a little difficulty (36.36%), compared to those who can't (20.45%). Part time and the woodworking groups find it easiest. However, these but they are also the group that are not working full time, are hobbyists and the most adaptable when it come to the type of timber utilised. The groups facing the biggest problem souring timber is the more specialised users – Furniture/Joinery, 22.77% can't source what they want and Boatbuilders, 50% can't source timber.

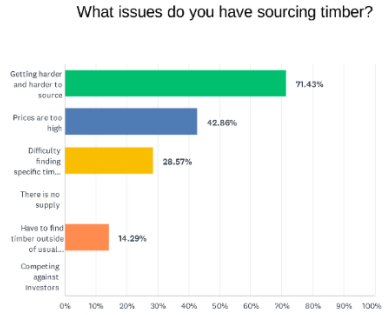
Appendix 4 - What issues do you have sourcing timber?



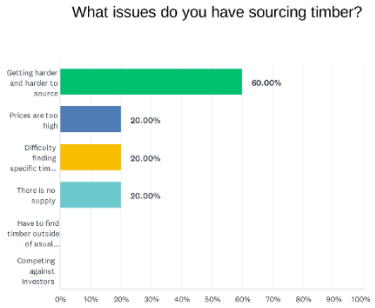
Furniture/Joinery



Boatbuilding



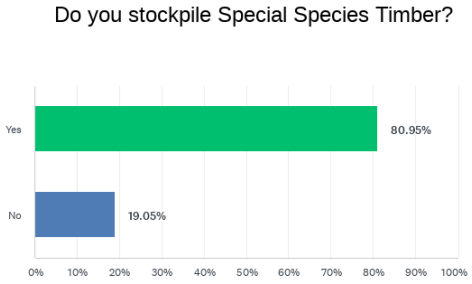
G1:Woodturners, Wood Art, Musical Instruments



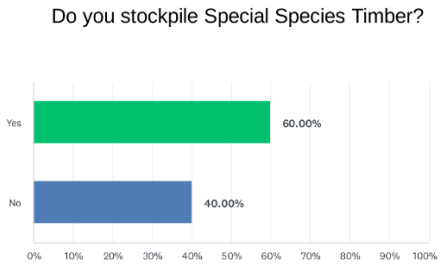
G2:Giftware, Jewellery & Kitchenware

Pricing is a major issue (32%) with participants feeling priced out of the market and resenting having to compete with participants all along the value chain and outside investors. but the main issue sourcing timber is simply that it is getting harder and harder to find (68%). There is a perception that there is no supply of timber (32%), especially when looking for a specific species such as Blackheart Sassafras and Huon Pine.

Appendix 5 - Do you Stockpile SST?



Furniture/Joinery



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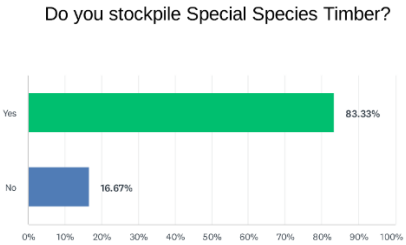
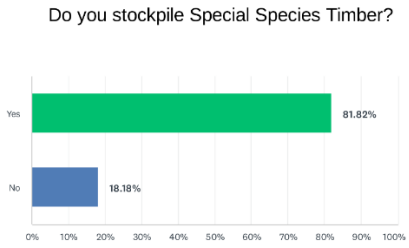


G1:Woodturners, Wood Art, Musical Instruments



G2:Giftware, Jewellery & Kitchenware

77.25% of participant's stockpile timber. Those who don't are generally limited by storage space or finance. The use of stockpiles, especially within the woodworking groups where over 80% stockpile, enables the participant to stabilise the prices of their products because they know how much they paid for it, and ensure supply.

There is also a lot of stockpiles that have been inherited that are being sold on Facebook Marketplace, Gumtree and other social media sites.

Appendix 6 - How much do you have in your stockpile?

Furniture/Joinery

Boatbuilding

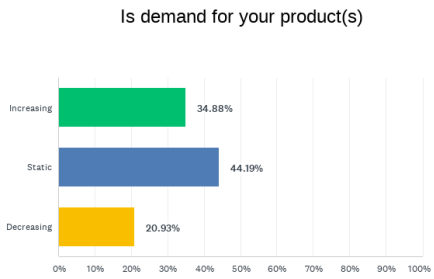
G1:Woodturners, Wood Art, Musical Instruments

G2:Giftware, Jewellery & Kitchenware

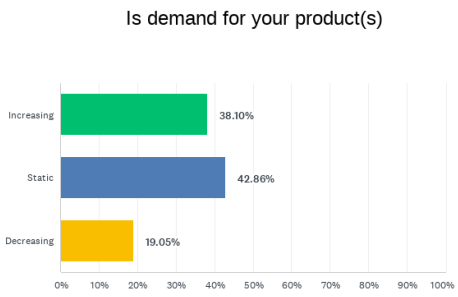
Stockpiles ranged from some makers having three sheds full to smaller quantities stacked in a corner of the workshop. The longevity of their stockpile was varied, with some makers of small volumes indicating stockpiles which will meet base demand for years. Within the timber retail sector discussions, stockholdings of around 300m3 of mixed species were identified.

While these stocks accumulate over time, for makers in particular, the stocks provide some longevity certainty to counter concerns relating to their existing supply sources.

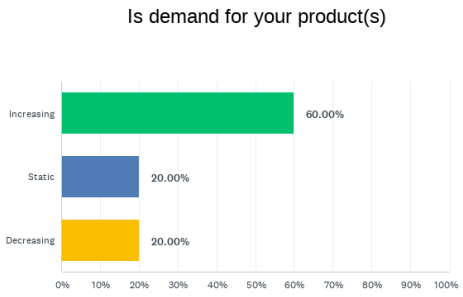
Appendix 7 - Demand for Product



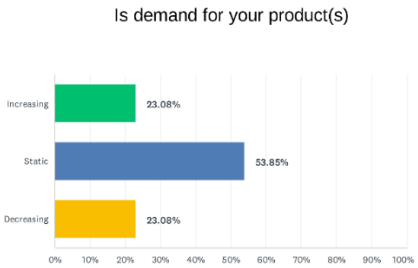
Everyone



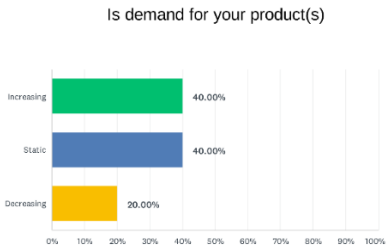
Furniture/Joinery



Boatbuilding



G1:Woodturners, Wood Art, Musical Instruments



G2:Giftware, Jewellery & Kitchenware

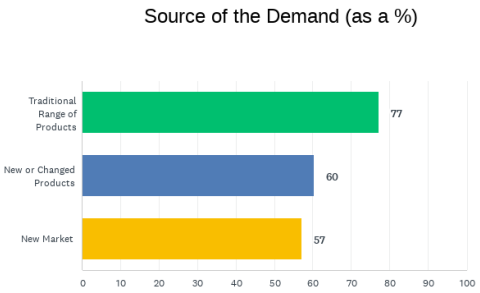
Survey respondents provided a clear indication of both unmet and increased demand potential. There is a clear and strong relationship with the importance of supply certainty and ability to realise this demand. Around 36% of respondents indicate increasing demand.

The dynamics of demand are interesting in terms of product and market potential. There is unmet demand for existing products and opportunity for new products.

Traditional products are still the dominant use of SST with 77% of respondents, however new markets (57%) and new product development (60%) reflect changing markets and customers. Furniture/joinery tend to be limited to client demands, and commission work. Boat building has shown a decline in new builds, mostly attributed to the costs involved. The main driver of boat building industry is the restoration and repair of wooden boats.

The Woodworking groups specialise in smaller items and are much more flexible in their approach to products. While they usually have a core range of products (primarily traditional), they can also respond quickly to trends by adding new or modifying products to meet customer demand.

Appendix 8 - Market Source of Demand



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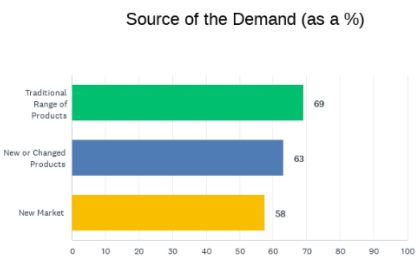
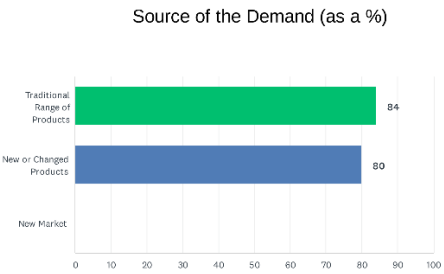
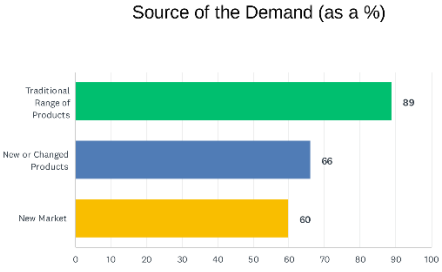
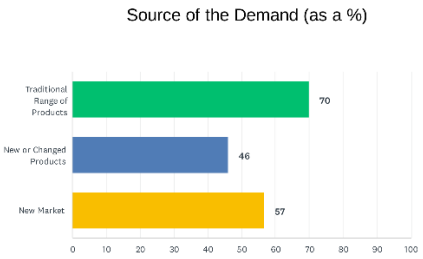




Furniture/Joinery

Boatbuilding

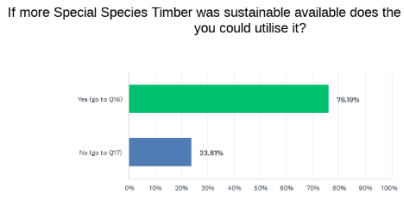




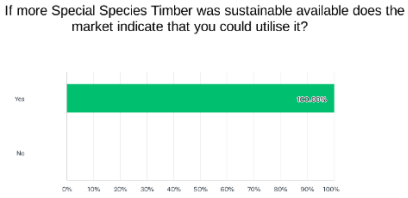
G1: Woodturners, Wood Art, Musical Instruments

G2:Giftware, Jewellery & Kitchenware

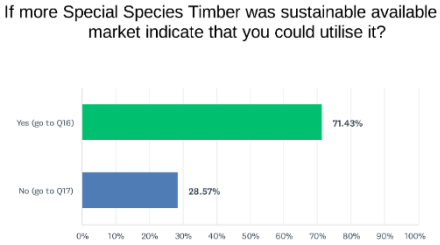
Appendix 9 - If more SST was available, does the market indicate you could use it?



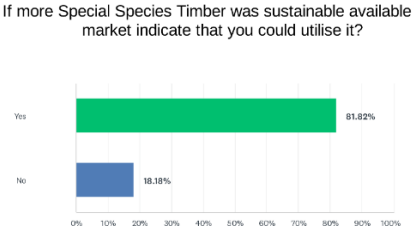
Furniture/Joinery



Boatbuilding



G1:Woodturners, Wood Art, Musical Instruments



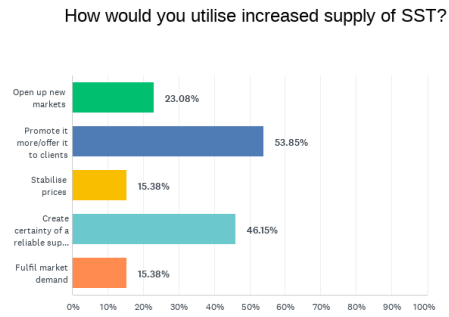
G2:Giftware, Jewellery & Kitchenware

79.07% of total respondents indicated that they could use more SST if it was made available. Of those who work full-time 88% would buy/use it compared to 66.67% part-time workers. 100% of Boatbuilders, 76.19% furniture/joiners, 71.43% woodturners, wood art, musical instruments and 81.62% giftware, jewellery and kitchenware.

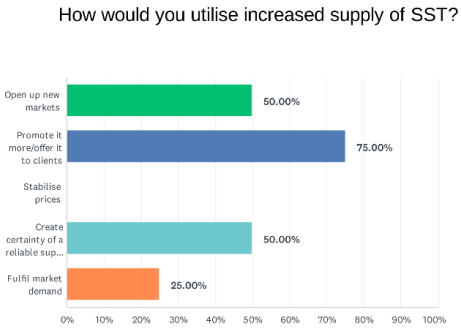
Within this context boat builders need a highly specified timber of clear grain and long lengths. Furniture/joiners tend to adapt and work with what is available or to a commission, with the client sometimes providing them with the timber to use. The nature of the business does not necessarily allow them to foretell what timber is going to be needed at any given time.

The woodworking groups use more craft wood and smaller offcuts, the timber that is not considered high value.

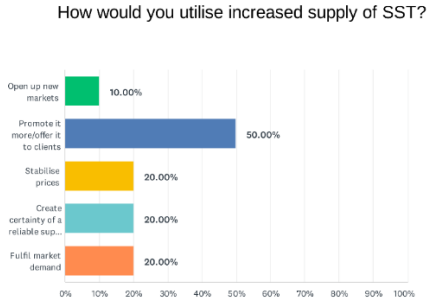
Appendix 10 - How would you utilise an increased supply of SST?



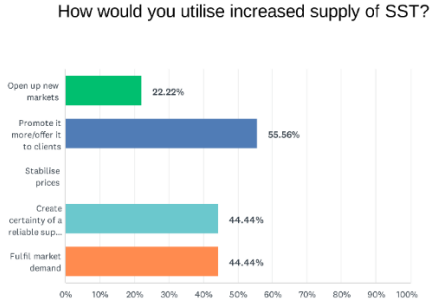
Furniture/Joinery



Boatbuilding



G1:Woodturners, Wood Art, Musical Instruments

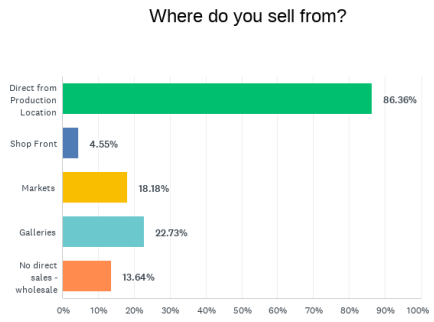


G2:Giftware, Jewellery & Kitchenware

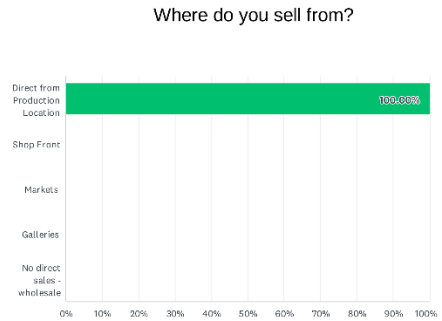
Most respondents would utilise additional SST if supply was increased by promoting it more to clients and customers (56.67%). This can be directly linked to creating a certainty of supply (40%) which allows those involved in the SST industry to be confident that they can promote, use and offer the range of SST to customers and clients and the supply is there.

47.37% full time respondents believe that it would fulfil the market demand that already exists.

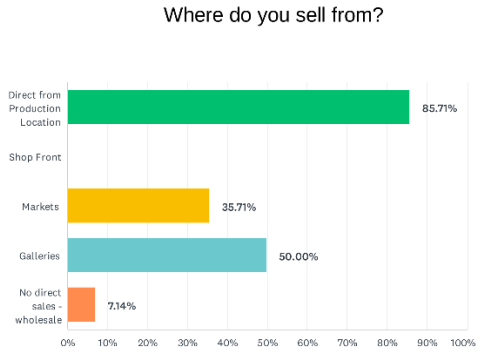
Appendix 11 - Where do you sell from?



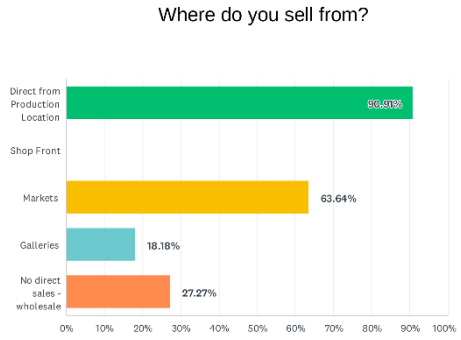
Furniture/Joinery



Boatbuilding



G1:Woodturners, Wood Art, Musical Instruments



G2:Giftware, Jewellery & Kitchenware