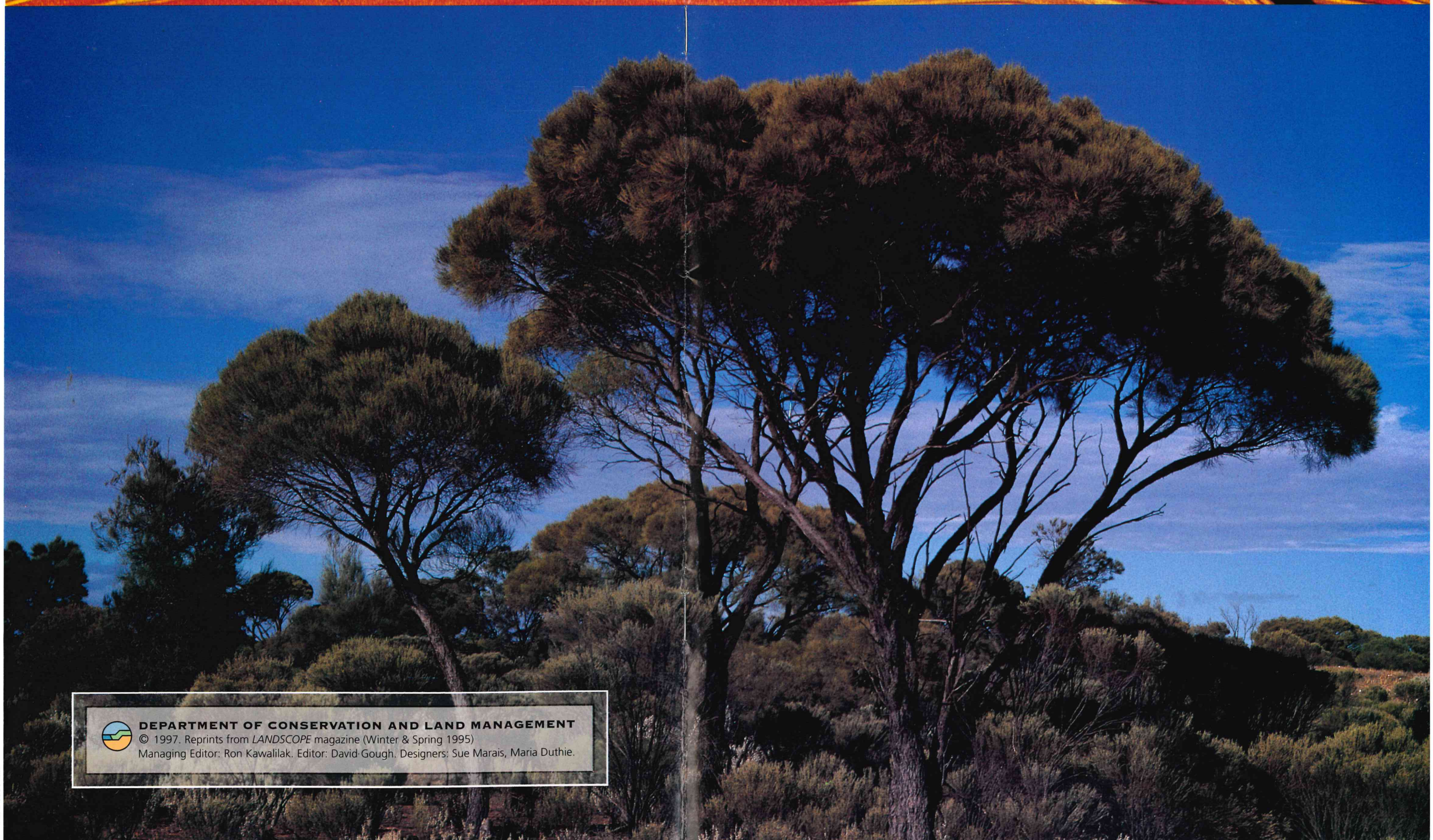
Specialty Timbers of the Goldfields



DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

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Western Australia's Goldfields is a place of surprises. It is well known for its rich culture and history from the goldrush days to its present status as a mining centre of international repute. Less well known, however, are its diverse and beautiful woodlands, particularly the vast eucalypt and mulga woodlands, where a wide range of plants and tall trees abound. Nowhere else in the world are there so many different tall trees in such a dry climate.

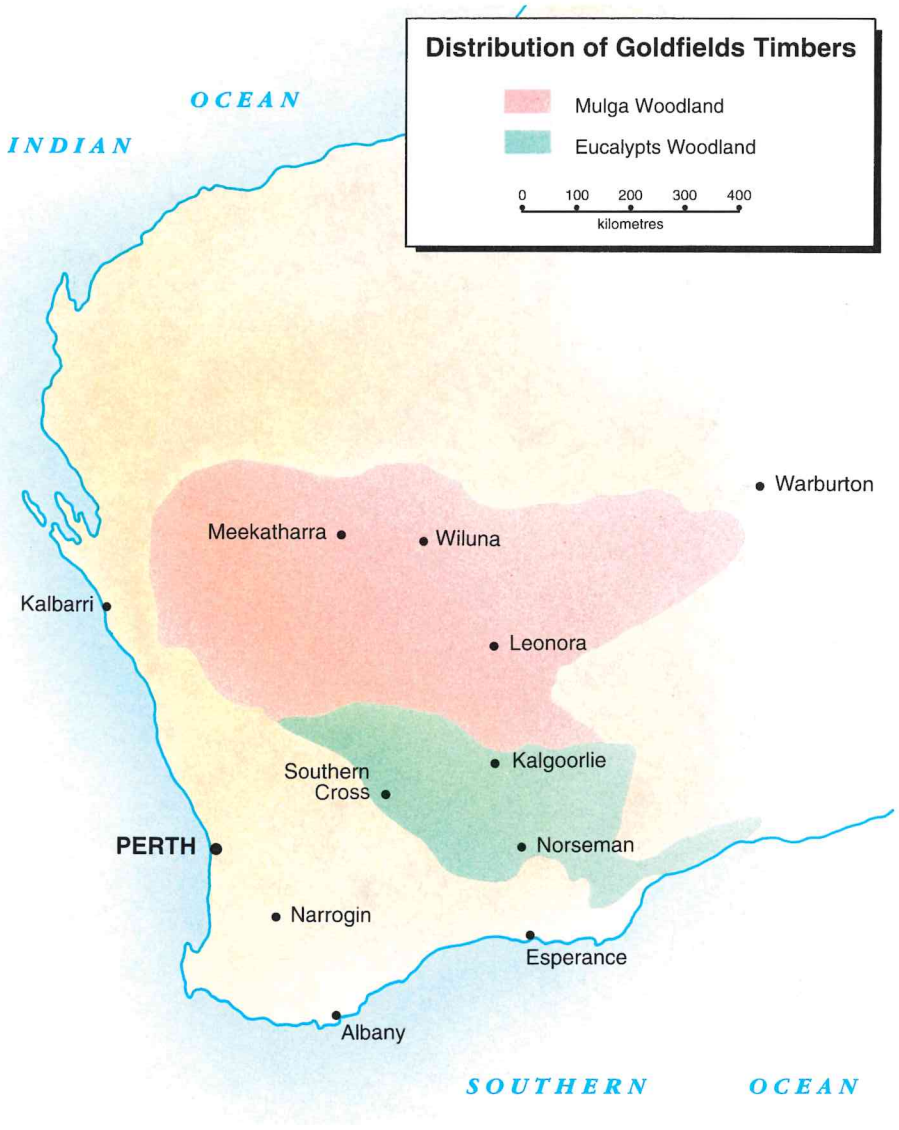
It comes as a surprise to many people to learn that there are around 50 different species of eucalypt in the Goldfields woodlands around Kalgoorlie and Boulder. In the 35 kilometres between Coolgardie and Kalgoorlie alone, 14 species can be found. These eucalypts thrive in the arid interior of Western Australia and range from 25 metre salmon gums to the smaller bronze-barked gimlet and mallees.

North of the eucalypt woodlands are the low acacia woodlands, consisting mainly of mulga trees which grow up to five metres tall. Mulga is the dominant vegetation of the North-Eastern Goldfields region and was used extensively during the pioneering days for fuel, fence posts and charcoal. Acacia woodlands also contain a wide variety of other plants and trees.

Much of the Goldfields woodlands is 40–100 year old regrowth, the result of clearfelling operations undertaken for 'woodlines', narrow gauge railways that radiated out from Kalgoorlie-Boulder and other mining towns. These woodlines transported timber into the mining towns and supplied fuel for boilers and to generate electricity and pump water.

Both the eucalypt and acacia woodlands have regenerated naturally over the years and have now come full circle. With careful management they will continue to support sustainable levels of harvesting for mine timber, fence materials, firewood, craft and specialty timber use.

These woodlands are the resource base for the expanding low volume/high value Goldfields specialty timber industry, which uses boutique timbers with a wide variety of colour, grain and density, offering the potential for a vast range of specialty and craft uses.



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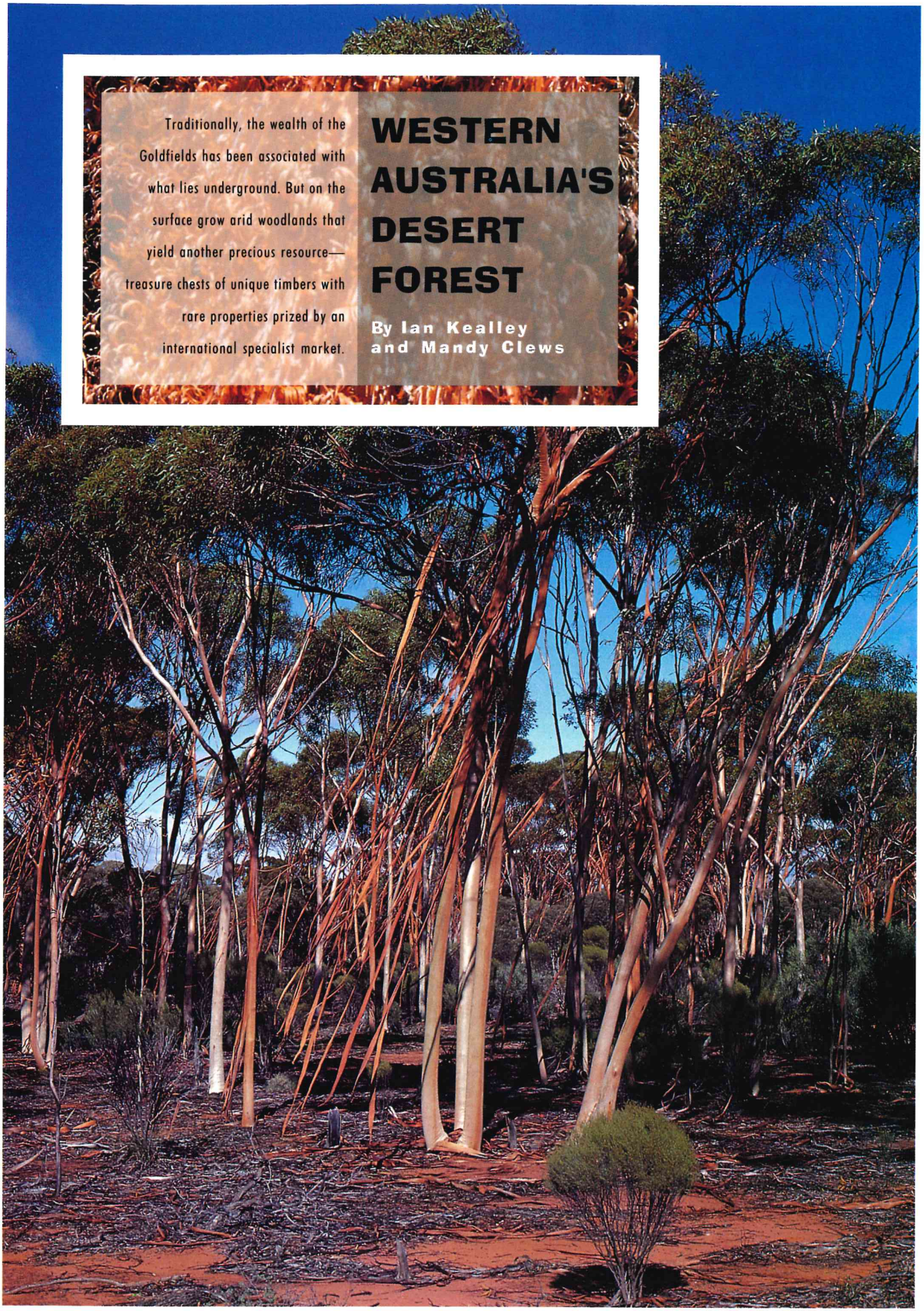
Western myall *(Acacia papyrocarpa)*, one of a number of Goldfields boutique timbers that are gaining recognition for their use in a wide range of speciality and craft products.
Photo – Grant Pronk/CALM



Traditionally, the wealth of the Goldfields has been associated with what lies underground. But on the surface grow arid woodlands that yield another precious resource—treasure chests of unique timbers with rare properties prized by an international specialist market.

WESTERN AUSTRALIA'S DESERT FOREST

By Ian Kealley and Mandy Clews

As the name testifies, the Goldfields region has a glamorous history of boom-and-bust goldrushes, of cities springing up overnight and disappearing just as quickly. Swag-bearing prospectors combed the countryside, leaving behind fascinating middens of old artefacts. Pastoralists fenced the land, introduced livestock and pushed back the boundaries of the red centre. This is the story we all know; it is the lore of the frontier country.

But accompanying the sometimes frenzied activity that gave the Goldfields its name, was a less publicised industry, one that was equally important to the development of the region: forestry. For contrary to the popular image, the region is not merely a vast inland sea of low scrub as far as the eye can see. Rather, there are tough stands of extraordinarily adapted eucalypts and acacias that rise from the dusty plains, defying the parched environment. This is a land rich in timber, timber of exceptional character.

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Main: 1920 regrowth capped mallee (*Eucalyptus pileata*), near Bullabulling. Notice the ribbon bark, which is shed annually.
Inset: Minirichie bark.
Photos – Steve Hopper

Above right: Victoria Desert mallee (*E. concinna*) produces fine brown timber with woodwind instrument potential.
Photo – Steve Hopper

Below: Logging 1920 regrowth red morrel (*E. longicornis*) at Jaurdi Station.
Photo – Steve Sadler

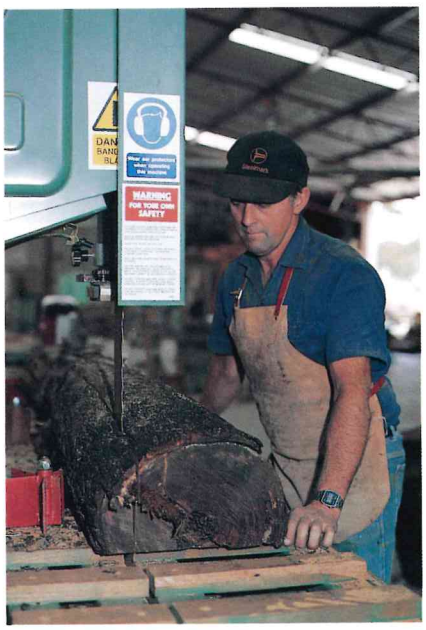
Below right: Phil Panton of Timbers of the Goldfields sawing Goldfields blackbutt (*E. lesouefii*).
Photo – Steve Sadler

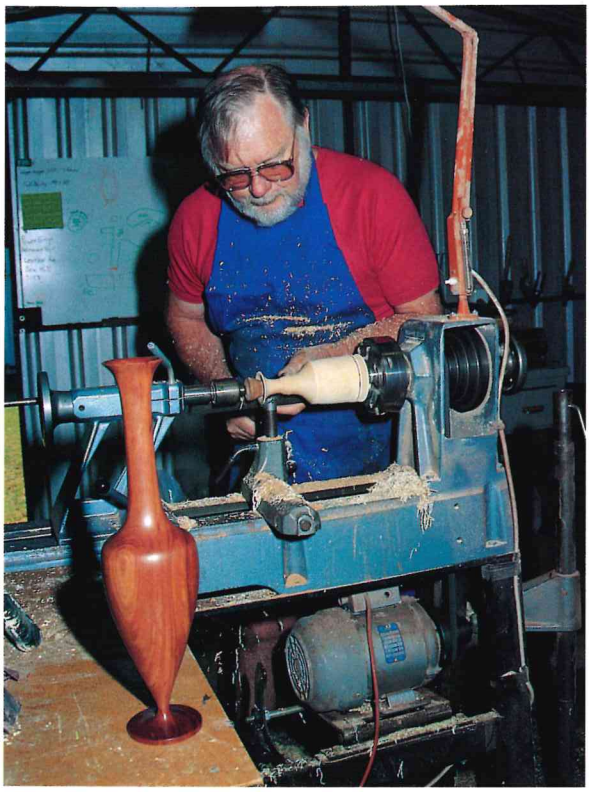
TREES AMID THE GOLD DUST

As early as the first gold rushes of the 1890s, timber that was needed for mining infrastructure, fuel and construction was extracted fromwoodlands surrounding the present site of Kalgoorlie-Boulder. As demand increased, an elaborate network of narrow-gauge railways, called the Woodlines, was developed by opportunistic timber and firewood companies. The wide swathes through the bush that marked the routes of the Woodlines can still be followed today.

At their peak, the Woodlines were supplying more than half-a-million tonnes of timber a year. Between 1900 and 1965, three-and-a-half million hectares of eucalypt and acacia woodland were clearfelled or cut over, yielding an estimated 30 million tonnes of timber, which fed the ever-burgeoning mining industry and towns. The wood also satisfied a wider demand for sawn timber, railway sleepers and domestic fuel.

Nature was tolerant of those early harvesters, who had a pressing, high-volume need for an available resource, the character of which they didn't fully appreciate. The three million hectares that were virtually stripped bare are now covered with a vigorous new layer of 40 to 100-year-old regrowth woodland, whose remarkable timber properties are only now coming to be understood. In the region extending from the edge of the Wheatbelt to the Nullarbor Plain and inwards through





Left: Kalgoorlie wood-turner Peter Grainger turning native willow after completing a redwood (*E. transcontinentalis*) vase.
Photo – Steve Sadler

Below left: Sawn boards and Goldfields craft timber species stored ready for drying at Timbers of the Goldfields.
Photo – Steve Sadler

Below right: The solar kiln installed at Timbers of the Goldfields for seasoning sawn timber and for research purposes.
Photo – Steve Sadler

pastoral and desert country, a further five million hectares of uncut eucalypt woodland and 15 million hectares of acacia woodland offer up hundreds of species to be explored by a small but intensive specialist market.

WOOD THAT SINKS

The woodlands of the Goldfields are a marvel of nature. Nowhere else in the world does such an arid environment support vegetation of such density and size. An average annual rainfall of 250 millimetres puts the region on a par with arid areas of Arizona, Southern Africa, and the Mediterranean. But woodlands are not normally a feature of such landscapes.

Adapted to harsh, dry conditions, these species have to be tough. As a result, they are extremely slow-growing. This is one feature that gives them their quirky edge as speciality timbers: they are extraordinarily dense.

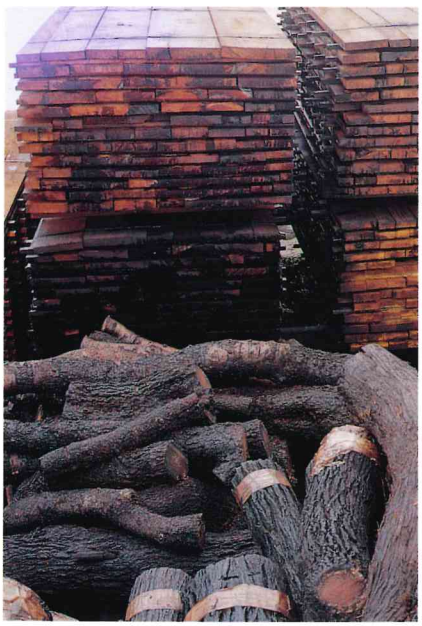
Density is measured as a ratio of weight to volume. Jarrah, the well-known and widely-used South West timber, is described as a 'dense hardwood'. It has a dry density measurement of 850 kilograms per cubic metre (kg/m^3). Anything higher than 1000 kg/m^3 sinks in water. Most Goldfields eucalypts have a dry density measurement greater than 1100 kg/m^3, ranking them among the densest timbers in the world.

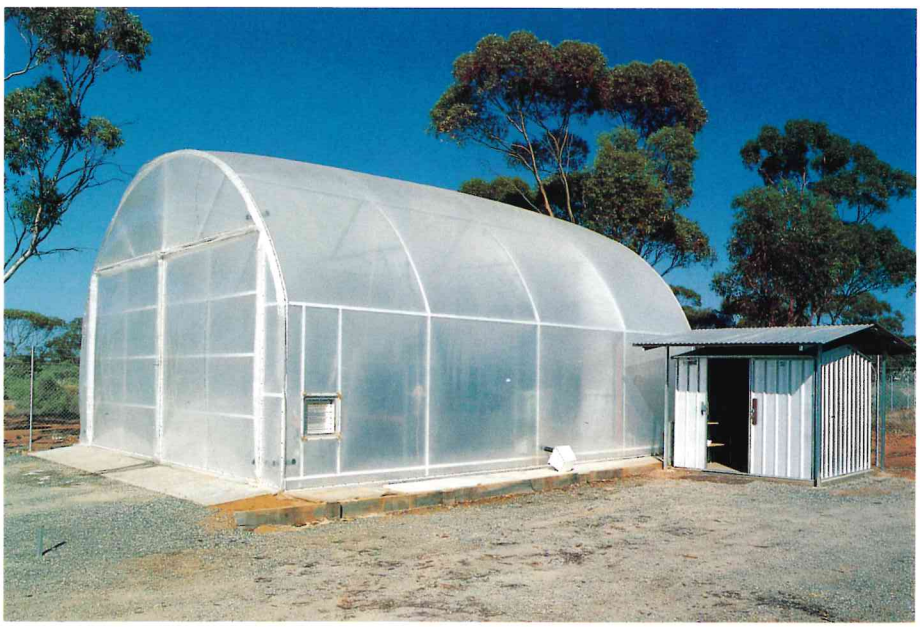
JEWELS IN THE MARKET PLACE

While not a friendly attribute to many mass-market wooden products, high timber density is a valuable feature in the manufacture of certain speciality items, particularly those that are subjected to sustained high-impact use, such as percussion musical instruments, parquetry flooring, specialist furniture and joinery.

Another unique feature of the Goldfields woodland species is their very low green moisture content. While green moisture proportions of as little as 30 per cent cause some unusual problems for seasoning sawn timber, they are a dream for wood-turners. With such low moisture, Goldfields species yield unusually stable unseasoned timber. Because the green wood is much easier to handle, these timbers make much more efficient material for wood-turners, who can bring their product a lot closer to completion before seasoning.

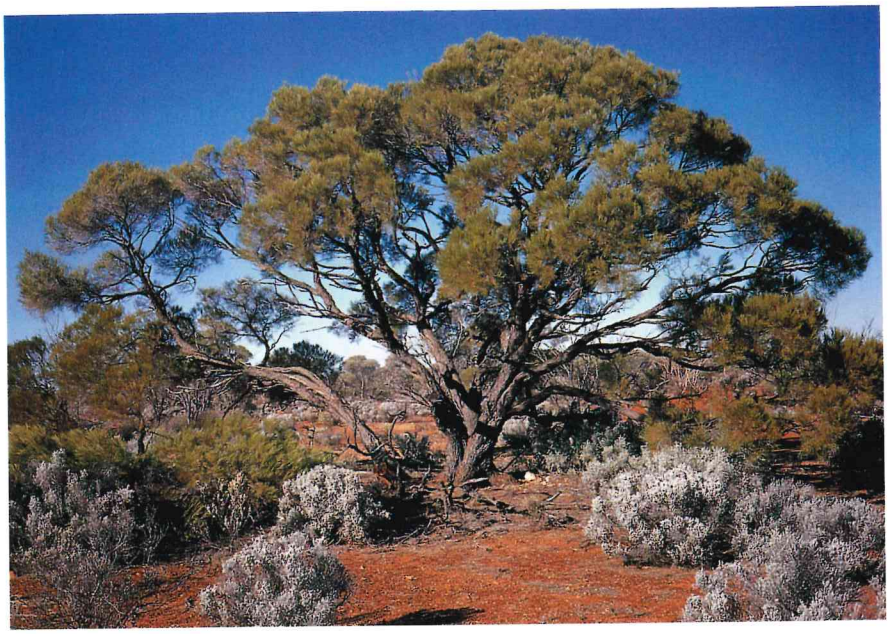
Added to these unusual features is the attractive appearance of Goldfields timbers: the creamy-coloured native willow (*Pittosporum phylliraeoides*) with its lace-like 'fish scale' patterning; the subtle red–pink hues of the red eucalypts, including the almost blood-red Dundas mahogany (*Eucalyptus brockwayii*). The list goes on: the superbly patterned gimlet (*E. salubris*) is distinctive for its deeply





figured, fine grained timber, the result of natural fluting of the trunk, and its walnut-like streaks of brown. The extremely dense (1 300 kg/m^3) and hard western myall (*Acacia papyrocarpa*) varies in colour, depending on the growing area, from rich chocolate brown near the Nullarbor to golden brown in the heart of the Goldfields, and bears a gold fleck and striking ripple grain, which gives it a three-dimensional appearance. And the white cypress pine (*Callitris glaucophylla*), which is yellow, brown and tan with streaks of varied colour, has the added bonus of an unusual and appealing aroma. These are features that delight the senses. They are the raw materials for fine artistry, and they represent only a handful out of more than a hundred species that have so far been sampled and described. There are many more yet to be explored among the diverse vegetation and species of the region.

Given this rich resource, sawmillers, joiners, wood turners and crafters are limited only by their imagination to find niches in the speciality market. This is a 'top-shelf' enterprise, where only small amounts of timber are required to produce one-of-a-kind luxury products. A brown, deeply figured section of gimlet, for example, swept with a swirling grain, might compete well with prize jarrah for the attention of someone wanting an attractive coffee table. A high-quality, intricate inlay of luscious, ruby-red Dundas mahogany might be the only suitable finishing touch to the front door of your dream home. Attractive gift items and novelties such as wind spirals, vases, bowls, coasters, pens, trophies, jewellery—the list is endless—all have a place in a high-premium market.



Above: Western myall woodland fringing the Nullarbor Plain.
Photo – Steve Hopper

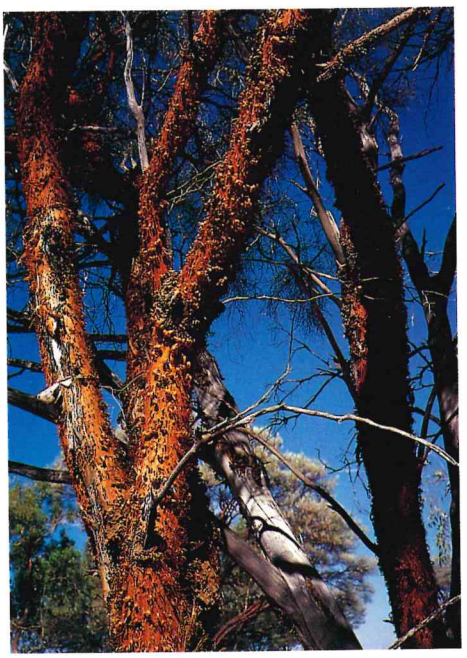
Below left: Creekline minirichie (*Acacia cyperophylla*) east of Wiluna.
Photo – Ian Kealley

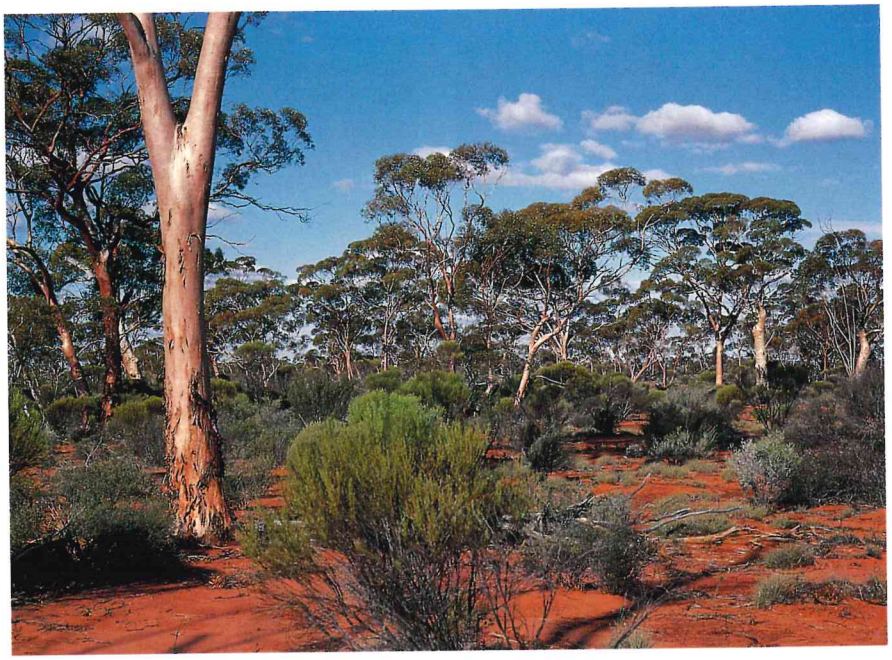
Below right: Mature Goldfields eucalypt woodland dominated by salmon gum (*E. salmonophloia*).
Photo – Steve Hopper

SUSTAINING THE RESOURCE

With renewed interest and increasing demand for the Goldfields timbers, careful planning is necessary for their management. Long gone are the days of the Woodlines, when mass quantities of timber were there for the taking. Goldfields logging is now conducted under strictly regulated harvesting contracts and forest produce licences issued by CALM. Trained specialist contractors carry out a highly selective thinning of the regrowth woodland, extracting specific sawlog or speciality timber products. Sawlog yield will be less than one tonne per hectare. Timber is also salvaged ahead of minesite clearing.

Speciality timbers from the wide range of other non-sawlog Goldfields





species are also opportunistically collected by contractors for research purposes and under Forest Produce Licences. Conditions for this collection are strict and cutting is rigorously controlled. Planning is also under way to determine the future use of the large resource available from the millions of untapped hectares of Goldfields woodlands.

BEYOND THE GOLD HORIZON

Forestry has a long association with sustainable and renewable resource management, carried out in one way or another over centuries of varied land use. The Goldfields are no exception. But the industry that was once a secondary support to the extraction of gold from the ground has become, this time around, a pursuit in its own right.

The revival of the timber industry in the Goldfields has brought land use full circle, and the different culture that now prevails is a mark of progress. It provides a welcome diversification of land use in an area where mining and pastoralism have dominated. But perhaps more significantly, where trees were once clearfelled to feed the most basic needs of a greedily growing gold industry, they are now gently, almost lovingly, hand-picked and handled, to add the most elegant and subtle aesthetic detail to our lives. In the legendary riches of the Goldfields, these are the gems among the gold.

FROM FLUTE TO FRUIT: THE GOLDFIELDS SPECIALTY TIMBER INDUSTRY GROUP

The dormant potential for Goldfields timber might still be asleep today had it not been awakened in the mid 1980s by a chance holiday encounter between an American music professor and a travelling Western Australian forester. The University of Washington's Professor Felix Skowronek was on a long-term world-wide quest to find dense, hard timbers to make thin-walled flutes, when he heard about the Goldfields. He began steady correspondence with CALM's Goldfields Regional Office, which culminated in visits to the region in 1988 and 1993 to gather samples.

Media coverage of, and timber collecting during, Professor Skowronek's first visit stimulated a lot of interest among hobby and professional woodworkers in Western Australia, who began to contact CALM in increasing numbers. In 1991, CALM opened public discussion on the potential for a speciality timber industry for the Goldfields. The response was strong enough for an introductory meeting to be held later that year, and in 1992, the Goldfields Specialty Timber Industry Group (GSTIG) was officially formed, incorporating in May 1993.

One of GSTIG's first undertakings was to organise a Woodline Festival as part of Kalgoorlie-Boulder's 1993 centenary celebrations. The festival, which involved an exhibition, historical display, demonstration, field trip, musical instrument-making workshop and sales, was an unmitigated success.

GSTIG supported an initiative by Timbers of the Goldfields, a private company owned by local operator Phil Panton, to construct a solar kiln based on technology developed by CALM's Harvey Wood Utilisation Research Centre. Boosted by a $25 000 grant from the Federal Government's Renewable Energy Research program, the kiln has allowed sawn timber to be experimentally seasoned under controlled conditions.

GSTIG is also involved in a $140 000 program of research funded by the WA Government Regional Initiatives Fund, private enterprise, CALM and the Goldfields Esperance Development Commission. A locally based committee, which includes Kalgoorlie College, is steering the project, which involves identifying the properties, sawing and seasoning characteristics and overall potential of timbers for application in a wide range of specialist markets. GSTIG now has some 65 members who meet monthly to discuss the issues arising from their sunrise industry, and to organise field trips, craft workshops, wood-turning courses and other activities.

And the flutes? Professor Skowronek's project is still in progress, with some promising interim results identifying some timbers as being world class woodwind instrument timbers. With hundreds of timbers yet to be tested, his partnership with the Goldfields is far from over.

GSTIG can be contacted at PO Box 10173, Kalgoorlie 6430, or phone (090) 21 2677.

Bowl turned from berrigan (*Eremophila longifolia*) by Bill Moriarity of Kalgoorlie. Goblet and flower turned from sandalwood (*Santalum spicatum*), and carved by Gordon Ward of Kelmscott.
Photo – Steve Sadler

Ian Kealley is the CALM Goldfields regional manager. He can be contacted on (090) 21 2677.

Mandy Clews is a contributing editor to *LANDSCOPE* and can be contacted on (09) 430 7032.

musical TIMBERS

Makers of woodwind instruments are on the lookout for a new source of timber to supply a significant international market. So far, much of the search has concentrated on the tropical species of Latin America, Africa and Asia. But Felix Skowronek, Professor of Flute at the University of Washington, had the visionary idea of looking to Australia for this new source. After nearly ten years of research with flute head-joints, he believes he may have found what he is looking for in the unique timbers of the Western Australian Goldfields. BY FELIX SKOWRONEK AND IAN KEALLEY

The sweet, melodious tones of the flute are popularly associated with idyllic outdoor settings. Perhaps this is because, in Greek mythology, the flute was the favoured instrument of Pan, the god of Nature. The thin, whispery quality of the reed flute that Pan played is a long way from the bright, intense, and versatile range of sounds we now associate with the concert flute. But the bucolic origins are still there, echoing faintly behind the trills and flourishes of our modern-day virtuosos.

For the uninitiated, it often comes as a surprise to learn that the modern flute, clad in its armour of silver, gold, or platinum, is a member of the woodwind family of instruments. But until this century, all flutes were made of wood, with the metal version becoming the norm only since about 1920. In Great Britain, wood flutes continue to be made to this day, but only by the handful compared with the numbers turned out up to about 1950.

The wooden tradition, however, is not disappearing. Far from it. There is still an abiding respect among flautists for the sonoric capabilities and the overall aesthetics of wood as a medium, and in recent years there has been a resurgence in demand for the wooden product. There has been some experimentation with synthetic materials, but precious woods will always have a fascination and value as a natural and time-honoured source of beauty and function.

Not many timbers around the world have the density and mass necessary to produce the brilliant tone we have come to expect from the modern instrument. Supplies of the traditional flute-making timbers—the African blackwood and the West Indian ebony—are nowadays in doubt. African blackwood is still available commercially, but it is harder to obtain now than it was in the hey-day of the wooden flute, and it is of poorer quality. West Indian ebony is simply not available. Around the world, the search is on for materials to replace these classic woods.

Many of the slow-growing timbers of the Goldfields are showing great potential for the fashioning of 'head-joints' (i.e., mouthpieces) which can be fitted onto the metal body of the flute, creating a hybrid instrument capable of whole new dimensions of sound quality. With the support of the Goldfields Specialty Timber Industry Group—through the Goldfields regional office of the Department of Conservation and Land Management (CALM)—researchers based at the University of Washington,

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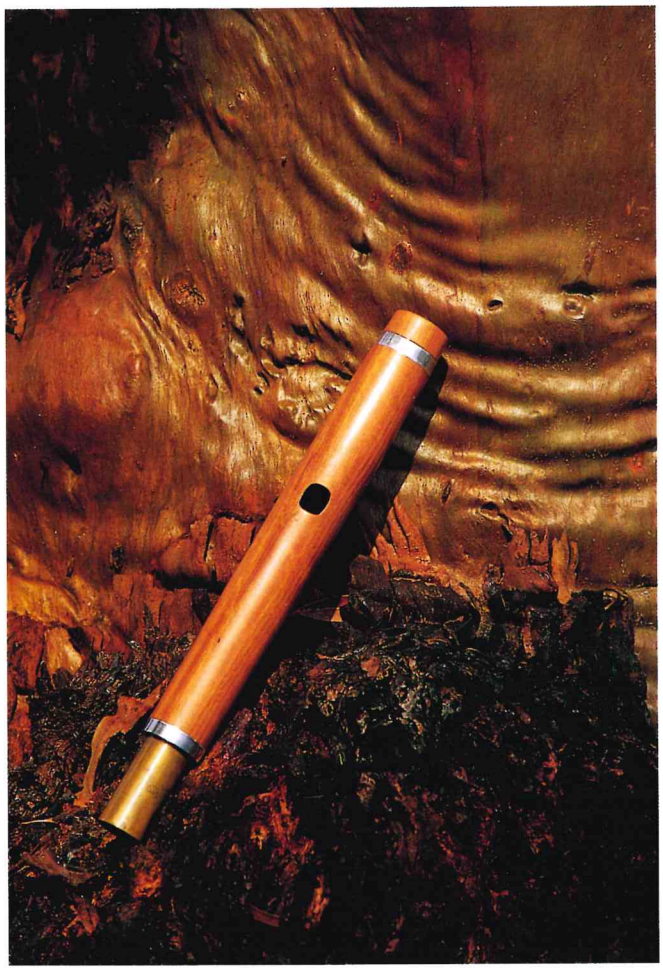
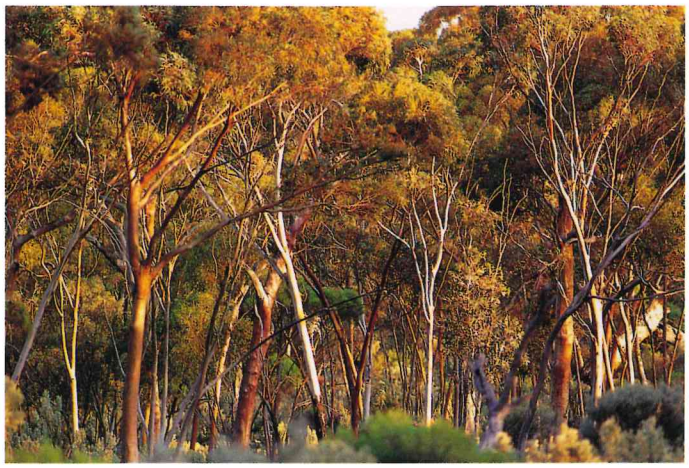
An array of Goldfields timber head-joints illustrates an attractive range of colours and grains.
Photo – Felix Skowronek
Insets: Barks from Goldfields species—gimlet, merrit, mulga, Webster's mallee.

Below: From the raw materials to the finished product: an elegant gimlet head-joint against gimlet bark.

Below right: A typical Goldfields woodland scene: a 90-year-old regrowth thicket of mixed species that could provide materials for world-class musical instruments.

Bottom: Although its range extends across Australia, the mulga of the Goldfields has harder, heavier and finer grain than its Eastern states counterparts.





Left: The woodlands of the Goldfields are taller, denser and more extensive than many people realise.

Below (from left to right): Potential musical instrument timbers in their natural settings—salmon gum, Goldfields blackbutt, boree.

Seattle, have sampled a range of species to this purpose, yielding some very interesting possibilities for certain timbers to create the flutes of the future.

WHAT'S IN A HEAD-JOINT?

The head-joint is the tone-generating element for the flute. Its special importance as part of the entire instrument was long recognised, but has only recently been separated from the construction of the entire instrument. But the head-joint is the key to instrument's sound qualities.

Its manufacture is relatively simple: a tapered-bore length of tube of definite dimensions, with an 'embouchure-hole' (i.e. blow-hole) carved into the tube at a certain point. Unlike the rest of the flute, there are no moving mechanical parts involved.

The rest of the instrument, in contrast, consists of a sophisticated and delicate system of keys, rods and springs by which the various tone holes in the body and foot are stopped in order to determine the different notes to be played. The dimensions of the body and foot joints of the flute remain much as they were more than a hundred years ago, and the mechanics are standard to manufacturers the world over.

The head-joint, however, carries one feature that has resisted standardisation and thus has remained at the last frontier of flute making: namely, the dimensions and carving of the all-important embouchure-hole. While a set of basic dimensions and wall-angles has been loosely adhered to for the last century or so, details have varied widely, from almost-round holes to oval or rectangular, in the quest for the ideal balance between maximum tone and volume, as well as ease of articulation.

In the last 10–15 years, the manufacture of head-joints has become so specialised that a growing industry has emerged in the custom-making of flute head-joints. It is not at all unusual nowadays for a performer to be playing a flute with a head-joint made by someone other than the original manufacturer of the instrument.

But head-joint-making, for all its recent successes, is still an inexact science. Every flautist's facial muscular structure is different, and indeed, different flautists can sound vastly different using the same head-joint. And the embouchure-hole is not the only factor. The material of which the head-joint is made also makes a considerable difference to the sound of the instrument. And here again, there is a degree of inexactitude that could drive the technicians mad, if it were not for the beautiful music which can result.

One of the Goldfields' most memorable landscapes: gimlet trees with an understorey of pearl bluebush (*Maireana sedifolia*) and saltbush (*Atriplex* sp.).

Below left: Merritt is well suited for producing a baroque sound quality.

Below right: Giant mallee is one of several red heartwood species that have provided the hardest materials for head-joint making.

MAKING THE DIFFERENCE

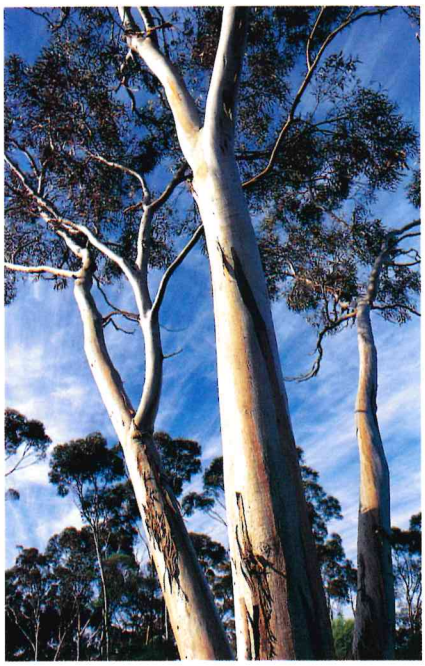
Although the average listener may not discern them all, the flute is capable of an astonishing range of tone qualities to suit different musical styles. For example, a professional musician might describe 'modern' sounds as hard, firm, brilliant, projecting; 'romantic' as broad, mellow, full; 'baroque' as soft, dulcet, open; 'jazz' as hard, loud, airy; or 'folk' as thin, airy, hollow or haunting. A skilled player can achieve most of these qualities on a single 'modern' metal or wooden head-joint, but to do so requires adjustments to the embouchure (mouth position)—making it artificial to the player's natural style—and the head-joint design.

In the sampling of Goldfields timbers, the intriguing possibility is emerging that certain tonal characteristics might be 'built-in' to particular species, regardless of the measurements and cut of the embouchure-hole. This is contradictory to a popular scientific theory that an instrument's tone is not affected by the material from which it is made. But this is an area where subjectivity must reign, for what a performer 'feels' in the response of his or her instrument presides over any judgement, and it remains a tantalising idea that flautists of the future may be able to change head-joints every time they change musical styles.

THE SCIENCE OF SOUND

Over the years, a number of scientific experiments have failed to convince performers that the materials from which flutes are made have less effect on the tone of the instrument than factors such as measurements and vibrations. Scientific fact in this instance carries little meaning. Performers are, after all, the ones actually playing the instruments, and what they feel determines their attitudes about materials. Among the metals of choice for the flute, silver is thought of as bright and projecting; gold, mellow and full; and platinum, hard and brilliant. Wood, thought of as being mellow or soft in quality, perhaps akin somewhat to gold, actually tends to combine elements of all the others, though is generally more resistant and harder to blow.

So what does this all mean as far as wood and flute tone is concerned? Generally, it is assumed that the harder and denser the material, the brighter and fuller the tone. The 'inventor' of the modern flute, Theolbald Boehm, observed in the mid-19th century that very hard wood produced a more brilliant, ringing sound. If any attempt is to be made to use wood to make a modern flute, the heaviest and densest specimens are likely to be most successful.



WHAT THE GOLDFIELDS OFFERS

Regular *LANDSCOPE* readers will know about the remarkable density of Goldfields timbers (see 'Western Australia's Desert Forest', *LANDSCOPE*, Winter 1995). Most species from this arid region sink in water. These are obviously not the best timbers for making floats. But

for flutes, they could well be ideal.

An amazing array of hard, heavy, fine-grained timbers grow here, which compare favourably against similar species elsewhere in Australia. Of the three eucalypt heartwood-colour groups of red, brown, and green, the reds have provided the hardest materials for head joint making, notably giant mallee (*Eucalyptus oleosa*), red morrel (*E. longicornis*), salmon gum (*E. salmonophloia*), and redwood (*E. transcontinentalis*). The latter three are endemic to the Goldfields and adjacent Wheatbelt.

The mulga (*Acacia aneura*) of the Goldfields appears to be harder, heavier and finer-grained than anywhere else in Australia, and has so far stood out as prime head-joint material. Also among the acacias, western myall (*A. papyrocarpa*) differs markedly in hardness and density from the lighter weight eastern myall (*A. pendula*), found in Queensland and New South Wales. Likewise, the closely related black oak (*Casuarina pauper*) of the Goldfields and Queensland's *C. cristata* appear to be one and the same tree from outward appearance. However, the heartwood of the Queensland tree is beige, while the Goldfields species is a dark chocolate brown, and is an almost uncanny look-alike for the prized West Indian ebony it seeks to replace.

To describe this field of research as exciting would be an understatement. Experimenting with these little-known hardwood species, on the edge of new developments with flute head-joint design and woodwind instrument manufacture, is a constant process of discovery and joy. Thanks to the good folks in Kalgoorlie-Boulder who have made all this possible, and under whose watchful eye the precious resource will be carefully managed, we may well be listening to and enjoying a lot of music in the future whose origins can be traced back to the Goldfields. And the Goldfields may take the credit for bringing the flute back closer to nature once again.

A KEY TO THE BAROQUE QUANDARY

Today's flautists face a dilemma when they undertake to play Baroque-era music. It has been a subject of intense debate since baroque music began enjoying a resurgence in popularity, some 25 years ago.

This historic period, roughly coincident with the life of the great composer Johann Sebastian Bach (1685–1750), saw an enormous amount of music written for the flute. The flute of that time, however, was an almost completely different instrument from the 'modern' or Boehm-system flute, invented in the 19th century. The baroque flute had only six open finger holes and one mechanical key. It had a much thinner, smaller sound than today's instrument and, as a limitation of its crude design, was extremely difficult to play in tune.

Many purists insist that the baroque flute, or a modern replica of it, is the only suitable instrument for performance of this music. This places the modern flautist in an awkward position, with only a few options available: first, to disregard completely the 'radical' attitude of those who would insist on historical correctness; second, to adopt some, but not all, of the baroque performance elements on the modern instrument; or third, to take up the baroque flute, in essence learning the new techniques and demands of an obsolete instrument.

Fortunately, Goldfields timber head-joints offer another option that goes a long way towards a fulfilling compromise on this thorny issue. Many of the less dense or lighter-weight Goldfields species seem to be well suited for producing a baroque sound quality on a flute head-joint of relatively modern design, placed on the metal body of a modern flute; essentially a composite instrument. The more fibrous eucalypts, such as Dundas mahogany (*E. brockwayi*), Dundas blackbutt (*E. dundasii*) and merrit (*E. flocktoniae*), for example, have given consistent results along these lines. Other species worth exploring further because of light-weight yet fine texture are white cypress pine (*Callitris glaucophylla*), boree (*Melaleuca pauperiflora*), and perhaps even the sapwood of the black oak.

A particularly interesting case can be made for Strickland's gum (*E. stricklandii*), which exhibits a mellow and full yet mild tone with a wonderfully 'cushiony' and reliable articulation. Heads made from this species have done remarkably well in the performance of Bach sonatas and arias on both metal and wooden flutes.

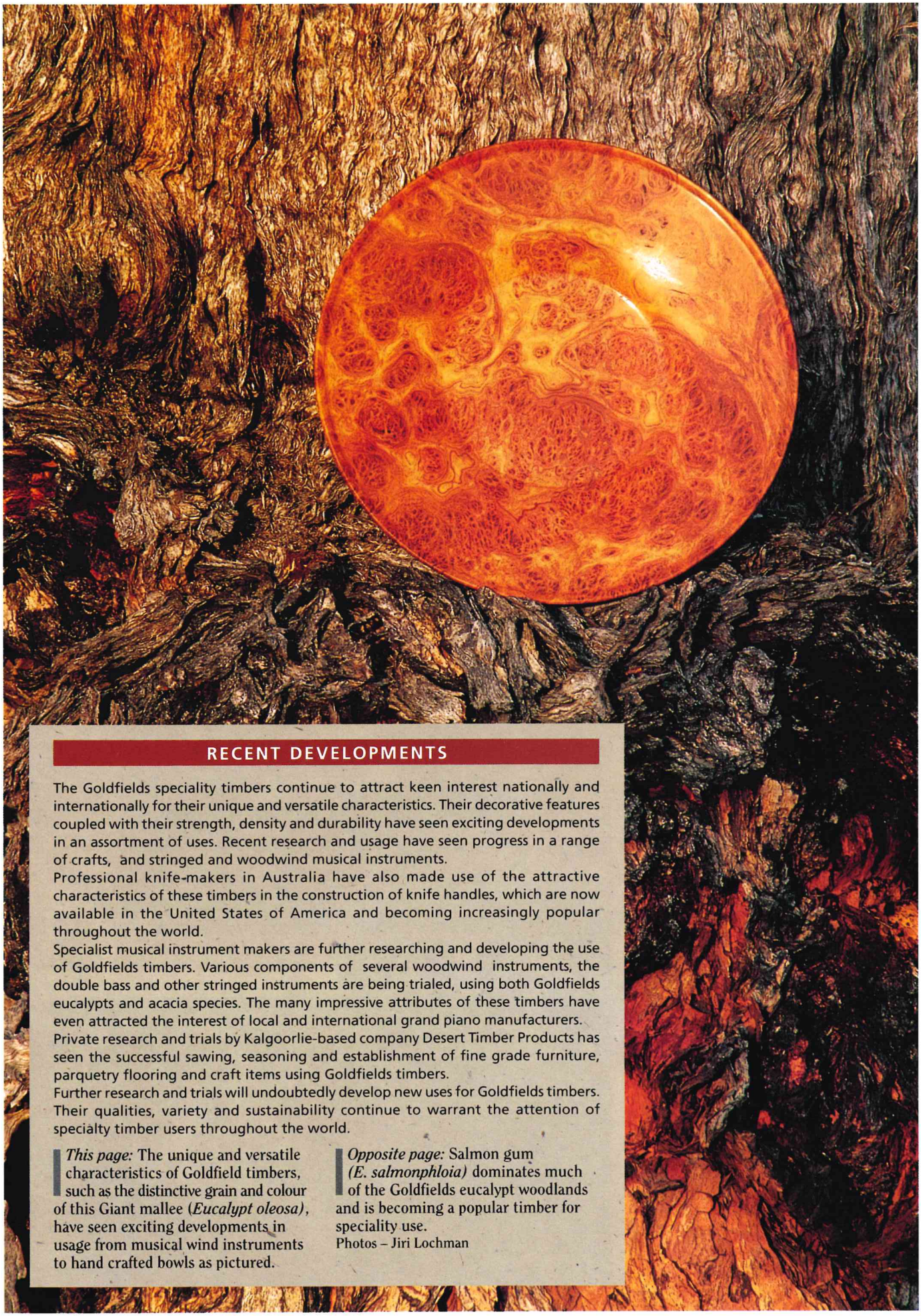
Photo – Mary Levin

The Strickland's gum headjoint blends beautifully with the soprano voice.

Felix Skowronek is Professor of Flute at the University of Washington, Seattle. An accomplished flautist, Felix was a founding member of the Soni Ventorum Wind Quartet in 1962, and has made more than 24 recordings with them. He also performs with his jazz combo, the FS Jazz Trio, which debuted at the 20th Annual National Flute Convention held in Los Angeles in August 1992.

Felix has been a leading promoter of the revival of the wooden Boehm-system flute in the USA, and through his research has become an authority on the use of new hardwood species for flute and woodwind instrument manufacture. He can be contacted on (USA) +1 206 543 9260, or e-mail: fesaushw@u.washington.edu.
Ian Kealley is CALM's Goldfields Regional Manager and has been actively involved in helping Prof. Skowronek in his search for specialist timber on the WA Goldfields. Ian can be contacted on (090) 21 7831.

Unless otherwise indicated, all photos are by Jiri Lochman



RECENT DEVELOPMENTS

The Goldfields speciality timbers continue to attract keen interest nationally and internationally for their unique and versatile characteristics. Their decorative features coupled with their strength, density and durability have seen exciting developments in an assortment of uses. Recent research and usage have seen progress in a range of crafts, and stringed and woodwind musical instruments.

Professional knife-makers in Australia have also made use of the attractive characteristics of these timbers in the construction of knife handles, which are now available in the United States of America and becoming increasingly popular throughout the world.

Specialist musical instrument makers are further researching and developing the use of Goldfields timbers. Various components of several woodwind instruments, the double bass and other stringed instruments are being trialed, using both Goldfields eucalypts and acacia species. The many impressive attributes of these timbers have even attracted the interest of local and international grand piano manufacturers.

Private research and trials by Kalgoorlie-based company Desert Timber Products has seen the successful sawing, seasoning and establishment of fine grade furniture, parquetry flooring and craft items using Goldfields timbers.

Further research and trials will undoubtedly develop new uses for Goldfields timbers. Their qualities, variety and sustainability continue to warrant the attention of specialty timber users throughout the world.

This page: The unique and versatile characteristics of Goldfield timbers, such as the distinctive grain and colour of this Giant mallee (*Eucalypt oleosa)*, have seen exciting developments in usage from musical wind instruments to hand crafted bowls as pictured.

Opposite page: Salmon gum *(E. salmonphloia)* dominates much of the Goldfields eucalypt woodlands and is becoming a popular timber for speciality use.

Photos – Jiri Lochman