



**Tasmania's
Specialty Timber Industry
A Blueprint for Future Sustainability**

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**“Maximise the value of Tasmania’s
forests for the people of Tasmania
in perpetuity.”**

Objects & purposes

1. *Advocate changes to native forest management to enable perpetual supply of special species timber and high quality eucalypts. Native forest is defined for our purposes as being representative of old growth and regrowth forests that have not yet been clear-felled.*
2. *Facilitate the immediate transition from clear-fell and burning of native forests to site specific, low-impact harvesting using single stem extraction as the preferred method.*
3. *Ensure the harvest of product does not compromise ecological integrity in the area of forest being harvested.*
4. *Promote labeling of timber with site of origin and species.*
5. *Promote the preservation and development of fine wood skills and crafts and of Tasmania as a centre of excellence in the skilful and wise use of wood.*
6. *Promote the high quality work of all timber workers involved in the timber industry, from forest to marketplace.*
7. *Promote the use of solid Tasmanian native forest timbers for its highest possible value and most appropriate use with the minimum of waste.*
8. *Maximise opportunities for skilled employment in the timber industry.*
9. *Promote education of the general community in the wise management of forests and use of timber.*
10. *Lobby authorities and developers on behalf of the community to obtain the best possible outcome in accordance with TWFF purposes.*

Tasmanian Regional Forest Agreement

Between the Commonwealth of Australia and the State of
Tasmania, November 1997

Clause 60: *The State agrees to adopt the broad policy framework specified in Attachment 9 which is designed to maintain an extensive and permanent Native Forest Estate and to maintain the sustainability of the total Forest Estate.*

Clause 74: *“In recognition of the unique contribution of forest based industries to the Tasmanian economy, the Parties intend that this Agreement will have the effect of enhancing the future growth and development of Tasmania’s industries associated with forests and timber products by the implementation of the RFA Forests- Employment and Industries Development Strategy. The Parties agree to cooperate in implementing the specified actions in that Strategy as described in Attachment 12. In particular, future growth and development will be achieved through:*

- *Certainty of resource access to the forest industry*

Attachment 12:

No.15: *“Both Parties will jointly facilitate development of the resource on which the Forest industries and related employment depends by....*

- *Establishing new special species timber resources*

No.27: *“Tasmania will facilitate industry development and related employment for wood craft industries dependent on special species timbers by the following actions:*

- *Assessing the potential for additional areas of State Forest in Tasmania to be managed for the long term production of special species timbers and implementing appropriate zoning and management for those areas that are suitable.*

No.28: *“The Commonwealth will assist the State, in:*

- *Maximizing the recovery of special species timbers from Forests managed for these timbers and from all other harvested forests.*

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Foreword: The Practice of Ecologically Sustainable Development.

In the public debate about the future of Tasmania's forests many people believe that our choice lies only between forest preservation or transformation of our remaining natural production forests into Eucalypt regrowth or plantation. These are not the only two alternatives. TWFF (Timber Workers for Forests) policy position is aligned with principles of "Ecologically Sustainable Development" which means that ecosystems are maintained so all of the benefits currently obtainable from an area of forest can continue to be derived indefinitely. However, the prefix "ecologically" has almost disappeared from public rhetoric while short-term economic gains continue to occur at the expense of healthy ecosystems. "Sustainable" has become the misused compromise slogan.

We understand the views of other sections of the timber industry and the conservation movement, but we see it as our duty to leave the resolution of the three-cornered conflict between "Industrial Forestry", "Preservation" and "Ecologically Sustainable Development" to the democratic process. We embrace the possibility in the short-term that a workable balance can be struck between meeting forest reservation needs, ecologically sustainable forestry for specialty timber users, and industrial forestry. Present forest management practice in Tasmania is driven by the demands of industrial forestry. Any change from this will be an improvement, because a continuation of "business as usual" will destroy the resource base on which we and future generations of Tasmanian craftsmen will depend. If TWFF policy, based upon ecologically sustainable development, is to become a viable option in the management of Tasmania's production forests, then it must be embraced within the next two years while there is still enough area of natural forests in the timber production areas about which choices can be made.

If the democratic process is to have any chance of achieving a result that will serve the interests of our forests and all their interdependent communities then it is a process that must be fully informed, not only by the well-funded lobbyists but by people who depend on the continuing health of natural forests for their livelihood, including small saw-millers, furniture makers, boat builders, craft workers, tourist operators, foresters and scientists who have responded to our request for consultation in the production of this document. Our solution is designed to bring an end to what has become an undignified wrangle that is damaging to Tasmanian society.

Until now it has been a common practice in some forest industry media announcements to preface arguments for maintaining the *status quo* by statements or inferences that, to do otherwise, would be to contravene the Regional Forest Agreement (RFA) of 1997. While TWFF does not believe that the RFA is the ultimate solution to the public debate about Tasmania's forests, the proposals in this document are not only within the boundaries of the RFA, but are implementations of its spirit and of many of its explicit intentions (see Page 2).

Summary

This document provides a blueprint for the long-term ecologically sustainable supply of specialty timbers, such as myrtle, blackwood, sassafras and celery-top pine, for the Tasmanian furniture, boat-building, interior design and craft-wood industries.

Tasmania's specialty timber industry has a turnover approaching \$20 million per year, creates an estimated 650 full-time equivalent jobs and is a significant generator of downstream processing initiatives. It also fosters the development of fine wood skills and the creation of uniquely crafted products that are an important complement to the Tasmanian tourist industry. These contributions to our community are arguably greater than that derived from export commodity driven eucalypt production with which it is currently competing.

There are currently some significant question marks over the long-term sustainability of the specialty timber industry. Paramount of these issues is the conversion of mixed forests containing specialty timbers to eucalypt regrowth or plantation forests on rotations too short to sustain slow growing specialty timbers. Other supply sustainability issues are: stringent timber specifications which currently lead to fine timber being wasted; the myrtle wilt pathogen which causes dieback; and reduction in resource potential due to wildfire.

Forestry Tasmania's current system of specialty timber supply, the STMU (special timber management units) system is inadequate as it stands. The system is heavily reliant on ongoing access to the rainforests of northwestern Tasmania. The document argues for the abandonment of the current divisive strategy of proposing the sourcing of specialty timbers from predominantly pure rainforest areas of world conservation significance, thus setting users of special timbers against conservationists. Instead it proposes the sourcing of special timbers from mixed wet forests¹ throughout the State. It defines the remaining argument as a discussion, not only about which areas may be harvested, but also the method of harvesting in the timber production areas for the benefit of all of the Tasmanian community rather than a small part of it. The legitimacy of all points of view and the complexity of the problems are recognised in the report, and it recommends a course of action that will actually achieve the objectives of the RFA while avoiding its current divisive effect on Tasmanian and Australian society.

The forests mapped in this blueprint comprise 62,200 hectares of State forest containing mixed forests (extant and logged sites) and blackwood forests outside of areas earmarked for reservation by the broader conservation movement. The areas mapped form the basis of TWFFs proposed new Specialty Timber Zones.

The following parameters were used to derive a set of environmental domains defining the areas in which (given the absence of fire frequencies favouring development of wet sclerophyll species) the development of mixed forest species of suitable size are likely to occur:

- sites where rainfall is generally above 1,300 mm;
- sites below altitude 600 m;

¹ Forests outside the Community Reserve Agenda

- sites with a *Eucalypt* height potential of greater than 34 m.

We emphasise that the criteria of altitude and rainfall and soil composition, while defining the domains in which special timbers are likely to be found, does not define the areas in which they *will* be found. This will depend on other environmental and historical factors (e.g. wildfires) over the past 500 years. Management of special timbers, where they are found to exist and flourish already, should be privileged over other species, even on a very small scale, and this may well be achieved for long periods by leaving them alone.

The forests mapped in this blueprint:

- remove the supply focus for specialty timbers away from environmentally contentious areas such as the Tarkine rainforests thereby providing greater resource security to Tasmanian specialty timber users
- provide for a more equitable distribution of specialty timber management forests across the State than does Forestry Tasmania's STMU system.

The blueprint provides management recommendations, which are summarised below, so that the specialty timber sector can be maintained into the future.

Establish a new management structure

The responsibility for managing forests for specialty timber production would rest with a Specialty Timber Commission created under a new Act of Parliament - the Specialty Timber Commission Act. The Commission would be comprised of representatives from: the specialty timber industry, sawmillers, Tasmanian beekeepers, natural resource management groups, conservationists and Forestry Tasmania, and should have the authority to co-opt other relevant stakeholders. The Commission would employ appropriate professionals to prepare forest management plans that identify ecologically sustainable timber yield, ecotourism potential, and issues relating to cultural heritage, honey production and ecosystem services such as water yield, habitat and biodiversity.

The major management objective would be to restrict timber harvest to an identified ecologically sustainable harvest determined by assessing the annual growth rate of the specialty timber trees and setting harvest volumes at a discount below the estimated annual timber yield of the forests.

Review specifications

This document recommends the development of new specialty timber specifications. Current specifications are a product of a clearfelling regime, which means that classification occurs only after the trees are cut down. This ensures that there are many immature logs which achieve none of the existing grades of "commercial" timber. While some "outspec" logs are milled, many are either burnt or chipped. The new specifications would be made on a tree by tree basis during the harvesting process, shifting the focus to which trees are appropriate to harvest; for example those of a predetermined commercial size (nominally 40 cm). Such a system would require that trees not meeting the specification, or deemed important as habitat trees, would be required to be left standing.

Review allocation criteria

This document recommends that future allocation of specialty timbers must be determined by:

- the efficiency of sawmills to recover the maximum amount of timber
- the ability to value-add and downstream process specialty timbers within Tasmania
- preparedness or ability to pay for the timber through an auction system which would favour buyers with high value end uses.

Such a system would favour the use of specialty timbers within Tasmania for applications such as furniture, design, veneer products, domestic and commercial interior decoration, boat building or craft. Encouragement of high value uses would reduce commercial pressure for conversion of forests rich in specialty timbers to eucalypt forests and offset the increased cost of extraction under a selective harvesting system.

Harvest selectively

Tasmania's specialty timbers (with the exception of blackwood) have evolved to regenerate without catastrophic disturbances such as fire and regenerate much more effectively following small-scale disturbance of the forest floor. Clearfelling is not an appropriate harvesting method when the intention is to regenerate specialty timber species.

The blueprint recommends effective capture of skills and experience from operators who have selectively harvested timber for many decades. There is a great deal of expertise within the Tasmanian community and overseas on low-impact timber harvesting methods. Additionally, specialty timber licenses could be issued preferentially to operators with portable mills who are able to process logs in the forest.

Establish chain of custody and certification

Tasmanian businesses have experienced difficulty in selling timber products into overseas markets due to the lack of a certifiable supply chain and because they are competing in markets where consumers are increasingly demanding certified product and can obtain it from other countries. The blueprint recommends that product certification and chain of custody labelling needs to be made mandatory on Tasmanian forest products sourced from genuinely sustainably managed forests. Certification is likely to be a requirement of market access in the future and such a system will give Tasmanian specialty timber products a market advantage and price premium.

Consultation – key findings

This document was first completed as a consultation draft in December 2003 and was released, with a media statement, for public comment. The report was made available on our website (www.twff.com.au) and distributed, with a covering letter, to groups whom we believed to be major stakeholders in the issue. In an effort to broaden the exposure and understanding of the report, Timber Workers for Forests also presented three public forums, one each in Burnie, Launceston and Huonville in March 2004. Minutes were taken from the public discussions of each meeting. In addition to forums and written submissions received, interviews were conducted with sawmillers, furniture makers, conservation groups and a representative of Forestry Tasmania before the final draft was written.

The consultation period served to refine the content of the report, correct inaccuracies and contribute additional suggestions for improved management of specialty timbers, though these suggestions may not necessarily represent the specific objectives of Timber Workers for Forests.

Consultation reaffirmed the complexity of the debate that surrounds forestry issues in Tasmania. Consultation revealed the following key themes:

- There is significant concern about the current management of Tasmania’s specialty species timbers on public land.
- Whilst Forestry Tasmania is managing specialty timbers, the system appears to lack rigour, accountability and transparency. The perceived reasons for this include lack of motivation, inadequate identification and use of internal and external expertise, diversion of energy away from forestry and domination by big business.
- The specialty timber industry is largely comprised of small to medium sized businesses with a range of vested interests upon which livelihoods depend. This results in a variety of opinions as to how to improve the system.
- Despite differences of opinion concerning detailed solutions, there is common recognition that the management of specialty timbers suffers from its peripheral importance to Forestry Tasmania and to the State Government.
- Tasmania’s forestry debate has a legacy of divisiveness, fear and distrust. This climate hinders open and co-operative consultation.

Specific suggestions about the management of specialty timbers included, but were not limited to:

- Change of regulations and management to include very special species including mature eucalypts, cheesewood (*Pittosporum bicolor*), goldeywood (endemic) (*Monotoca glauca*), native olive (endemic) (*Notelaea ligustrina*), musk (*Olearia argophylla*), native Plum (endemic) (*Cenarrhenes nitida*), horizontal (endemic) (*Anodopetalum biglandosum*), tea tree (*Leptospermum spp*), silver wattle (*Acacia dealbata*), and banksia (*Banksia marginata*). These species are currently not acknowledged and are treated as waste.
- The training and appointment of specialty timber forest workers to provide ‘on the ground’ assessment and management of special species and very special species in both Special Timber Management Units (STMU) and clearfell coupes. These workers should identify and assess

STMU coupes, and areas of special species within clearfell coupes, conduct volume distribution and write timber harvesting plans. In clearfell areas, these workers would be trained to instruct contractors regarding special species, and identify and stockpile special species from the landings.

- The provision of an appropriate storage yard to allow timbers to be dried and stockpiled, rather than flooding the market and being sold at fire sale prices. Forests and Forest Industries Council has already been granted \$0.2 million under the RFA to stockpile boatbuilding boards in this way.² Extending this ‘pantry’ of woods would ensure a larger variety and more secure supply of special species craftwoods for craftspeople.
- Maintain stands of live specialty species trees as a ‘green bank’.
- Greater recovery of special species timber, including mature eucalypts to include, for example, the root system and branches of trees.
- Stricter regulation of Forestry Tasmania / private company joint ventures to ensure the appropriate management of specialty timbers in line with the RFA, so that the interests of large private companies do not take precedence over the interests of the public and all other stakeholders.

The result of consultation has emphasised the complexity of the interests and concerns of the public and special species users and reinforced the primary recommendation of this paper that the establishment of a Specialty Timbers Commission is required for truly sustainable management of these species in the long term interests of Tasmania.

In view of the wide diversity of opinions expressed by users of specialty timbers, partly because of the divisive legacy of the events of the last three decades of public debate over forest management, TWFF recommend that the initial action of the Specialty Timbers Commission should be to appoint an expert independent facilitator, in order to bring the parties (sawmillers, beekeepers, furniture designer/makers, craft workers, foresters and experienced bush workers with specialist knowledge) together to manage the co-operative process.

Acknowledgements

The Tasmanian Conservation Trust is acknowledged for financial and technical support in preparing this document. Members of Timber Workers for Forests and Dr Robert Mesibov are thanked for reviewing consultation draft material. We thank Matt Dell for finalising the maps. We would also like to thank those people who contributed to the consultation process by submitting a written response or graciously taking the time to be interviewed.

² Inquiry on the Progress with Implementation of the Tasmanian Regional Forest Agreement(1997), Background Report, April 2002, Resource Planning and Development Commission, p.126

1 Introduction

Tasmania is blessed with some of the world's finest forests and timbers, many of which are unique to the island. The character of the island's forests and timbers owe much to Tasmania's isolation, geological history, cool temperate climate and exposure to consistent rain-bearing westerly winds. The forests of Tasmania contain relics of the temperate forests that flourished around 45 million years ago on the super-continent Gondwana, a continent that included Australia, Antarctica, New Zealand, South Africa and South America.

The specialty timbers referred to in this report are found in rainforest and as understorey trees in wet eucalypt forests which occur in areas where the annual rainfall exceeds 1,100 mm. Perhaps the best known of Tasmania's specialty timbers are the renowned boat building timber - Huon pine (*Lagarostrobos franklinii*) and the prized furniture timber - blackwood (*Acacia melanoxylon*). While the future prospects for Huon pine supply now appear tenuous due to past over cutting and dwindling stocks, the future for blackwood is brighter as it is the only Tasmanian specialty timber that is fast growing and currently grown in plantations, although the difference in quality between plantation wood and old growth wood is yet to be determined and may be a significant issue in the future. Other notable Tasmanian specialty timbers are myrtle (*Nothofagus cunninghamii*), celery top pine (*Phyllocladus aspleniifolius*), and sassafras (*Atherosperma moschatum*).

The forest cover of Tasmania has been altered by human activity over many centuries. The more fire-sensitive forest types we retain today are those that: i) escaped repeated burning by Aborigines ii) escaped clearing or repeated burning by Europeans for establishment of farms, mines and plantations, and iii) escaped devastating hot fires lit by Europeans. Most of Tasmania's useful timbers were harvested and used extensively in the early 19th century. There is a well-documented 175 year history in Tasmania of selective harvest of rainforest and understorey timbers. Today, Tasmania's specialty timbers are valued highly for furniture making, craft, panelling, joinery, flooring, boat construction and artwork, however there are some perceived threats to the long-term sustainability of these timbers.

This blueprint identifies:

- the current contribution of the specialty timber industry to Tasmania in terms of socio-economic factors, downstream processing opportunities and positive image
- the volumes and sources of timber that the specialty timber industry currently uses
- current threats to the long term sustainable supply of specialty timbers as promised by the RFA (see page 2 - RFA extract);
- new 'Specialty Timber Zones' to sustain future supply of specialty timbers
- management prescriptions for forests holding specialty timbers.

In 1990, the Forestry Commission (now Forestry Tasmania) prepared a draft specialty timber management plan. In this plan it was stated - 'supply of the main specialty timbers will virtually cease from 2020 unless rainforest is logged' and 'very slow growing specialty timbers cannot be managed for sustained yield'³. Since then, Forestry Tasmania has identified a system of Special Timber

³ Forestry Commission (1990). Special timbers draft management plan and issues paper.

Management Units (STMUs) for the ongoing supply of specialty timbers. There are currently 143,000 hectares of STMUs located primarily in rainforests of north-western Tasmania.

This blueprint identifies some problems with the STMU system, particularly in relation to issues such as accessibility and location within environmentally contentious areas such as the Savage River pipeline corridor rainforest. Given this situation, this blueprint proposes an alternative system of forests for the long-term management of specialty timbers. The blueprint provides management prescriptions which are believed to be ecologically sound, ethical and consistent with the RFA. The foundation of this draft blueprint is ecological sustainability, which is fundamental to the ongoing health and capacity of forests to produce quality timber and sustain a healthy, reputable and uncontroversial timber industry in perpetuity without compromising water resources, soil structure, habitat or biodiversity.

2 The Specialty Timbers

Specialty timbers referred to in this report are myrtle, blackwood, sassafras, celery top pine, leatherwood, Huon pine and King Billy pine. Huon and King Billy pines have been categorised as non-commercial species as past over-cutting and reduced distribution due to wildfire has dramatically reduced their availability and sustainable yield. During consultation it was revealed that other “very special” species are being largely ignored and treated as ‘slash’ or waste. These timbers are a mixture of endemic and native trees including, but not limited to, cheesewood (*Pittosporum bicolour*), goldeywood (end.) (*Monotoca glauca*), native olive (end.) (*Notelaea ligustrina*), musk (*Olearia argophylla*) native plum (end.) (*Cenarrhenes nitida*), horizontal (end.) (*Anodopetalum biglandosum*), tea tree (*Leptospermum spp*), silver wattle (*Acacia dealbata*), and banksia (*Banksia marginata*).

2.1 Commercial species

2.1.1 Blackwood

Blackwood (*Acacia melanoxylon*) occurs throughout Tasmania’s native forests, is a common understorey component of wet eucalypt forests and reaches its greatest development in swampy soils of north-west Tasmania. Blackwood is a fast growing tree reaching 40 m, is easy to grow and, because it reaches maturity as commercial timber in 60 years, is the only Tasmanian specialty timber tree that is considered for plantation production, although browsing by native animals and inferior timber quality are significant disadvantages as compared to blackwood grown in native forests under natural conditions.

Blackwood is a hardwood that is easily worked, stable and long lasting, ranging in colour from light brown to black, sometimes with golden or reddish tints. Blackwood is a premium furniture timber and is also used for panelling, cabinet work, veneers and to a lesser extent musical instruments such as pianos. Some blackwood is currently chipped and pulped.

2.1.2 Myrtle

Myrtle (*Nothofagus cunninghamii*) is the dominant rainforest tree in Tasmania and occurs as a sub-dominant in mixed wet eucalypt forests. Myrtle occurs from sea level to sub-alpine areas where the rainfall is greater than 1,150 mm per annum and grows mainly in the west of the State with smaller areas on the north-eastern highlands. Under optimal conditions myrtle can grow to a height of 50 m and reach an age of 500 years.

Myrtle timber is very strong and ranges in colour from pink to rich red. Myrtle has several striking feature patterns (known as tiger-myrtle, raindrop, fiddleback and flame-myrtle) which make it sought after for decorative work. The timber is prized for furniture, veneers, cabinet-work, flooring, panelling and craft, particularly a form known as 'deep red myrtle'. Deep-red myrtle is the most sought after timber. The colour is thought to be due to a fungus living in the wood, although this colour fades with time once the timber is cut. Deep-red myrtle is most commonly found in old trees on fertile soils.

2.1.3 Celery top pine

Celery top pine (*Phyllocladus aspleniifolius*) is a Tasmanian endemic conifer reaching a height of 30 m and ages of up to 900 years. Celery top pine is found in wet sclerophyll forests and rainforests often on poorly drained sites or where soil quality is poor. As the tree is slow growing its timber has a hardness, strength and density not commonly expected in conifers. The timber has a yellow to golden colour, is durable and easy to work (except for knots which are very hard). Hence celery top pine is favoured for wood-craft, boat building, furniture and flooring. In the early days it was used for railway sleepers and is now often sought for use as feature building poles.

2.1.4 Sassafras

Sassafras (*Atherosperma moschatum*) is widespread and abundant in rainforests, a dominant tree in fern gullies and grows as an understorey species in wet eucalypt forests across the State. The tree, which grows to a height of 45 m and reaches an age of up to 200 years, is also found in Victoria and New South Wales. Sassafras is a white to creamy grey timber, however if infected with a staining fungus, blackheart sassafras is produced. Blackheart has dark brown or black streaks running through the wood which makes it highly prized for decorative work in panelling, craft, furniture, veneers and cabinet making. The timber is light and strong and easily worked. Sassafras is also targeted as a pulping species.

2.1.5 Leatherwood

Leatherwood (*Eucryphia lucida*) is a small endemic Tasmanian tree which may reach a height of 30 m. Leatherwood occurs frequently in rainforests and mixed forests where the rainfall is high. The tree has conspicuous white flowers, the nectar of which is an important source of honey.

Leatherwood produces strong fine-textured timber with attractive patterns and colouring when fungal stained (similar to sassafras). The main timber uses are in furniture and woodturning. Production for

timber uses is small because trees for honey production take precedence, although many beekeepers are concerned about the long-term sustainability of their industry due to the loss of leatherwood trees through clearfelling of mixed forests.

2.2 Non-commercial species

2.2.1 Huon pine

Huon pine (*Lagarostrobos franklinii*) is endemic to Tasmania and is found in rainforests, fringing rivers and along shores of lakes in south-west Tasmania. Macro-fossils and fossil pollen of *Lagarostrobos* demonstrate that the genus was once widely distributed across the higher latitudes of the Southern Hemisphere, including Antarctica. There has been a substantial reduction in the distribution of *Lagarostrobos* and its stronghold is now Tasmania, although there is one species in New Zealand⁴. Given ideal conditions and absence of fire, Huon pine can reach thousands of years of age.

Huon pine is prized for boat building, furniture, craft and joinery work. It is soft and smooth, oily to the touch, highly durable and bends well. As a boat building timber Huon pine is second to none. The timber contains a characteristic aromatic oil which makes it extremely resistant to rot and resistant to many marine pests.

Unfortunately, due to heavy harvesting and over-cutting in the past, coupled with the fact that Huon pine trees grow too slowly to enable a sustained harvest of commercially viable timber, the scope for Huon pine usage is now strictly limited and will continue to decline as the timber becomes more scarce. In 2003 Forestry Tasmania's stockpile of salvaged Huon Pine logs at Lake Gordon was severely damaged by a wildfire further depleting stocks. Poaching of this rare and valuable timber is a significant problem.

2.2.2 King Billy pine

King Billy pine (*Athrotaxis selaginoides*) is a member of an ancient group of trees related to the giant redwoods of California. Although the tree reaches an age of 1,000 years in ideal conditions, it is only a medium sized tree, attaining a height of 30 m. The genus *Athrotaxis* has only 3 representatives, all confined to Tasmania, and they are the only members of the Taxodiaceae family in the southern hemisphere. King Billy pine occurs in mountainous areas of western and central Tasmania where the rainfall is high (>1,250 mm).

King Billy pine timber is light, fine textured, durable, richly coloured (pink to red) with a distinctive aroma. The timber bends well and is valued for joinery, cabinet work and boat building. It has also been used for oars and is prized for use in musical instruments and very special furniture. King Billy pine is a fine splitting timber. Many of Tasmania's original highland bush huts were constructed from split King Billy Pine, Waldheim Chalet at Cradle Mountain is a notable example.

⁴ Felton, K., Jarman, J. & Kantvilas, G. (1991). New site records for Huon pine and King Billy pine. *Tasforests* 3, p 33-40.

King Billy Pine has been the victim of gross over-cutting and decimation by fires. Poaching of remaining accessible trees remains a real problem. Supplies for timber are now limited to salvage. The only remaining large stands are reserved in the World Heritage Area.

3 Specialty Timber Industry

3.1 Overview of economic significance

The contribution of special species sawn timber and veneers to the Tasmanian economy has been estimated at \$20 million per year.⁵ Use of these products in value-added applications such as furniture, boat building and interior design increases the economic contribution by four to six times⁶, however a majority of sawn timber and veneer produced in Tasmania is exported for production of higher value-adding applications elsewhere (**Sections 3.3.2 & 3.3.3**).

Based upon a survey of specialty timber users undertaken by the Furniture Design Association of Tasmania there are an estimated 339 commercial users, 394 semi-commercial users (income earning hobbyists) and a total of 642 full-time-equivalent jobs in the sector⁷.

The estimated annual turnover of the commercial and semi-commercial sectors is \$10.6 million and \$8 million respectively⁸. Turnover per cubic metre of timber used is highest for 'design driven' enterprises (\$21,000/m³), almost double the turnover for 'production driven' enterprises (\$12,500/m³) and significantly higher than for semi-commercial users (\$2,500/m³)⁹.

3.2 Supply and recovery volumes

The Forests and Forest Industry Strategy (FFIS)¹⁰ supply target for blackwood logs is 10,000 m³ per year, for Huon pine is 500 m³, and for deep-red myrtle and sassafras combined 5,000 m³ per year. The annual recovery of specialty timber sawlog has reflected the FFIS target. Approximately 20,000 m³ of specialty timber sawlog is recovered each year from State forest (20,468 m³ in 2002/03¹¹), although it is unlikely that this quantity is ecologically sustainable as it currently relies on logging rainforest. The timber has an average mill-door-landed-value (royalty, handling and cartage)¹² of \$100 m³. Detail of the source and category of the specialty timbers recovered is given in **Table 1** although it must be

⁵ PLUC (1996). Tasmania–Commonwealth Regional Forest Agreement: social and economic report, Background Report Part D, Public Land Use Commission, Hobart.

⁶ Joint RFA Steering Committee (1997). Options for the Tasmania–Commonwealth Regional Forest Agreement: a strategic approach, Section 3.2.2.

⁷ Brueckner Leech, "Special Timbers Supply Chain Review", Tasmania Department of State Development, Business Tasmania, August 1999, p5.

⁸ Ibid, p5.

⁹ Ibid, p5.

¹⁰ "Secure future for forests and people". Forests and Forest Industry Strategy, Sept. 1991.

¹¹ Forestry Tasmania annual report 2002/03, p65.

¹² Forestry Tasmania sustainable forest management report 2001/2002, p56.

recognised that unofficial recovery and trade also occurs which will only be curtailed when a thorough ‘chain of custody’ or certification system is in place – refer **Section 6.4**.

Table 1: Summary of specialty timber recovery 1999/2000¹³

Product	Supply zone	Category 4 (top grade sawlog) m³	Utility (lower grade sawlog) m³	Outspec (un-millable) m³	Total m³
Huon & King Billy pine	Crown forest land	350	300	300	950
Blackwood	Circular Head supply zone	4,315	1,850	2,280	8,445
Myrtle, sass, other	Northwest District	4,500	2,100	1,500	8,100
Blackwood	Murchison supply zone	500	300	100	900
Mixed specialty timber	Bass & Mersey Districts	1,450	250	150	1,850
Mixed specialty timber	Derwent & Huon	1,770	250	125	2,145
	Total	12,885	5,050	4,455	22,390

Specialty timber sawlogs are classified as ‘category 4’ logs or as ‘utility logs’. Defective logs are classified as ‘outspec’ (see **Section 4.4**). Logs are made available by either administered supply or tendered supply. Administered supply is formalised under ten year contracts between Forestry Tasmania and a number of businesses and accounts for about 75% of specialty timbers sawlog and utility log supply from State forest on a state-wide basis¹⁴. Forestry Tasmania has current administered contracts to supply 13,790 m³ of category 4 sawlogs and 2,043 m³ of utility logs to eight sawmillers throughout the State each year¹⁵. Approved tenders and proposed spot sales provide for the supply of up to 2,865 m³ of category 4 and 3,357 m³ of utility logs while about 5,000 m³ of outspec logs are expected to be produced¹⁶.

The Forests and Forest Industry Strategy (FFIS) supply target of 500 m³ per year for Huon pine is currently met from a variety of sources. The stockpile at Lake Gordon provided 100 m³ per year which would have lasted for another 40 years¹⁷ prior to the wildfire incident of 2003 which damaged timber in the stockpile. The balance of the Huon pine yield comes from the salvage of logs after floods and the recovery of fallen timber in places such as Teepookana, near Strahan¹⁸. Forestry Tasmania’s stockpile of Huon pine will contribute to the market demand of 500 m³ per year for a further 10-15 years¹⁹.

¹³ From: Brueckner Leech, “Special Timbers Supply Chain Review”, Tasmania Department of State Development, Business Tasmania, August 1999, p24.

¹⁴ Brueckner Leech, “Special Timbers Supply Chain Review”, Tasmania Department of State Development, Business Tasmania, August 1999, p23.

¹⁵ Ibid, p23.

¹⁶ Ibid, p23.

¹⁷ Joint RFA Steering Committee (1997). Options for the Tasmania-Commonwealth Regional Forest Agreement: a strategic approach, Section 3.2.2.

¹⁸ Ibid.

¹⁹ Branchline Volume 6, October 2003. Keeping track of Huon pine, p12. Forestry Tasmania publication.

3.3 Specialty timber processing

3.3.1 Pulpwood

In the 1970s, export markets were established for pulpwood from a range of Tasmanian species including myrtle, blackwood, and sassafras. The allowable proportion of non-eucalypt woodchips might be as much as 10%²⁰. Since the mid 1990s more exacting export markets developed, including specific markets for myrtle woodchips²¹. Up to 101,000 m³ of specialty timber is wood chipped each year, of which a significant proportion is myrtle²².

3.3.2 Sawn timber and veneers

Approximately eight sawmills in Tasmania specialise in specialty timbers, the major commercial operations being located in the north-west. A selection of eucalypt sawmills and veneer mills also process some specialty timbers. Britton Brothers and Corinna Timbers have shared 'traditional rights' to myrtle and other specialty timber sawlogs in north-west Tasmania. Britton Brothers mills approximately 25,000m³ of sawlog per year, comprising approximately 50% Eucalypt, 30% Blackwood, 10% Myrtle, and 10% Sassafras and Celery Top Pine. Corinna Timbers mills approximately 4,000 m³ of sawlog per year comprising about 50/50 Myrtle/Blackwood with a small amount of Huon and Celery Top Pine. Corinna are allocated 500 m³ celery-top pine and 100 m³ Huon pine though this is not a guarantee of supply.

As products, all of Britton Brothers' sawn timber is kiln-dried, 80% is dressed of which a further 50% is profiled for products such as flooring, linings and architraves. A maximum of 20-30% of Britton Brother's myrtle products are sold into the Tasmanian market with the remainder sold into the National market through wholesale outlets. These outlets sell rough-sawn and finished myrtle in packs to hardware stores, building and construction companies, architects, private buyers and furniture makers. Currently a small portion of Britton Brothers' sales go to an international market in Europe, Southeast Asia, and the United States.

Corinna Timbers produces primarily rough-sawn, kiln-dried timber. Half of Corinna's myrtle is sold into the local market, the remainder to timber merchants throughout Australia. From there, it goes to hardware stores, building and construction companies, architects, private buyers and furniture makers. Corinna Timbers turnover comprises 60% Blackwood, 35% Myrtle, and the remainder 5% celery top pine, Huon pine, and sassafras.

The total annual supply of special-species timber logs for veneer slicing is no more than 2,000 cubic metres²³. Tasmania has two large hardwood veneer mills (one at Somerset in the north-west and one at Boyer in the south) and one smaller veneer mill. The veneer mills produce decorative veneers from eucalypts, specialty timbers and radiata pine. Specialty timber veneer is sold in Tasmanian, mainland

²⁰ Graham, A. Tasmanian Conservation Trust, personal communication.

²¹ Ibid.

²² Forestry Commission (1990). Special timbers draft management plan and issues paper, p29.

²³ Joint RFA Steering Committee (1997). Options for the Tasmania-Commonwealth Regional Forest Agreement: a strategic approach.

and international markets; it is used for furniture, fine craft and decorative wall panels. Veneer products of higher value tend to be sold interstate. Less than 7 per cent of veneer is purchased by consumers in Tasmania: the majority goes to markets in Melbourne and Sydney, where high quality veneer can sell for at least \$4,000 a cubic metre²⁴.

3.3.3 Downstream processing of specialty timbers in Tasmania

As detailed in **Section 2**, Tasmanian specialty timbers are used in a wide variety of applications including: furniture, panelling, flooring, wooden boats and craft. Estimated annual use of specialty timbers within Tasmania is given in **Table 2**. Approximately 30% (6,156 m³) of annually recovered specialty timber sawlog is used by Tasmanian craftspeople.

Table 2: Estimated annual use of specialty timbers within Tasmania²⁵

Species	Commercial* use (m ³)	Semi-commercial* use (m ³)	Total (m ³)	% of total
Myrtle	339	1,327	1,666	27%
Sassafras	281	1,158	1,439	23%
Blackwood	455	885	1,340	22%
Huon pine	232	745	977	16%
Celery top pine	174	348	522	9%
Leatherwood	5	161	166	3%
King Billy pine	12	28	40	<1%
Total	1,498	4,652	6,156	

Table notes: volumes are given in round-log equivalents assuming a 20% recovery of sawn timber.

* Commercial use refers to design and production driven enterprises whereas semi-commercial refers to income earning hobbyists.

The source of specialty timbers used by Tasmanian craftsmen is shown in **Table 3**.

Table 3: Where specialty timber users source their raw materials²⁶

	Logs	Sawmills	Kiln-dried retail	Craft license
Design sector	2%	41%	53%	2%
Production sector	6%	70%	20%	1%
Semi-commercial sector	25%	38%	1%	2%

²⁴ Ibid.

²⁵ Estimated figures - derived from: Brueckner Leech, "Special Timbers Supply Chain Review", Tasmania Department of State Development, Business Tasmania, August 1999.

²⁶ Figures derived from: Brueckner Leech, "Special Timbers Supply Chain Review", Tasmania Department of State Development, Business Tasmania, August 1999.

3.3.4 Craft and semi-commercial operators

A specialty timber worker is typically a sole practitioner, working from a small workshop, and consuming a minimal quantity of wood to either generate an income as a professional or to create a rewarding or satisfying hobby²⁷. These workers are often experienced users of wood and their livelihoods depend on the quality of their products.

An estimated \$13 million²⁸ per annum comes to the State as a result of tourists purchasing wood-craft products. This expression of the Tasmania “brand” is a very effective advertisement for the State as a tourist destination because wood-craft is a tangible link between the Tasmanian community, the tourist and the forest.

3.3.5 Furniture

The Tasmanian furniture industry (including use of eucalypt and radiata pine) employs an estimated 444 (full-time equivalents) and has a turnover of \$34 million per annum²⁹. A hundred years ago, Tasmania supplied all its own furniture needs and exported its surplus. In 2002, Tasmania is a net importer of furniture, in spite of the fact that its forests contain some of the best furniture making tree species in the world. The Tasmanian furniture industry, once represented by many firms producing reproduction pieces predominantly from blackwood and some commodity production, has been in a period of rapid decline³⁰. However, the designer/maker, small products sector has shown apparent growth in the last 15 years, largely as a result of the introduction of design education within Tasmania³¹.

Furniture designers and makers require small volumes of special Tasmanian timbers and produce unique and distinctly Tasmanian products that can command premium prices in niche markets. The furniture designers and makers have no market advantage at the quality end of the market using wood from a plantation forest or immature re-growth timber. Plantation timbers provide bland wood as noted furniture designer K. Perkins says “*with plantation timber quality does not come into the equation*”³².

²⁷ Johnson, M (2002). An overview of the fine wood industry and forest based tourism in south-western Australia.

²⁸ ABS survey quoted in: Brueckner Leech, “Special Timbers Supply Chain Review”, Tasmania Department of State Development, Business Tasmania, August 1999, p 17.

²⁹ Brueckner Leech, “Special Timbers Supply Chain Review”, Tasmania Department of State Development, Business Tasmania, August 1999.

³⁰ Ibid.

³¹ Ibid.

³² Perkins, K. “Furniture Designer”, in Gee, H. (2001) For the forests – a history of the Tasmanian forest campaigns, p.274.

3.3.6 Wooden boat building

The revival of wooden boat building is a worldwide phenomenon. It was triggered initially in the 1970s because of the commercial popularity of new methods of plywood construction and the proven quality of epoxy adhesives. But there is now a growing interest in North America, Japan, and Europe, in traditional construction, using durable species of solid wood. This development has come just as world supplies of durable timbers are becoming seriously depleted. Tasmania is one of the few places in the world able to take advantage of this turn of events, but will not be able to for much longer if present practices continue. As Huon pine is so slow growing that it is for practical purposes a non-renewable resource, celery-top pine is becoming increasingly important, as it is slow growing and stable and still forms a substantial component of production forests, which could be managed to provide a perpetual, small supply. This would be a great advantage to Tasmania, because 3 cubic metres of celery top pine is all that is required to plank the hull of a vessel worth about \$150,000 on the international market³³.

This is potentially a very large international market that Tasmanian boat builders have only just begun to enter. *WoodenBoat* magazine, based in the United States, published a reader survey in 1997 which showed 107,500 readers with an average household income of \$US 96,420 per year. Twenty four percent of them intended to purchase a new wooden boat within the next twelve months.³⁴ Other similar publications include *Classic Boat*, *Watercraft* (UK), *Chasse Maree* (France) and *Maritime Life and Traditions* (USA/France), all of which demonstrate a strong reader interest in traditional solid wood construction of a range of craft from replicas of large historic vessels to new yachts of classic construction and design to small traditional clinker sailing and rowing dinghies³⁵.

This is the global context in which Tasmanian specialty species forests are being cut. The market for celery-top pine poles is a local and limited one, but the clearfelling process which floods the market with them results in *all the celery-top pine in a given coupe being felled, regardless of age, at the same time*, hence devaluing what is potentially a very valuable timber resource. This means that relatively young trees, less than 200 years old will always be in the majority of the trees that are felled. It is only after this age is reached, when the lower branches have fallen off and the knots close to the heart have become occluded that the clear timber begins to grow all around the tree. This is the high class material, which boat builders and furniture makers need to maintain Tasmania's reputation³⁶. Immature trees are best left standing.

³³ Young, J. (2000). "Wooden boatbuilding in the 21st Century", pre-publication manuscript. See also *Signals*, Quarterly Magazine of the Australian National Maritime Museum, No.49, December 1999, pp. 26-30

³⁴ *WoodenBoat* Reader Survey, May 1997, WoodenBoat publications, Brooklyn, Maine.

³⁵ Young, J. (2000). "Wooden boatbuilding in the 21st Century", pre-publication manuscript.

³⁶ Ibid.

4 Supply Sustainability Issues

Current practice is to partly supply specialty timbers through ‘arisings’ from scheduled eucalypt coupes containing a specialty timber understorey. “Arisings” refer to the logs which become available incidentally, rather than deliberately, as a by-product of the clearfelling harvesting method. Like the “by-catch” of deep-sea trawling, the “arisings” are largely wasted because in their immature state they have little or no commercial value. Above this, a number of Special Species Timber Management Units (STMU coupes) (**Section 4.2**) are scheduled to meet supply commitments. The Commonwealth and State governments agreed in the RFA to “maximizing the recovery of special species from Forests managed for these timbers and from all other harvested forests”³⁷. The uncertainty and high variance associated with ‘arisings’ has led to difficulties in balancing supply from STMU coupes, particularly in respect to forward roading³⁸.

4.1 Conversion forestry

In Tasmania’s native forests, trees of all ages exist from seedlings through to mature trees many hundreds of years old. Native forests grow wood slowly, producing dense stable timber. The composition and structure of native forests is determined to some extent by natural bushfires the extent and intensity of which varies from place to place resulting in a mosaic from closed stands of pure rainforest to stands of pure grassy woodland eucalypt and a continuum in between. Even after the most intense natural wildfire, areas of forest remain untouched, particularly in sheltered or wet gullies. Such gullies also act as natural firebreaks thus determining the natural mosaic pattern across the landscape. Some tall trees survive and regenerate after fire, hence maintaining the structural and species diversity of the forest before the fire.

By contrast, current forestry practice in Tasmania focuses on cutting large continuous tracts of forest, and then subjects the clearfelled area to an intense burn prior to replanting or re-sowing. Under intense, open light conditions, the regrowth Eucalypt trees grow rapidly producing a much lower quality of wood than the original forest. Reliable, solid wooden furniture (and other products) simply cannot be made from rapidly grown, immature plantation or re-growth native timber. The concept of ‘sustainable harvesting’ is only truly achievable if timber of equivalent size, stability and quality is able to be regrown³⁹, and if old growth forests, with all their biodiversity, range of tree species, ages and sizes and aesthetic qualities, can be regenerated and maintained.

Conversion forestry, which aims to maximise the future availability of export pulpwood on commercially optimal short-term harvest rotations, will ensure that, in the future, specialty timbers will either be sourced only from rainforest or from plantations of specialty timbers. There are problems with both of these options. At current rates of logging in tall mixed eucalypt forests, this source of specialty timbers will be exhausted by about 2020⁴⁰ and it is likely that, at some point, all

³⁷ RFA, November 1997, Attachment 12, No.28.

³⁸ Brueckner Leech, “Special Timbers Supply Chain Review”, Tasmania Department of State Development, Business Tasmania, August 1999.

³⁹ Johnson, M (2002). An overview of the fine wood industry and forest based tourism in south-western Australia.

⁴⁰ Forestry Commission (1990). Special timbers draft management plan and issues paper.

Tasmanian rainforest will be reserved from logging as it is in Queensland and other Australian States. Due to the extremely slow growth of most specialty timbers, long term management for sustained sawlog yield is not feasible under current management as the specialty timbers require 300-1,000 years to attain sawlog quality.

Clearing State forest to establish plantations is largely restricted to tall *E. obliqua*, *E. regnans* and tall *E. delegatensis* communities⁴¹. In 1999 there was about 68,000 hectares of specialty timber rich forest in native forest coupes that will primarily be managed for and converted to eucalypt production⁴². Additionally, extensive tracts of privately owned rainforest (e.g. Gunn's Surrey Hills block) have been, and continue to be, converted to plantations, mainly of *Eucalyptus nitens*, in north-western Tasmania.

4.1.1 The science behind conversion

The scientific justification for the clearfell, burn and sow silvicultural system originally arose from a University thesis written by J.M. Gilbert in 1958⁴³. The thesis advocated clearfell and burn as the best way to harvest the forest given that the objective was to maximize eucalypt regeneration and production. Gilbert himself points out that the downside of this method is that specialty timbers would be destroyed. While Forestry Tasmania often quote Gilbert's research as the 'scientific' justification for clearfelling, they never mention that, even in 1958, Gilbert foresaw the loss of the specialty timbers⁴⁴. It is worth pointing out the selective nature of Forestry Tasmania's regard for Gilbert's work, and that if they trust his research, as they appear to do, they have known for 45 years, that clearfelling combined with short rotations of regenerated forests, will eliminate specialty timbers for production purposes.

4.1.2 The economics behind conversion

Tasmanian rainforest and mixed forest rich in specialty timbers is considered to have low commercial value for wood production due to its inaccessibility, high proportion of defective wood, small log sizes and slow growth rates. Additionally, under current market arrangements, timbers such as myrtle, aren't particularly valuable. Myrtle, as sawn wood, competes in the marketplace with a range of other competitively priced timbers such as New Zealand beech and tropical hardwoods - and specialty timbers make up approximately 0.1% of Forestry Tasmania's forest harvest income⁴⁵.

From a forestry point of view, even high quality old growth rainforest isn't worth much, and will only generate about \$1,000 per hectare in myrtle sawlog revenue⁴⁶, and that's for a once only harvest in a 200 year rotation. Returns per hectare from clearfelling eucalypt forest can be more than ten times

⁴¹ Forestry Tasmania sustainable forest management report 2001/2002, p28.

⁴² Brueckner Leech, "Special Timbers Supply Chain Review", Tasmania Department of State Development, Business Tasmania, August 1999, p.22.

⁴³ Gilbert, J.M. (1958). Eucalypt-rainforest relationships and the regeneration of eucalypts. PhD thesis, Botany Department, University of Tasmania.

⁴⁴ Ibid. p.235

⁴⁵ Mesibov, R. (2003). Myrtle minus spin. In depth feature article, The Mercury, 14 August 2003, p 18.

⁴⁶ Ibid, p18.

greater, and are earned on rotations of 30-40 years⁴⁷, therefore there is high commercial pressure for conversion of mixed forest or rainforest to eucalypt plantations, especially in areas on fertile soils.

The importance of specialty timbers lies in considering the economics of the whole supply chain in the long term, rather than just the royalty or stumpage in the short term. The value of specialty timbers to the Tasmanian economy, in terms of downstream processing and its reputation for fine skills and unique products, is arguably greater than that derived from export commodity driven eucalypt production. In any case, to eliminate options other than reliance on a high volume, low value market in an unstable world is asking for future trouble.

4.2 Forestry Tasmania’s Special Species Timber Management Units

Forestry Tasmania began the establishment of Special Species Timber Management Units (STMUs) in 1995 with the intention that STMU coupes would provide for the ongoing supply of specialty timbers. The creation of STMUs occurs through policy decisions over the management of particular areas of State forest. There is no secure tenure associated with the STMU system. On State forest (as of March 2003), 143,100 ha of rainforest, wet eucalypt forest and blackwood swamp forest was classified as STMUs (**Table 4**)

Table 4: Gross area of STMUs (hectares) by forest districts⁴⁸

District					
Bass	Derwent	Huon	Mersey	Murchison	Total
2,400	3,600	8,000	1,400	127,700	143,100

A harvest age of at least 70 years is applied in STMUs identified for blackwood supply, however a harvest age of at least 250 years will be applied in other STMUs⁴⁹.

4.2.1 Inadequacies of the STMU system

Contentious forests

The RFA promised “certainty of resource access to the forest industry”, not just to the Eucalypt sector of it. Yet many of the STMU forests are contentious as they have high conservation value due to their proximity to the existing World Heritage Area or due to the fact that they are pure rainforest. It is problematic to allocate the majority of the future specialty timber resource from forests that are currently contentious and likely to become more contentious as national and international pressure to cease rainforest logging increases. One such area is the Savage River pipeline corridor, an area of about 20,000 hectares within the Savage River rainforest, an area also known as the Tarkine. Under the RFA the whole pipeline corridor was put into a zone claimed to be important for the long-term

⁴⁷ Ibid, p18.

⁴⁸ Figures from: letter from Bob Gordon (Forestry Tasmania) to TWFF, 14/10/2003.

⁴⁹ Brueckner Leech, “Special Timbers Supply Chain Review”, Tasmania Department of State Development, Business Tasmania, August 1999, p23.

supply of deep red myrtle as a specialty timber. The same area is part of the conservation movement's proposed Tarkine National Park and World Heritage Area.

Sustainable harvest?

Forestry Tasmania has not yet determined what an ecologically sustainable harvest from the STMUs would be, or the detail of how it would be achieved. STMUs have not been audited for their timber quality or volumes. As no audit of the contents of the STMUs has yet been done, and given that commercial pressure for eucalypt production may increase, there is likely to be clearfelling within the STMUs which will favour a species transition to eucalypts.

The role of STMUs is the “sustainable production of specialty timbers” by means of what is described as “long rotation selective harvesting”⁵⁰. The precise meaning of these words, and how they will be reflected in harvesting practice is difficult to determine. “Rotation” is a word commonly used in relation to clearfelling of re-growth eucalypt forest, while “selective” is commonly understood as the extraction of single trees or small groups of trees. Discussions with Forestry Tasmania staff have led to the conclusion that some clearfelling may occur within the STMUs, that relatively little is known of the structural detail of the individual units and that the choice of harvesting method and the species targeted will be “product driven”, on a coupe by coupe basis.

Uneconomic to harvest?

Forestry Tasmania's research into alternative harvesting techniques at their Warra long-term ecological research site in the Huon Valley has demonstrated that single stem selective logging is the most expensive method for the purpose of *recovering eucalypts*⁵¹. There appears to have been no research undertaken at the Warra STMU about the value of single stem selective logging *for the purpose of recovering specialty timbers*.

4.3 Myrtle – a special case

4.3.1 Myrtle wilt, rot and chips

Myrtle characteristically has a high incidence of internal rot, hence sound sections of sawlog are difficult to predict from standing assessment of the trees. Additionally, deep red myrtle, the variety favoured by sawmillers, cannot be reliably predicted. Consequently, due to the unpredictable properties of standing myrtle trees, there is a great deal of waste created when myrtle is logged.

Additionally, a significant problem unique to the harvest of myrtle is the ‘myrtle wilt’ fungal disease which leaves a big question mark over the prospects for a sustainable myrtle harvest unless onsite milling or helicopter salvage is used. Myrtle wilt is a disease caused by the fungus *Chalara australis*. Myrtle wilt is a natural pathogen that occurs in all of Tasmania's rainforest. In normal rainforest conditions (closed canopy, low light, high moisture), it is kept under control, and has only a minimal

⁵⁰ Ibid, p22.

⁵¹ Branchline Volume 6, October 2003. Taking up the challenge, alternatives to clearfelling, p.3. Forestry Tasmania publication.

impact on rainforest survival. When the normal conditions are changed (i.e. via roading, or logging), myrtle wilt can reach epidemic proportions. This is why selectively logging myrtle rainforest has virtually the same ecological impact as clearfelling, as stands of rainforest that are left tend to die from myrtle wilt anyway.

Myrtle trees with brown leaves are a good indicator of trees currently dying from myrtle wilt. Research has shown that the annual mortality of myrtle was measured at 0.9% for an unlogged area compared to 3.1% for retained trees in a selectively logged coupe over a period of a decade following logging⁵². Trees take from one to three years to die from myrtle wilt⁵³.

Damage or wounding of trees provides a direct infection site for myrtle wilt and the disease may spread below the ground. Retained seed trees after logging, particularly if damaged, have a very high risk of dying from myrtle wilt⁵⁴. Some sites are more at risk of myrtle wilt than others, for example:

- low altitude forests
- callindendrous myrtle forests (taller forests on fertile sites)
- stands of high myrtle density
- mixed forests are more at risk
- trees with larger diameter

4.3.2 Deep red myrtle availability

The logging of deep red myrtle is a contentious issue due to the fact that it is largely found in the Savage River pipeline corridor, an area of high conservation value known as the Tarkine. There was a deep red myrtle production target of 4,500 m³ per annum⁵⁵ (RFA clause 55) set for the remainder of the RFA (until 2017), however the State Government announced on 4 June 2003, a reduced target of 2000 m³ which included previously reserved resources in the Savage River pipeline corridor⁵⁶. Current harvest is about 900 m³ per annum⁵⁷. It is clear from the figures listed below that current production of deep red myrtle can be met from ‘arisings’ and from coupes outside the pipeline corridor. Given this situation, there is no justification for the logging of the Savage River pipeline corridor.

- There is an estimated 40,000 m³ of deep red myrtle in rainforest outside the Savage River pipeline corridor and currently economic to log⁵⁸.
- There is an estimated 55,000 m³ of deep red myrtle within the Savage River Pipeline corridor⁵⁹.
- Deep red myrtle derived from clearfelling of mixed forest ‘arisings’ is currently 640 m³ per annum, which is expected to decline rapidly in coming years⁶⁰.

⁵² Packham, J. (1991). *Myrtle Wilt*. Tasmanian NRCP Technical Report No. 2, Forestry Commission, Tasmania.

⁵³ Kile, G., Packham, J. & Elliott, H. (1989). Myrtle wilt and its possible management in association with human disturbance of rainforest in Tasmania. *New Zealand Journal of Forest Science* **19**, 256-264.

⁵⁴ Jennings, S. & Hickey, J. (1998). Rainforest silviculture. Native Forest Silviculture Technical Bulletin 9. Forestry Tasmania.

⁵⁵ Mesibov, R. (2002). Review of the deep red myrtle resource in Tasmania. Forestry Tasmania, p4.

⁵⁶ The Mercury, 5 June 2003, Article ‘Outcry at plan to log Myrtle’. p5.

⁵⁷ Mesibov, R. personal communication.

⁵⁸ Mesibov, R. (2002). Review of the deep red myrtle resource in Tasmania. Forestry Tasmania, p30.

⁵⁹ Ibid, p2.

⁶⁰ Ibid, p30.

It is clear that if current production of deep red myrtle is to be sustained then pressure will continue to be placed on the contentious forests of the Savage River pipeline corridor. To avert this looming sustainability crisis there must be: i) more efficient use of myrtle ‘arisings’ from mixed forest coupes across the State as a transition to ending clearfelling; and ii) a reduction in the harvest rate.

4.4 Timber specifications

Another concern of specialty timber users is the current assessment of what timbers in the forest are useable. Specifications are such that specialty timber sawlog, termed category 4, needs to be in almost perfect condition - 3 m long, straight, at least 400 mm in diameter for myrtle and 250 mm for other specialty timbers⁶¹ - for the entire length of the log for it to be considered sawlog quality. If specifications for twisting, scarring, shape or presence of pin-hole borers are exceeded, then the timber is not considered for sawlog and is downgraded to ‘utility’ or ‘outspec’. ‘Outspec’ timber, whether damaged, blemished, bent, twisted or knotty, is still highly valued by specialty users, and often has great potential for decorative and feature uses. Unfortunately much of this timber is impossible to salvage following clearfelling, and usually ends up being used as fuel to fire a regeneration burn.

Current specifications for specialty timbers are part of the reason why huge volumes of specialty timbers can be overlooked or wasted during logging operations⁶². A thorough review of the specifications is required to facilitate the optimal use of specialty timbers (refer to **Section 6.2**).

4.5 Fire

Tasmania’s specialty timbers are fire sensitive and their extent has diminished since European settlement partly as a result of altered fire patterns, increased accessibility and arson. For example nearly one third of the pristine King Billy pine forests have been burnt in the last century⁶³.

Specialty timber seedling regeneration will occur on burnt sites so long as seed source is available, however, seedlings are subject to desiccation in open conditions for several years after establishment. Regular hot fire frequencies of less than 100 years will ensure the elimination of specialty timbers and the establishment of fire adapted eucalypt and sclerophyll (hard-woody) vegetation.

5 Identifying forests to sustain specialty timbers into the future

As pointed out in **Section 4.2**, Forestry Tasmania’s current system of specialty timber supply, the STMU (special timber management units) system is inadequate as it is heavily reliant on ongoing access to the rainforests of northwestern Tasmania. This document argues for the abandonment of the current divisive STMU system which proposes the sourcing of specialty timbers from predominantly

⁶¹ Ryan, T. (1999). A review of log segregation and utilisation in Tasmania. Forests and Forest Industries Council of Tasmania.

⁶² Green, G. (2002). Logging coupe inventory. Timber Workers for Forests publication.

⁶³ Brown, M. (1988). Distribution and conservation of King Billy pine. Forestry Commission, Tasmania.

pure rainforest areas of world conservation significance. Instead, the document proposes the sourcing of specialty timbers from appropriate mixed wet forests and blackwood forests throughout the State.

The mixed forests identified here as appropriate for specialty timber management are the very forests that are currently being targeted for conversion to eucalypt production as discussed in **Section 4.1**. In fact, this conversion may well be complete by as soon as 2020⁶⁴ if a proposed new system of management in mixed forests is not adopted. In 1999 it was identified that about 68,000 hectares of specialty timber rich forest in native forest coupes will primarily be managed for and converted to eucalypt production⁶⁵, an outcome that must be avoided at all costs.

5.1 Mapping mixed forests

Mixed forest consists of tall eucalypt forests with an understorey of rainforest species, including the species of interest to the specialty timber industry. Conditions suitable for mixed forest occur where rainfall is generally above 1,200-1,400mm and where minimum requirements for rainfall in summer months is met. However, the occurrence of mixed forest is governed largely by fire, with fire frequency determining whether wet eucalypt forest in sites with suitable conditions will progress to mixed forest or wet sclerophyll forest. Frequent anthropogenic burning can result in areas suitable for mixed forest being maintained as wet sclerophyll forest. Fire frequencies of longer than 400 years will almost ensure evolution of mixed forests to rainforest as the eucalypts die out.

Conditions suitable for the development of specialty timber trees of sufficient size to be utilised are restricted by altitude, generally not occurring above 600 m ASL, and also by site quality. Sites suitable for the growth of the taller stages of eucalypt forest are generally likely to be those in which special species trees can also develop to appreciable sizes.

In the absence of actual mapping of mixed forest⁶⁶, the above parameters were used to derive a set of environmental domains defining the areas in which, in the absence of fire frequencies favouring development of wet sclerophyll species, the development of mixed forest species of suitable size are likely to occur. The same parameters were also used to identify the higher quality sites within the blackwood (*Acacia melanoxylon*) forest types, though extensive areas of these forests are mainly confined to the north-west of Tasmania.

Several mapped data sources were used to develop the environmental domains. Data available from several sources, particularly Regional Forest Agreement (RFA) mapping and general climate and topographic data, was sufficient to construct a domain for both mixed forest and high quality blackwood sites. RFA mapping of wet forest communities identifies five forest communities of particular interest to the specialty timber industry - *Eucalyptus delegatensis* tall forest (DT), *Eucalyptus obliqua* tall forest (OT), *Eucalyptus regnans* forest (R), *Acacia melanoxylon* forest on flats (BF) and *Acacia melanoxylon* forest on rises (BR). The three eucalypt forest types occur as both

⁶⁴ Forestry Commission (1990). Special timbers draft management plan and issues paper.

⁶⁵ Brueckner Leech, "Special Timbers Supply Chain Review", Tasmania Department of State Development, Business Tasmania, August 1999, p.22.

⁶⁶ A request to Forestry Tasmania for use of data within their PI-types mapping was refused.

mixed forest and wet sclerophyll forest, but have not been differentiated in either the mapping undertaken for the RFA or in the more recent Tasveg mapping program.

The following data and process was used to develop the environmental domains, which is confined to public land outside conservation reserves and proposed reserves.

1. Vegetation mapping - Revised Tasveg mapping of the five target forest communities was used where available, with RFA mapping used where Tasveg mapping had not yet been completed.
2. A rainfall model of average annual rainfall for the State was used to exclude areas of the target forest communities with less than 1,300mm average annual rainfall from the model.
3. A digital elevation model for the State was used to further exclude areas of the target forest communities occurring above 600m ASL from the model.
4. The published RFA map of native forest height potential was used to exclude areas of eucalypt height potential of less than 34 metres from the model.
5. The published RFA map of biophysical naturalness was used to identify past human disturbances, particularly intensive logging, which would be likely to have removed significant amounts of the standing volume of special species. Areas mapped within biophysical naturalness classes 1-2 (generally clearfell logged or multiple selective logging events) were treated as having been logged, while those in classes 3-5 (generally most significant disturbance no more than one selective logging event) were considered likely to contain extant special species.

The above process was used to define domains, from which summary data on areas were produced:

Mixed forest domain – extant	DT, OT or R forest; >1,300 mm rainfall; <600 m ASL; >34 m potential; BN3-5.
Mixed forest domain - logged	DT, OT or R forest; >1,300 mm rainfall; <600m ASL; >34 m potential; BN1-2.
High quality Blackwood domain – extant	BF or BR forest; >1,300 mm rainfall; <600 m ASL; >34 m potential; BN3-5.
High quality Blackwood domain - logged	BF or BR forest; >1,300 mm rainfall; <600 m ASL; >34 m potential; BN1-2.
Wet sclerophyll forest domain - extant	DT, OT or R forest; one or more rainfall, BN3-5.
Wet sclerophyll forest domain - logged	DT, OT or R forest; one or more rainfall, BN1-2.
Low quality Blackwood domain – extant	BF or BR forest; one or more rainfall, BN3-5.
Low quality Blackwood domain – logged	BF or BR forest; one or more rainfall, BN1-2.

Based upon the criteria and process described above, the proposed Specialty Timber Zones were mapped – **Figures 1-3**.

Figure 1: Proposed Specialty Timber Zones – northwest Tasmania

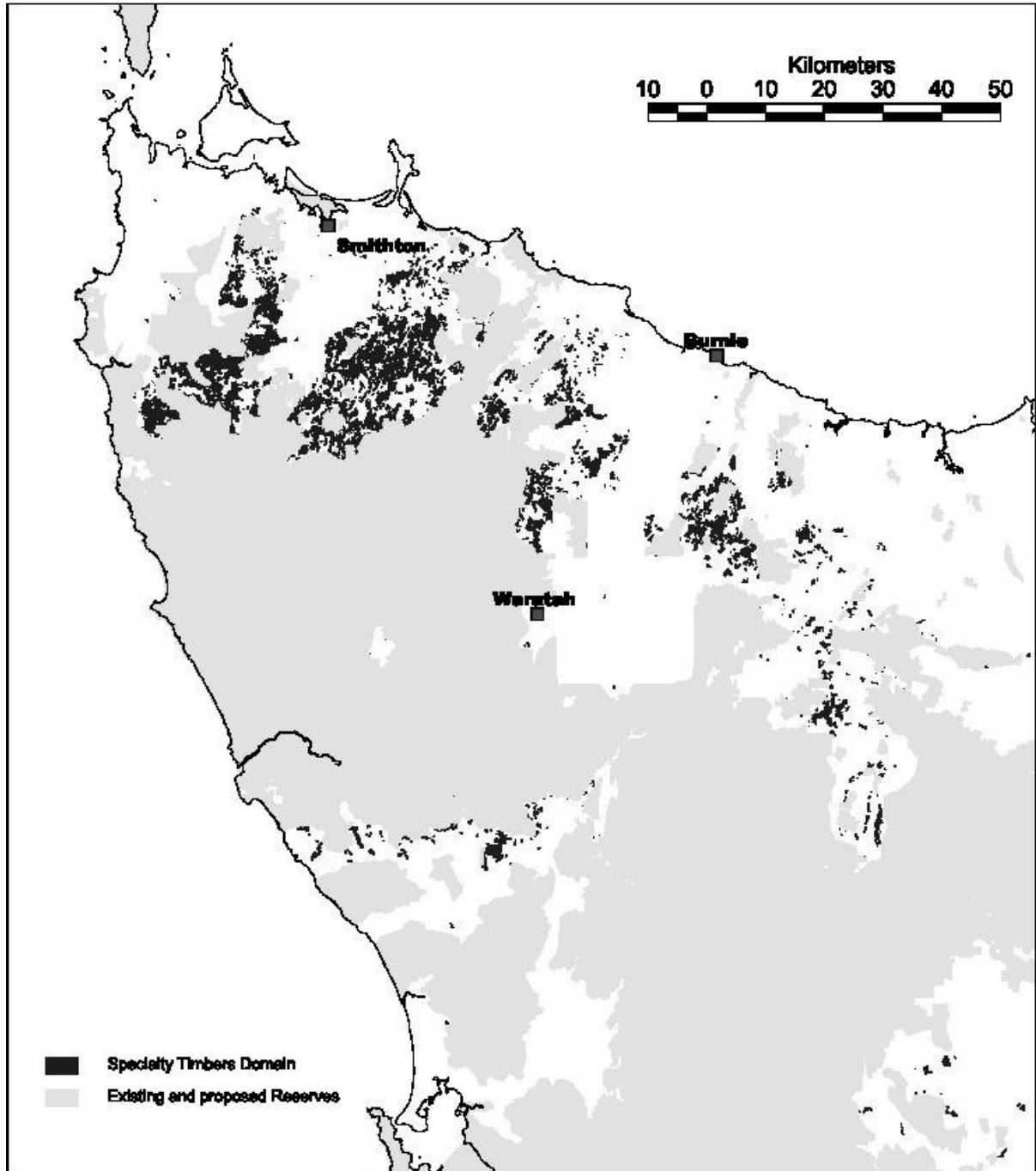


Figure 2: Proposed Specialty Timber Zones - northeast Tasmania

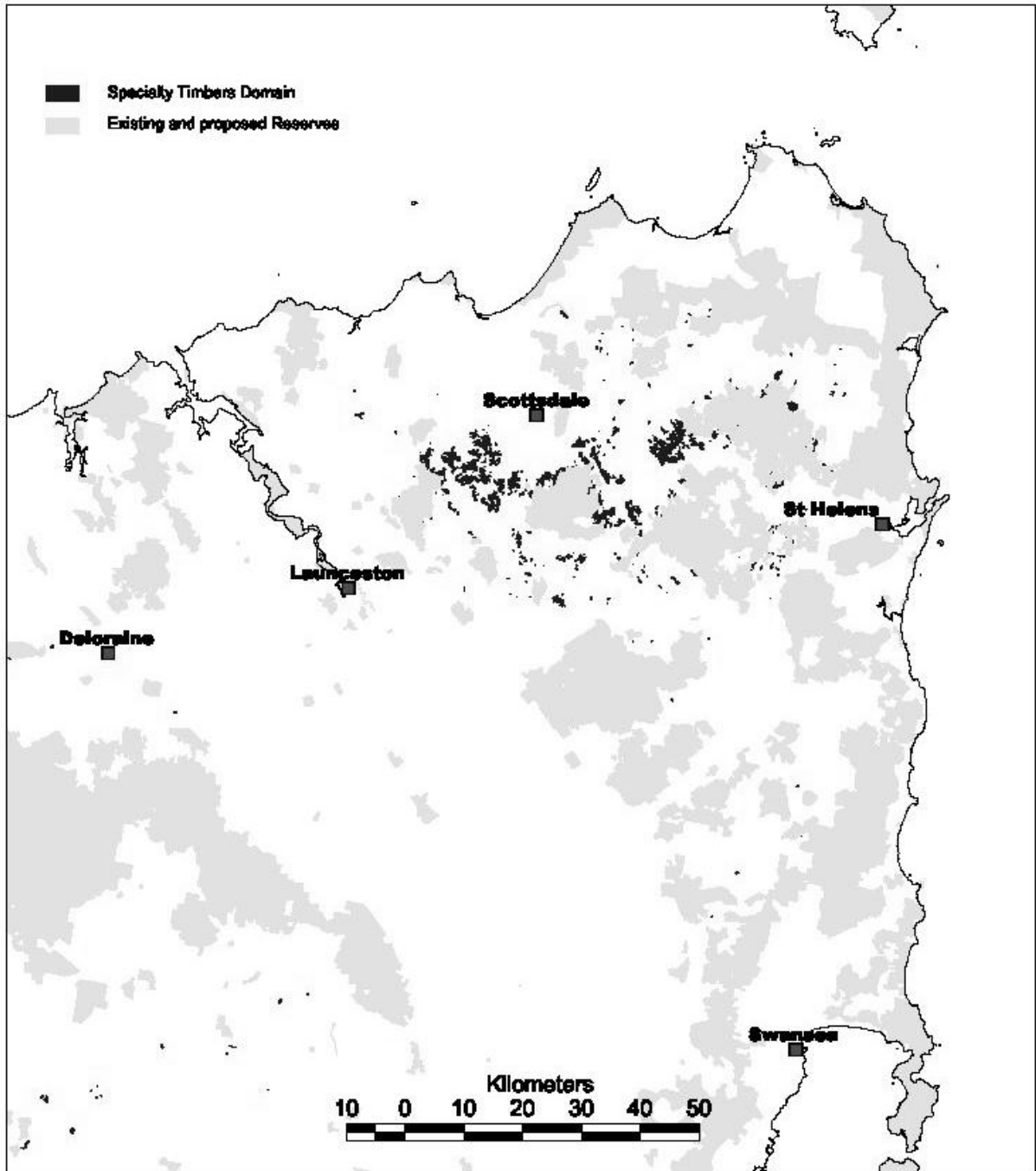
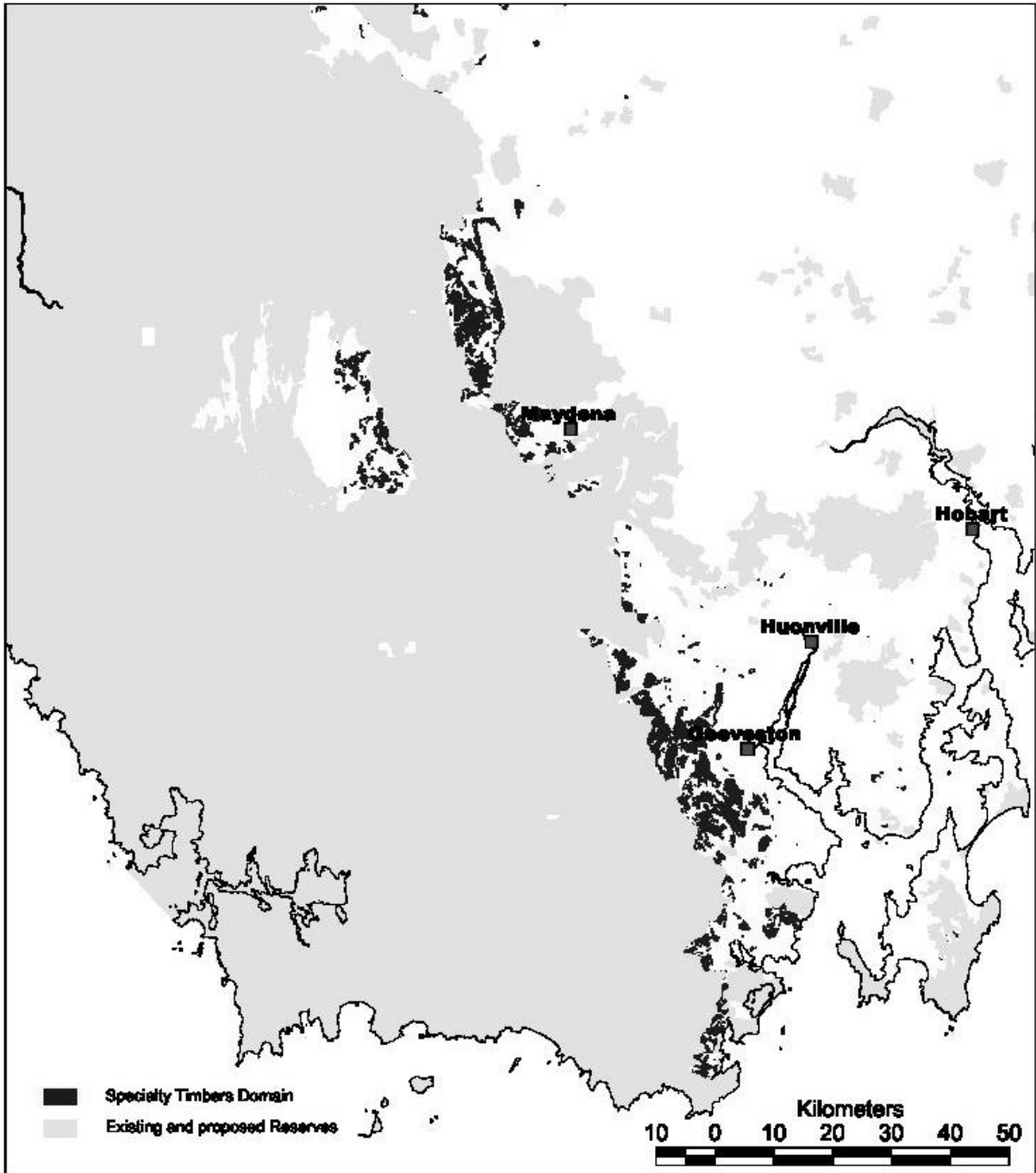


Figure 3: Proposed Specialty Timber Zones - southern Tasmania



The total area of mixed forest and blackwood forest identified for the proposed Specialty Timber Zones is 62,220 hectares. The proposed Specialty Timber Zones by Forest District are given in **Table 5**. The Table also gives a comparison (in terms of area) of the proposed Specialty Timber Zones with Forestry Tasmania’s existing STMU system.

Table 5: Mixed forest and blackwood forest domains by Forest District (hectares)

Forest domain	Bass ha	Derwent ha	Huon ha	Mersey ha	Murchison ha	Total of each forest type
Mixed forest domain - extant wet forest	5,400	4,030	8,050	1,680	15,500	34,660
Mixed forest domain - disturbed	990	4,100	3,580	620	11,800	21,090
Blackwood forest domain - extant	380	690	1,050	160	3,700	5,980
Blackwood forest domain - disturbed	50	10	70	10	350	490
Total in each District (hectares)	6,820	8,830	12,750	2,470	31,350	62,220
Comparison with current areas of STMU	2,400	3,600	8,000	1,400	127,700	143,100

5.2.1 Transitional arrangements

The forests identified for specialty timber production within the mapped domains are obviously not all available for timber production, particularly as some has been logged within the last few decades. Given this situation a transitional supply strategy would need to be developed to eke out mature forest timbers from the balance until regrowth and recently logged areas have matured.

6 Management Recommendations

6.1 Establish tenure and management structure

The responsibility for managing the identified forests for specialty timber production should rest with a Specialty Timber Commission created under a new Act of Parliament - the Specialty Timber Commission Act 2004. The Commission should be formed from representatives of the specialty timber industry, the community, the tourism industry, beekeepers, conservation organisations, Forestry Tasmania and natural resource management officers and foresters. The Commission would be given the responsibility to employ appropriate professionals to prepare forest management plans. There is a need for a change of emphasis from the current concentration on coupe harvesting plans to the development of detailed and comprehensive forest management plans for each small and distinctive area of forest. Forest management plans would not only identify ecologically sustainable timber yield

but would also identify areas of high conservation value and seek to maintain values such as ecotourism potential, cultural heritage, honey production and ecosystem services such as water yield, habitat and biodiversity.

6.1.1 Determine ecologically sustainable yield

The first step in management of the forests identified for specialty timber production is to audit the forests to identify the species present, their age, distribution and estimated timber volume. Ecologically sustainable yield would be determined by:

- determining the annual growth rate of the specialty timber trees;
- determining the annual timber yield of the specialty timber forests;
- setting harvest volumes at a discount below the estimated annual timber yield of the forests;
- selective removal of trees of commercial size and age only (refer **Section 6.2**).

There are examples where a similar approach to ecologically sustainable forest management has been successful, and even though the ecological situation is different, the philosophical approach nevertheless has validity and can be emulated. David Suzuki in his book ‘Good news for a change’⁶⁷ relates the following example of Merv Wilkinson of Vancouver Island in British Columbia. Mr Wilkinson, at 88, had managed a 55 hectare forest for 60 years. In 1945, Wilkinson estimated that his forest grew at a rate of 1.9% and was committed to cutting at below that rate. Over his life he harvested two and a half times the original volume of the forest and still had 10% more wood than when he started. Trees were selected for their value not for their volume. Furniture grade wood was selected from suitable species at just the right age. Wilkinson’s philosophy was that the non-marketable species in the forest were not competitors for its products but rather indicators of the health and resilience of the system. Through the process of managing his forest he made a good living and provided employment for 26 people.

Annual growth increments of specialty timbers, are shown in **Table 6**. Such research would be used as a basis for calculating annual timber yield and ongoing sustainable yield.

⁶⁷ Suzuki, D. & Dressel, H. (2002). Good news for a change, p224.

Table 6: Growth increments of specialty timbers in mixed forest of the Huon District⁶⁸

		Mean diameter	Mean diameter increment	Mean age	Density
<i>Species</i>	<i>Common name</i>	<i>cm</i>	<i>cm/year</i>	<i>years</i>	<i>stems/ha</i>
<i>Acacia melanoxylon</i>	Blackwood	24.8	0.41	61	50
<i>Eucryphia lucida</i>	Leatherwood	18.5	0.26	71	206
<i>Nothofagus cunninghamii</i>	Myrtle	16.7	0.28	60	164
<i>Atherosperma moschatum</i>	Sassafras	14.1	0.21	67	68
<i>Phyllocladus aspleniifolius</i>	Celery top pine	11.4	0.16	71	110

6.2 Review specifications and allocation criteria

As identified in **Section 4.4**, specifications for specialty timber sawlogs are currently too stringent which often leads to the wastage of timber that is valued by specialty timber workers. The blueprint recommends the development of new specialty timber specifications. Current specifications are a product of a clearfelling regime, which means that classification occurs only after the trees are cut down. This ensures that there are many immature logs which achieve none of the existing grades of commercial timber and are either burnt or woodchipped. The new specifications would be made on a tree by tree basis during the harvesting process, shifting the focus to which trees are appropriate to harvest; for example those of a predetermined commercial size (nominally 40 cm). Such a system would require that trees not meeting the specification, or deemed important as habitat trees, would be required to be left standing. Breaches of the system could be discouraged by fines.

The way specialty timbers are currently allocated needs to be reviewed. Future allocations of specialty timbers must be determined on the following criteria:

- by the efficiency of sawmills to recover the maximum amount of timber;
- the ability to value-add and downstream process within Tasmania;
- preparedness/ability to pay for the timber through an auction system which would favour buyers with high value end uses.

Such a system would favour the use of specialty timbers within Tasmania for applications such as furniture design, veneer products, boat building or craft. Encouragement of high value uses would reduce commercial pressure for conversion of forests rich in specialty timbers to eucalypt.

⁶⁸ Hickey, J. & Savva, M. (1992). *The extent, regeneration and growth of Tasmanian lowland mixed forest*. Forestry Commission, Tasmania.

6.3 Harvest selectively

An important issue in the harvesting of specialty timbers and their long-term sustainability is whether they regenerate following harvesting. Tasmania's specialty timbers (with the exception of blackwood) have evolved to regenerate without catastrophic disturbances such as fire. Research has demonstrated that specialty timbers regenerate much more effectively following disturbance rather than burning⁶⁹. Regeneration occurs when seedlings colonise gaps created by death and/or fall of older trees. Survival of specialty timber seedlings is greatest in partial shade as small seedlings are susceptible to summer drought in open conditions. Clearfelling is not appropriate as a method of harvesting when the intention is to regenerate rainforest species⁷⁰.

Selective harvesting trials would need to be expanded from those conducted at the Warra Long Term Ecological Research Area in the Huon Valley, which took place in 2000-2001. The use of very expensive and inappropriate methods of harvesting at the trial resulted, not surprisingly, in the conclusion that the exercise had been an unprofitable one⁷¹. There is a great deal of expertise within the Tasmanian community and overseas on low-impact timber harvesting methods. The Specialty Timber Management Commission outlined in **Section 6.1** would help to effectively capture the skills and experience from operators who have selectively harvested timber for many decades. Alternatively specialty timber licenses could be issued preferentially to operators with portable mills who are able to process logs in the forest.

An appropriate occupational health and safety (OH&S) regime would need to be re-created for selective harvesting (particularly as it is currently dismissed as 'unsafe') before the expertise has to be re-invented by a new generation.

6.4 Establish chain of custody and certification

Product certification and chain of custody labelling needs to be made mandatory on Tasmanian forest products sourced from genuinely, ecologically sustainable managed forests. Certification is likely to be a requirement of market access in the future and such a system will give Tasmanian products a market advantage and price premium. Forestry Tasmania's use of ISO 14001 and/or Australian Forestry Standard is not adequate because these standards are process based rather than outcome based and have little to do with ecological sustainability.

'Chain of custody' initiatives have already been implemented in Tasmania. The Huon Pine Chain of Custody project has been established to work towards a legal and sustainable supply. The project set out to establish a system for documenting Huon pine from source through processing to final product, including sales and purchasing systems for all legally sourced Huon pine⁷². The system is problematic in that it excludes currently held private supplies.

⁶⁹ Hickey, J. & Wilkinson, G. (1999). Long term regeneration trends from a silvicultural systems trial in lowland cool temperate rainforest in Tasmania. *Tasforests* 11, p 1-22.

⁷⁰ Ibid.

⁷¹ Hickey, J. Warra Silvicultural Systems Trial, Special Species Sawmillers Field Day, 25 January 02 circulated field notes.

⁷² "Keeping track of Huon pine", *Branchline*, Volume 6, p12. Forestry Tasmania publication.

7 Conclusion

The purpose of this document was to provide a blueprint for the long-term ecologically sustainable supply of specialty timbers for the Tasmanian furniture, boat-building, interior design, and craft-wood industries. The document provides information about the industry and highlights concerns over supply sustainability issues. The document also offers solutions to arrest the current lack of sustainability and to facilitate a thriving specialty timber industry in Tasmania that respects the resource and the people that use it, in perpetuity.

Implementing the recommendations of this paper will provide a solution that is not only important to those who rely on an ecologically sustainable source of special species timber for their future livelihood, but which can remedy the intractable nature of the Tasmanian forest debate. The document redefines the argument in the new context that the RFA has created, but to which the RFA fails to provide a solution.

The document argues for the abandonment of the current divisive strategy of proposing the sourcing of specialty timbers from predominantly pure rainforest areas of world conservation significance, thus setting users of special timbers against conservationists. Instead it proposes the sourcing of special timbers from appropriate mixed wet forests throughout the State. It defines the remaining argument as a discussion, not only about which areas may be harvested, but also the method of harvesting in the timber production areas for the benefit of all of the Tasmanian community rather than a small part of it. The paper also prescribes appropriate methods for different kinds of production. It recognises the legitimacy of all points of view and the complexity of the problems, and it recommends a course of action that will actually achieve the objectives of the RFA while avoiding its current divisive effect on Tasmanian and Australian society.