

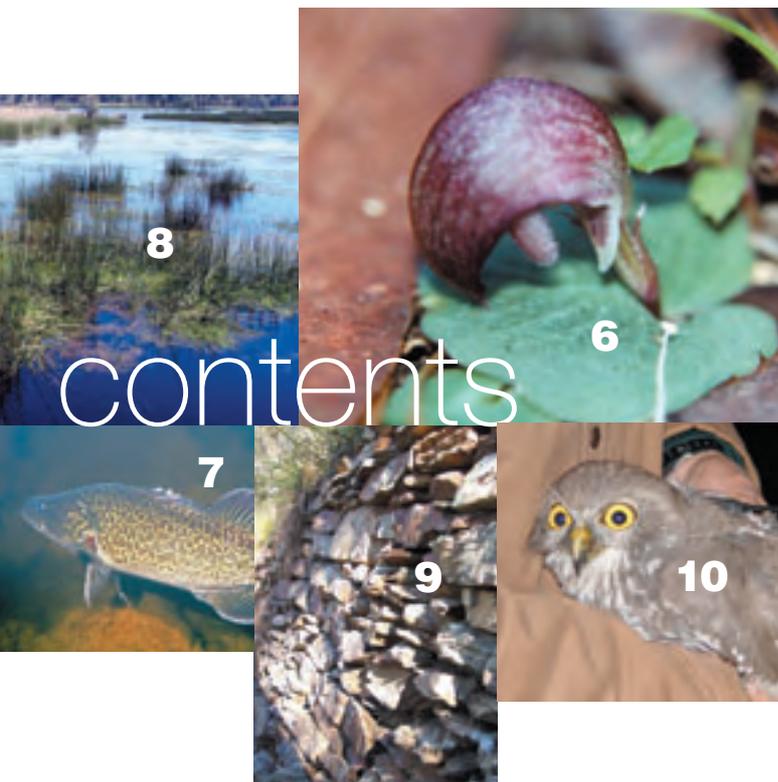


Planning a native forest harvest

Barking owls in the Pilliga

\$600 million pine supply announced

Convict history uncovered on south coast



contents

forest log

- 3 \$600 million agreement secures Weyerhaeuser's future
- 3 Seasons Greetings - then and now
- 4 Innovation and technology on show at Kempsey sawmill
- 4 20-year supply agreement boosts south coast timber industry
- 5 Trail blazing around the world
- 5 Tumut trail takes off
- 6 Global perspective gained during US seminar
- 6 Orchid naming a rare honour
- 7 Forest open day showcases recreation
- 7 Fish-friendly forests
- 8 Measuring 120 years of growth
- 8 Flocking to new bird hide

features

- 9 Possible convict road uncovered in south coast forest
- 10 Pilliga home to barking owls
- 12 Alan Greensill - a reluctant legend
- 13 More than meets the eye - native timber veneer flooring
- 14 Planning a forest harvest

forest school

- 16 Activity sheet: Working as a forester
- 18 Watch out weeds!
- 18 Eden's outdoor classroom

what's happening?

- 19 Architects find inspiration
- 19 Hot off the Press - our latest publications

from the chief executive

There's been a lot happening over the last few months, with plenty to read in this issue of *Bush Telegraph* about our people, partners and activities.

One recent event has been the Walcha Timber Expo. I had the pleasure of attending the 10th biennial event, and with a population of just over 3,000, the northern tablelands township was overflowing with exhibitors and visitors.

Walcha is remarkable for its long history of, and commitment to, the timber industry with both softwood plantations and native forests playing a key role in the town's prosperity.

The direct economic contribution of the hardwood industry to the region is around \$250 million a year and it provides employment for some 4,500 people. The northern tablelands softwood industry, based on 10,000 hectares of pine plantation established by Forests NSW, is also on the move.

The town has long been home to Fenning Timbers, while Walcha-based Brian Smith Timber Transport has recently been awarded a harvest and haulage contract for up to 240,000 tonnes of logs a year from State forests. The McVicars group is establishing a new state-of-the-art mill in Quirindi to process pine from Nundle and Walcha Shires, with up to 400 hectares of plantation to be re-established each year.

Forests NSW strongly supports Walcha Council's strategy aimed at building on the existing State forest resource by establishing an additional 40,000 hectares of softwood plantation in the area. We have been happy to assist in the development of the strategy and are keen to help ensure the success of the project.

I look forward to visiting Walcha for the Expo in 2006 and seeing first-hand the continued expansion of the local timber industry.



P. Duncan
Peter Duncan
Chief Executive



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www.forest.nsw.gov.au



Cover photograph Timber harvesting in native State forests is undertaken after the development of a detailed harvest plan. See page 14 for story.
 Photo Forests NSW Image Library

\$600 million agreement secures Weyerhaeuser's future

A \$600 million agreement ensuring a secure supply of pine sawlogs to the Weyerhaeuser Australia sawmill for the next 20 years was recently announced when the New South Wales Minister for Primary Industries, Ian Macdonald, visited Tumut.

Under the new supply contract, Forests NSW will deliver radiata pine sawlogs to the Weyerhaeuser mill at Tumut from the 90,000 hectares of state-owned plantations in the Hume region.

"This new 20-year agreement represents a significant increase in the volume of logs to be supplied to Weyerhaeuser from the state-owned softwood plantations in the region," Mr Macdonald said. "It will underpin the continuing development of the Weyerhaeuser mill, which employs 250 people.

"The supply agreement includes \$170 million for contract harvesting and log haulage operations, which will generate a further 100 jobs in the region."

Weyerhaeuser has just completed a \$36 million investment program to lift the processing capacity of the Tumut complex to 650,000 cubic metres of sawlogs a year in 2005.

An additional \$20 million is to be spent on further equipment upgrades, including an increase in heat plant and kiln capacity and further improvements in sawmilling technology.

"These efforts will help ensure the Tumut mill remains an internationally competitive, world-scale timber processing facility and a key contributor to the regional economy," Mr Macdonald said.

"The company will also purchase sawlogs from private softwood plantations to supplement the supply from Forests NSW, providing a major incentive for future private investment in plantations in the area."

The Weyerhaeuser mill produces a range of structural timber products for use in housing and other construction purposes throughout south-eastern Australia.

The local timber industry generates a direct economic benefit of more than \$1 billion for the south-west slopes region each year and provides around 3,500 regional jobs.

– Sarah Chester Public Affairs, Albury

Top right: NSW Minister for Primary Industries, Ian Macdonald, (centre) reviewing harvesting operations with Kevin Todd of Forests NSW (left) and Peter Scott from Asher's harvesting and haulage company (right) during the Minister's visit to Tumut.
Photo by Gavin Jeffries



Seasons Greetings - then and now

Eden-based forester, James Jagers, was surprised recently when given a 66-year-old card by his grandmother. The Christmas card was sent by The Forestry Commission's Bermagui forester Mr A. Clulee to a local resident in 1938.

James says the Christmas wishes contained in the card are just as relevant today as they were at the time the card was mailed.

The card says ...

Your ... forests

Produce timber for your service.

Protect your watersheds and farms against flood and erosion.

Give you forest recreation and tourist trade.

Conserve the wildlife of the bush.

And furnish grazing.

Christmas happiness in green forests unmarred by bushfires.

New Year enjoyment of Life ... Growth... Wealth'.

Forests NSW wishes you a safe and enjoyable festive season in 2004.



20-year supply agreement boosts south coast timber industry

New South Wales Minister for Primary Industries, Ian Macdonald, has announced a 20-year wood supply agreement that will underpin employment and investment in the NSW south coast timber industry.

Under the agreement, Forests NSW will supply Davis & Herbert Pty Ltd with 72,000 cubic metres of sawlogs a year.

Davis & Herbert operates three mills at Narooma, Batemans Bay and Nowra producing a wide range of products for structural and specialised industrial uses.

"Davis & Herbert is by far the largest producer of sawn hardwood timber products on the south coast," Mr Macdonald said. "In total this industry provides direct employment for some 1,150 people locally and generates direct economic benefit to the south coast regional economy of more than \$75 million a year.

"This wood supply contract will provide the company with unprecedented security for its south coast hardwood operations.

"The agreement provides a long-term supply and a secure platform from which the industry can move forward with security and confidence.

"By extending the long-term security of supply to a range of sawlog quality grades, Davis & Herbert will have the certainty of a legally binding supply agreement for its raw material.

"The new arrangements are the result of work by Government and industry to create a long-term vision for the south coast timber processing sector.

"I am pleased that this company has embraced this opportunity to secure its long-term future and I congratulate them.

"This agreement is a big step forward in reinforcing the balance created by the Southern Region Forest Agreement between conservation within the comprehensive south coast reserve system and the need to provide security of supply so industry can continue to invest and generate employment."

– **Bill Frew** Public Affairs, Sydney

A worker at the Davis & Herbert sawmill at Narooma. The biggest producer of sawn hardwood timber on the NSW south coast, Davis & Herbert will receive 72,000 cubic metres per year of sawlogs from State forests.

Photo Forests NSW Image Library



Innovation and technology applauded at Kempsey sawmill

Australian Solar Timbers (AST) at Kempsey has won praise from the director-general of the NSW Department of Primary Industries, Barry Buffier, for its innovative ideas and technological awareness.

Speaking at the official opening of the upgraded mill, Mr Buffier said the hardwood timber industry - comprising forest management, timber harvesting and processing operations - was a major contributor to the economic prosperity of the NSW north coast.

"The industry provides direct employment for more than 4,500 people on

the north coast and contributes in excess of \$375 million to the regional economy each year," Mr Buffier said.

"Australian Solar Timbers is an example of how innovative ideas and technology can enable the industry to expand and generate increased job opportunities in the region.

"Since the early 1990s, AST has been transformed from a small pallet and piling mill into a state-of-the-art processing facility dedicated to the production of solid hardwood flooring products.

"At the same time, the number of people employed at the mill has increased almost five-fold from 14 to 68, significantly boosting the contribution of the business to the local economy.

"All this has been achieved though capital investment of around \$10 million on new equipment and innovative technology.

"AST is one of a number of major north coast timber processing companies to enter into new 20-year wood supply arrangements with Forests NSW.

"These new agreements will underpin the continuing development of the north coast hardwood industry by providing unprecedented resource security."

– **Bill Frew** Public Affairs, Sydney

Australian Solar Timbers at Kempsey is a state-of-the-art processing facility turning out solid hardwood flooring. *Photo Forests NSW Image Library*



Trail blazing around the world

Matt Pope, a forester with Forests NSW, was working with a construction team at Bend in Oregon, USA, on trail construction and maintenance when Sarah Chester got in touch to see how his Blakney Millar Churchill Fellowship was progressing.

Usually based at Tumut, Matt received one of 82 Churchill Fellowships awarded across Australia in 2004.

He left Australia in September to research walking and cycle tracks. He spent time travelling through the US states of California, Oregon, and Washington and then crossed the Canadian border into British Columbia and then back to the USA and Colorado. Matt then travelled to Wales and Scotland before returning home.

It's no surprise that he has chosen research in this area. Matt is passionate about the outdoors and enjoys bushwalking, back-country skiing and mountain biking.

Inspiration to apply for the fellowship came from work he was undertaking on a multi-use walking track at Tumut, a project instigated by fellow forester Duncan Watt (see story right).

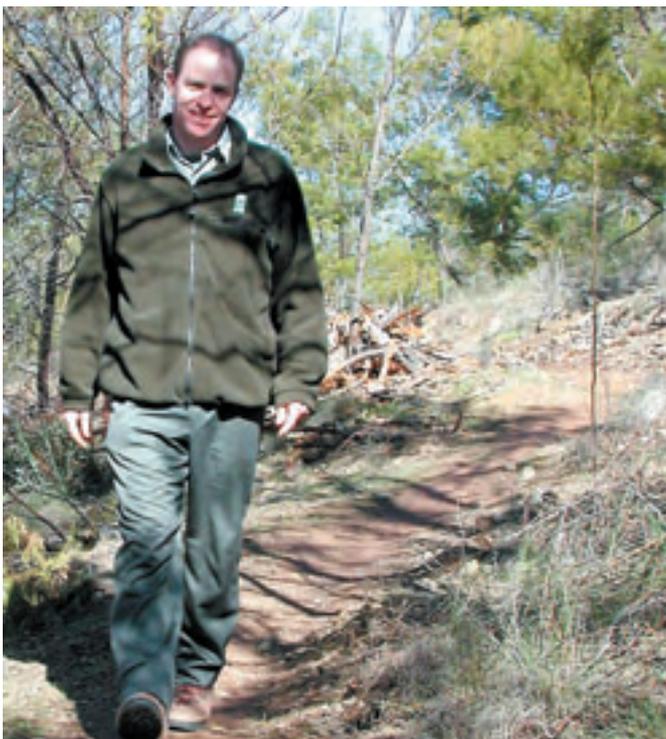
"There was some debate about mountain bikes using the same track as walkers and some people were cautious about the idea of multiple-use tracks.

"However, there are tracks around the world where this has been achieved with great success and added to the recreational resource for the greater community. That's what we would like to see happen in Tumut," Matt said.

"I think there is tremendous opportunity for Forests NSW to be a leader in some recreational areas, and multiple-use single track trails is just one of these."

– Sarah Chester Public Affairs, Albury

Forester Matt Pope walking in Tumut State Forest. He has been researching trails in the USA with a view to applying his knowledge to trails around Tumut. *Photo courtesy Tumut and Adelong Times*



Tumut trail takes off

The first section of a recreational trail network in Tumut State Forest has been completed by Forests NSW, with help from an enthusiastic group of volunteers.

Forests NSW regional planning manager, Duncan Watt, along with fellow forester Paul Kelly, has been the driving force behind the trail and said that although a lot of people previously used the forest on the edge of town, there were no formal recreational facilities or tracks.

The land had been used for pine plantation since the 1930s, but ten years ago after the plantation was harvested, Forests NSW made the decision to let the land revert to native forest.

"We see this development as a way of making the forest more accessible and appealing to the whole community," Duncan said.

The trail has been constructed with a target audience primarily of walkers and mountain bikers.

Volunteer helpers on the trail have included members of Conservation Volunteers Australia and, more recently, Green Corps who have committed to a six-month project employing ten young local people.

It is Green Corps first project in the region and will double the existing three-kilometres of trail as well as helping to remove rubbish and weeds.

Green Corps team leader, Rick Hargreaves, said it was a great opportunity for young people to take part in an environmental project and gain accredited training and leadership skills to enhance their employment prospects.

Weyerhaeuser, based at Tumut, is one of the region's largest timber processors and have donated \$5,000 towards the trail and Tumut Shire Council is assisting with the construction of a carpark.

Duncan said Forests NSW was very pleased with the positive feedback it had received from people who have used the trail to date and would consider developing additional sections and other facilities.

– Sarah Chester Public Affairs, Albury

(Left to right) Duncan Watt and Paul Kelly from Forests NSW, Federal Member for Farrer Sussan Ley (who launched the Green Corps project) and Rick Hargreaves of Green Corps inspect the recreation trail. *Photo by Sarah Chester*

Orchid naming a rare honour



A new species of orchid, *Corybas dowlingii*, found near Newcastle has been named after Forests NSW ecology fieldworker Bill Dowling. Photos courtesy Bill Dowling

Forests NSW ecology fieldworker, Bill Dowling, was “quietly chuffed” to learn that a species of orchid had been named after him.

He deserves to be. According to Forests NSW Hunter Region ecologist, Adam Fawcett, it is a rare honour, and he can’t recall it being bestowed on any other Forests NSW staff in recent times.

The orchid is *Corybas dowlingii*, which Bill has been studying in the Bulahdelah area for many years and was found during an ecology survey for the construction of the Pacific Highway bypass of Bulahdelah.

The species is only known to be in three locations in New South Wales: at Freemans Waterhole south of Newcastle, near Port Stephens and at Alum Mountain, Bulahdelah, where the specimen described was found in June 2003.

The orchid forms clonal colonies and grows in gullies in tall open forest.

“Bill has done a lot of work across the Barriington Tops on orchids and has sent many

samples to the Orchid Research Group at CSIRO Centre for Plant Biodiversity Research, part of the National Herbarium, in Canberra,” Adam said.

“This honour is well-deserved for the work he has been doing. He has an interest in wildlife generally, and is an orchid enthusiast.

“Before he joined Forests NSW five years ago he was a consultant for the National Parks and Wildlife Service on orchids. He is now involved in pre-harvest surveys for Forests NSW.”

– **Howard Spencer** Public Affairs, Coffs Harbour



Global perspective gained during US seminar

Twenty one participants from countries including Peru, Israel, Vietnam, Kenya, India, Russia and Madagascar gathered in the United States in August, keen to share ideas during an interactive training program for natural resource managers.

Forests NSW sustainability project manager, Sally Arundell, attended the 20th International Seminar on Forest and Natural

Resources Administration and Management held in the US states of Colorado, Montana, North Carolina and Washington DC over 19 days.

“It was such a valuable experience filled with learning, exchanging of ideas and interaction around the issues of sustainable forest management,” Sally said.

Academic lectures, classroom discus-

sions, field tours and participant presentations were centred around the themes of sustainable management, policy, programs and administration, global perspectives and research and technology transfer.

“The most valuable part of the seminar to me was the unique opportunity for cultural exchange and dialogue with forestry professionals from around the world,” Sally said.

“Learning new approaches to collaborative forest management, along with experiencing the varied and spectacular forested landscapes across the US, were highlights.”

Sally has recently been working on a number of collaborative projects, including the development of a sustainable recreation, sport, tourism and training policy in consultation with peak recreation groups and other government agencies.

“The ability to work with diverse stakeholder views is critical in collaborative forest management,” Sally said. “The seminar reinforced this and the importance of building open relationships with the community.”

– **Leah Flint** Public Affairs, Sydney



(Left to right) Sally Arundell, Mira Chen (Israel) and Gabriela Pinaya Johannessen (Bolivia) at Grand Teton National Park, Wyoming. Photo courtesy Sally Arundell



Forest open day showcases recreation

The many and varied recreational opportunities available in State forests were showcased at Sydney's Cumberland State Forest's annual open day in October.

Four-wheel driving tours, rogain, off-road motorcycling, dog sledding and carriage driving were just a few of the activities highlighted during the day-long celebration.

Rogain is the sport of long distance cross-country navigation in which teams of two-to-five members visit as many checkpoints as possible in a given time; while dog sledding involves dogs and their owners competing with wheeled-sleds on tracks throughout the forest.

"There are more than two million hectares of State forests around New South Wales which contain recreation sites with camping grounds, picnic areas, walking trails and an extensive network of forest roads to explore," Cumberland senior ranger, Susie Kable, said.

"Our theme this year was 'escape into adventure' as we wanted to highlight the diversity of activities people enjoy in forests.

"You can bring your dog, ride your horse or use a registered four-wheel drive or a registered motorcycle."

Children were kept entertained with a variety of stalls and activities, including a colouring-in competition, face painting, craft activities, guided forest walks and performances by a bush band.

A rock climbing wall was also popular, while a trackless train, pony rides for children and orienteering rounded out a full family day.

If you missed out this year, look out for the event in Spring 2005.

– **Howard Spencer** Public Affairs, Coffs Harbour

Face painting for children was popular, as thousands of people enjoyed the annual open day at Cumberland State Forest in Sydney in October. *Photo by Susie Kable*



Fish-friendly forests

Helping fish on their journey is all in a day's work for Forests NSW harvest planning and roading staff on the state's north coast.

The area north of Coffs Harbour is home to the threatened eastern freshwater cod *Maccullochella ikei*. To make sure it, and other threatened species, can access all chosen natural waterways, staff from Forests NSW and fisheries experts from the NSW Department of Primary Industries have been reviewing the best ways to facilitate their aquatic journeys.

"The upper reaches of the Richmond and Clarence Rivers are habitat for the cod," Forests NSW harvest planning manager, Steve Pickering, said. "And we have to ensure that causeways and bridges in State forests don't obstruct the passage of fish."

Forests NSW planning staff will undertake a habitat assessment and then, where any new crossings are needed or already exist, ensure that they meet fish-friendly crossing design criteria.

In practical terms, this means that crossings that formerly had a traditional timber or concrete sill on the downstream side to contain crossing material, such as gravel, might need to be altered so there is no barrier to fish passage.

"We will be undertaking this work on a priority basis so that any new harvest activity will be carried out with the fish requirements as part of the process of constructing or maintaining access roads," Steve said.

"We will use graded drops or fish ladders, and some causeways might give way to bridges or culverts. We will be aiming to do work which will not interrupt the natural flow of the waterway."

– **Howard Spencer** Public Affairs, Coffs Harbour

Fish such as the eastern freshwater cod will have better passage through creeks in State forests with new designs for crossings. *Photo copyright Rudie H. Kuiter*

Measuring 120 years of growth



Extraordinary 19th century plantings of tallowwood and Sydney blue gum in Strickland State Forest are being closely examined to gain valuable information on tree growth.

North-west of Gosford on the New South Wales central coast, Strickland was first established as a Forest Reserve in 1887 and became the site of the first forest nursery in the state that same year.

Over the next 50 years, the nursery supplied seedlings for many projects across the state, including plantings within the forest itself.

Since the area had been extensively harvested for commercial timber before its dedication, the forest was either planted with seedlings from the nursery or actively managed to foster forest regrowth.

While the exact timing of the various plantings is uncertain, close to 30 native and exotic species were planted including London plane trees, red cedar, black bean, bunya pine and American bald cypress.

Today, trees around 40 metres high can be seen along a short walking trail, with investigations now under way to measure the height and diameter of as many of the historic arboretum plantings as possible.

The blue gums and tallowwoods are of particular interest, given that they are two important commercial timber species that have been growing in relatively natural conditions for some 120 years.

Strickland has not been harvested for timber since the late 1970s, with the area permanently reserved for its unique education, recreation and cultural heritage values.

The new measurements will add to the history of this unique forest, with plans to establish formal, ongoing monitoring in what many believe to be the oldest forest arboretum in Australia.

– **Ian Elsley** Resources officer, Newcastle

Bunya pines with cones the size of footballs can be seen in Strickland State Forest. A new program of measuring early plantings in the forest is expected to yield valuable information on species growth. *Photo Forests NSW Image Library*

Flocking to new bird hide

Birdwatchers are flocking to the new Reed Beds Bird Hide in Gulpa Creek wetland, not far from Mathoura in the south-west of the state, with its stunning setting and unique accessibility, even during the biggest flood.

Located just off the main road, the bird hide blends so beautifully with the surrounding scenery it is virtually invisible from the car park.

It features a double-storey viewing platform over the water which is reached by a magnificent 150-metre long red gum walkway.

Recently opened by the Federal Member for Farrer Sussan Ley, the Reed Beds Bird Hide is part of a wider triavian corridor project initiated by Murray, Wakool and Balranald Shires, Forests NSW and the Central Murray Area Consultative Committee.



The view of the surrounding wetlands from the new bird hide.

The majority of the project funding comes from the Federal Government's Regional Solutions Programme, with additional finance and design support from the Barmah-Millewa Forum and Murray Wetlands Working Group.

Significant in-kind contributions have also been made by Murray Shire and Forests NSW.

Forests NSW Riverina regional manager, Mike Thompson, said the project would not have been possible without a collaborative approach by all parties.

"The hide and walkway have been made from logs sourced from Millewa State Forest and milled at Mathoura. Our thanks in this matter are extended to Chris Crump, Joel Smith, Ray Hill and Cliff Hill.

"Design, planning and construction was undertaken by Murray Shire and Forests NSW staff, who worked side by side to ensure this wonderful facility was constructed to an exceptionally high standard.

"Congratulations to everyone who worked on the project, and in particular Murray Shire's Jeff Smith and Mick Anderson and Forests NSW Steve Hammond, Peter Norris and Andy McAuliffe who carried out the majority of on-site work," Mike said.

– **Sarah Chester** Public Affairs, Albury



(Left to right) Pictured at the official opening of the Reed Beds Bird Hide. (Front row) Peter Norris and Cliff Hill, (2nd row) Mick Anderson, Andy McAuliffe and Jeff Smith, (3rd row) Chris Crump and Steve Hammond, (Back row) Gary Rodda and Joel Smith. *Photos by Sarah Chester*

Possible convict road uncovered

Managing cultural heritage in State forests is an integral part of forest management. Thousands of Aboriginal and European heritage sites can be found in State forests throughout New South Wales, all of which are recorded and protected. Planning manager, Ian Barnes, reports on a recent intriguing discovery on the south coast.

in south coast forest

almost hidden by native grasses and shrubs, a 770 metre section of narrow road meanders through Bolaro State Forest. Uncovered during a heritage survey undertaken by Eurobodalla Shire Council, the road has tweaked the interest of locals and Forests NSW staff alike, keen to unravel the history and use of the trail.

With clearly visible earthworks and intricate and well-laid dry-stone walling, the trail passes through State forest into flatter adjoining areas of private property where little trace of it remains.

Observation of the way the road has weathered, the style of its construction and the size of the trees that have re-grown nearby suggest the road, dubbed 'Old Buckenbowra River Road', was constructed in the mid-1800s. The narrowness of the road, the easy grades and the tightness of corners have led to the supposition that it was designed for horse-drawn carts.

A study of south coast geography suggests this short piece of road, with its relatively heavy earthworks around the tidal limit of the Buckenbowra River, was essential in linking communities in early-Australian settlement.

In the 1850s, the road would have linked the sea port and timber town of Nelligen, on the Clyde River, to the gold fields of Mogo; to the growing agricultural centre and port of Moruya via the open forested Buckenbowra Valley; and to the gold bearing Araluen Valley via pack horse over the Quart Pot Range.

By 1856, Nelligen was set to become a significant sea port for the southern tablelands with a convict-built road from Braidwood over the Clyde Mountain.

Close by the uncovered road is the historic Runnymede homestead, established by Henry Clay Burnell who had a small convict labour force. Local legend tells of the homestead's underground cellar being used to house convicts, although it is unlikely it was used as such.

Old parish maps do show a road between Nelligen and the Buckenbowra Valley via the Runnymede homestead. And the route across Bolaro State Forest matches the road now found in the field. It appears this old road between Nelligen and Moruya was part of a larger south coast horseback mail route between Nowra, Bega and beyond.

It is likely the 'Old Buckenbowra River Road' was built in the 1850s as an important link in the early road system serving the townships and mining and developing agricultural centres to the south, using Nelligen as a sea port.

It is also likely the section in Bolaro State Forest, which is built on a steep hillside to avoid the upper tidal limits of the Buckenbowra River, was hand-built by convicts using engineering standard dry-stone walling.

The earthworks of the road, including the dry-stone walling, is still largely in place.

The road was brought to the attention of Forests NSW by Eurobodalla Shire Council and the neighbouring Innes family, who have a strong interest in the history of old horse packing trails.

This newly discovered 'Old Buckenbowra River Road' within Bolaro State Forest has been zoned for total protection. It will soon be subject to archaeological investigation and heritage listing.

– Ian Barnes

Planning manager, Batemans Bay



From top: Dry-stone walling along a trail in Bolaro State Forest lends support to a theory of a convict constructed road from the mid-1880s. *Photo by Ian Barnes*

South Coast planning manager Ian Barnes on the rediscovered trail in Bolaro State Forest. *Photo by Ken Boer*

Ken Boer surveys the route of the possible convict constructed trail. *Photo by Ian Barnes*

Below: South Coast forester Ken Boer takes a close look at the 'Old Buckenbowra River Road'. *Photo by Ian Barnes*



Barking owls in the



Wuf-woof, wook-wook... This sound permeates the expansive night air throughout many areas in the Pilliga forests of north-central New South Wales. It is the dueting call of a pair of barking owls - the irrepressible communicators of the owl world.



Above left: Follow me!
A radio-tagged owl takes off.
Photo by Rod Kavanagh

Left: One of the Pilliga's barking
owls, radio-tagged, banded
and ready for release.
Photo by Matthew Stanton

Right: Rod Kavanagh with
one of the Pilliga's barking owls.
Photo by Howard Spencer

Pilliga

A seldom-seen night stalker of the western woodlands, the barking owl *Ninox connivens* was listed as a vulnerable species in 1998. The owl appears to have suffered a decline in abundance across southern Australia in recent decades for reasons that are not clearly understood, but which may be related to habitat loss and degradation.

Habitat of the barking owl includes the drier forests and woodlands near rivers and billabongs in agriculturally-dominated landscapes of the coast and inland slopes and plains. It is rare or absent from the tall, wetter forests typical of the coast and adjacent mountain ranges and, while it does occur in some State forests and national parks, most records are from private or other unprotected lands.

The recent discovery of a substantial population of barking owls in the Pilliga State Forests, an area long-used for wood production, poses the question of how best to ensure conservation of this species into the future.

The lack of any systematic surveys for this owl on private lands limits understanding of its true status. The previous knowledge of barking owls suggests that it is most likely to inhabit forest-farmland edges, particularly near creeks and low-lying swampy areas.

The barking owl, like most other owls, requires large hollows in old trees for nesting, but it has the ability to catch and eat a very wide variety of prey, including rabbits, possums and gliders, bats, insects, parrots and many other large and small birds.

In 2003, staff from Forests NSW and the Department of Environment and Conservation began a joint study in the Pilliga to determine aspects of the ecology of the barking owl that would provide a useful guide for conserving this species.

The researchers began by locating the nest trees, and several of the main roost trees, for eleven pairs of owls using the method of quietly listening at dusk and dawn for the first and last calls of the night during the early spring breeding season. The owl is so named because of the 'wook wook' noise they make when calling to each other - some liken it to the bark of a small dog.

These surveys identified the locations of nest trees in relation to forest edges, and the sizes and types of trees used for nesting.

A year later in June 2004, the team caught and tagged nine barking owls representing eight different pairs and proceeded to radio-track these birds in order to learn about the size of their home ranges and the forest types (tree species associations) mainly used for foraging, roosting and nesting.

Finding owl roost trees, where the birds shelter among the foliage during the day, has the added advantage of providing access to a wealth of information about the diet and prey taken

by the owls. Each afternoon, before the evening's activities begin, the owls regurgitate as 'pellets' the indigestible bones, fur, feathers and insect remains of their prey.

The main objective of the study is to examine the importance of forest 'edges', and particular forest types, as nesting, roosting and foraging habitat for the barking owl in the Pilliga forests.

Current interim forestry prescriptions in the region were strongly influenced by the perception that barking owls need forest edges of some type, however, the owls are distributed more widely in the Pilliga.

Accordingly, three pairs of owls were radio-tagged in an area that had major creeks (usually dry sandbeds) running through their estimated home ranges. Two pairs were tagged that had substantial areas of forest/paddock edges within their estimated home ranges,

while another three pairs were tagged in areas that had no creeks and no paddocks anywhere near their home ranges (that being, forest interior only).

The researchers hope to augment data on the owl's reproductive success (a key variable) by the addition of nesting results from a further seven territories where nest trees were located in 2003.

The radio-transmitters should last until Autumn 2005, at which time the birds will be re-trapped and the transmitters removed.

This information will help to determine the kinds of management actions needed to continue to conserve barking owls in the Pilliga forests into the future.

– **Rod Kavanagh** Principal research scientist, Sydney



Alan Greensill - a reluctant legend

Alan Greensill

Alan Greensill is a reluctant legend in the hardwood and softwood timber industry on the north coast and northern tablelands of New South Wales.

Alan is known as a modest man, and a highly-respected timber pioneer.

He is also a man who is much happier out of the limelight and is not at all taken with the idea of being interviewed.

Not only is Alan one of the biggest harvest and haulage contractors in NSW, he is also a major shareholder and co-chairman of Norply, a plywood mill at Kyogle that employs approximately 150 people.

You could say that Alan is a truly vertically integrated visionary - involved in cutting, delivering, processing and selling the timber.

Age has no hold on him. At 74, he is busy clocking up some 70,000 kilometres a year, supervising his bush crews.

He still gets up at 4am, although not as often as he used to, and drives out to a logging operation, undertakes a full day's work in the bush and then heads back to Norply and his role as logging supervisor.

Alan has been in the business since 1947 when, at 17 years of age, he started cutting hoop pine with a cross-cut saw and barking bar.

"We would stay out in the bush for weeks at a time in a rude hut with a tin roof and a bit of tarpaulin working from daylight to dark," Alan said.

He had nine brothers, all of whom at some stage in their lives worked in the timber industry.

His parents were farmers and Alan grew up as the third youngest in a family of 16 children.

"We were very close. I think big families are often very close. There are only eight of us left now.

"I can remember my mother used to bake 45 loaves of bread a week. She would be up kneading dough at 3 or 4am.

"When you grow up in a big family you get that strong work ethic," he said.

In 1952, Alan took a share in a log truck with his brother Fred and together they formed a partnership - Greensill Brothers Pty Ltd - to cut, snig and haul pine.

Today, Alan's son Denis runs Greensill Brothers. The company employs 72 people, runs 32 trucks, four harvesters as well as other heavy equipment and handles in excess of 500,000 tonnes of pine and hardwood a year.

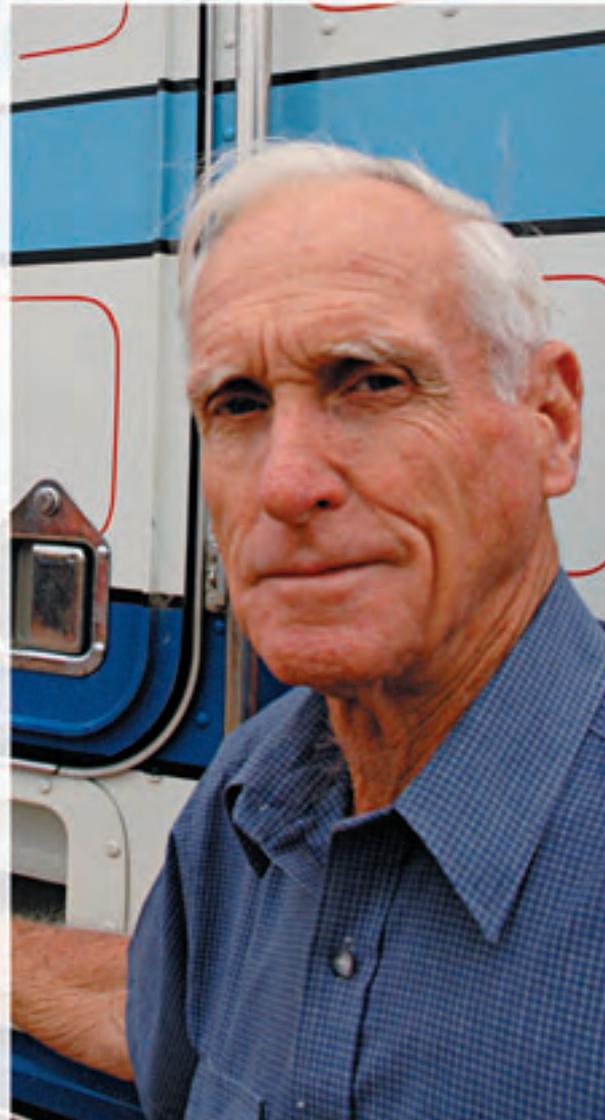
Alan's involvement with Norply began in 1990, when he was one of a group of business people who formed the company to buy a struggling plywood factory at Kyogle.

The timber industry is in his blood and he doesn't intend to retire unless his health deteriorates.

"Retirement is really only a licence to go home and die.

"I enjoy the bush and have the highest respect for the people who cut, snig and haul the timber. They are the lifeblood of the industry and without these bushmen nothing moves," Alan said.

- Sarah Chester Public Affairs, Albury



Alan Greensill has been involved in the north coast timber industry for more than 50 years. Photo by Howard Spencer

More than meets the eye

native timber veneer flooring

Big River Timbers in Grafton believe in making good things go further, and they have managed just that with their stylish eucalyptus flooring, called Armourfloor.

Looking at this product underfoot should make you wonder just what sins so many householders have committed over the years by laying carpet down on some of the best-looking timbers in the world.

Big River Timbers produces plywood. Nothing more. Simply plywood. Around 87 per cent of their production is formply for the building trade.

What happens to the other 13 per cent is what makes Big Rivers Timbers' work interesting.

Four of the east coast's best eucalypt timbers go into the product: flooded gum, blue gum, blackbutt and spotted gum. Most of the timber is sourced from sustainably managed State forests on the New South Wales north coast. Buyers can also order other timbers such as hoop pine.

They give different hues depending on the style you want, which can be further enhanced by the choice of finish.

How do they make the timber go further? The plywood veneers, each 3mm thick, including the face, means that the same high-value tree goes far further than it would if it were milled into solid tongue and groove flooring.

"We can sell all we can produce of this material at present," says Big River Timbers operations manager, Stuart Austin.

"There has been a rising demand for high-grade products like Armourfloor, and we are among a number of mills producing value-added high-grade timbers.

The difference with ours is that it is plywood, an engineered product."

Much of the backing veneer is lesser grade high-feature blackbutt material, with the high-grade select face on top. The backing requirement should provide a ready market for future plantation timbers, which generally have a uniform density and less striking grain.

"The plywood construction gives structural stability to the flooring with less dimensional variation when exposed to varying temperatures and moistures," Stuart said.

"The plywood construction gives structural stability to the flooring with less dimensional variation when exposed to varying temperatures and moistures," Stuart said.



Big River Timbers also has more improvements in the pipeline. They hope to one day semi-finish the flooring in the Grafton manufacturing plant to reduce the installation steps and improve control over the final product.

It should also improve the cost differential between other products.

The company has an advantage in being close to the market by maintaining its own sales and marketing teams in Townsville, Brisbane, Sydney, Melbourne and Perth.

The Armourfloor range complements the Armourpanel range that Big River Timbers produces as a super tough flooring for hard-wear areas.

Armourpanel is also used for wall paneling, ceiling panels, and in special applications such as the floor of sporting areas like basketball courts.

Howard Spencer

Public Affairs, Coffs Harbour

Left: Sheets of native timber veneer at Big River Timbers Grafton processing plant.

Below: The 3mm thick plywood veneer comes off the peeler at the plant. Plywood construction gives structural stability to the flooring.

Main pic: Armourfloor, Big River Timber's eucalyptus flooring range. Photos by Howard Spencer

"It should also provide a cost advantage to the builder, as it can be laid over existing flooring in renovations, or directly on to concrete slabs.

"It can also be laid over heated concrete slabs, unlike solid timber."

The flooring is produced in 130mm wide planks, with special orders taken for 170mm. It is 14mm thick and up to 2.4 metres in length.

The boards are ripped from plywood sheets into the required width and length, and grooved along the edge to take a plastic connecting strip.



Planning a forest

What is a harvest plan? Who puts one together? And why is it needed? Leah Flint sat down with Newcastle-based Forests NSW harvest planner, Andrew Bayley, to discuss the challenges of harvesting timber from native State forests on the New South Wales central coast.



A forester of eight years experience

and a planner for two years, Andrew Bayley says a harvest plan is a strategy to maintain healthy and vibrant forests.

"The benefits of planning operations in State forests are the results that can be achieved," Andrew said. "Harvesting provides a range of forest structures and age classes within the compartment and across the landscape. This provides a more diverse range of habitats for animals and plants as the forest regenerates and grows.

"Other benefits include road and fire trail maintenance and hazard reduction burning that's undertaken to promote regeneration of trees and reduce fuel levels.

"A harvest plan is a set of environmental standards, rules and regulations that takes many months to prepare and many more months to implement."

Preparing harvest plans for State forests extending north from Gosford to Bulahdelah and west to the Barrington Tops, Andrew said his job combined the best of two worlds.

"I spend time in the forest assessing and recording details about the compartment I am preparing a harvest plan for, and then time in the office using the latest in technology to prepare a detailed plan, including a map."

A compartment of State forest averages around 250 hectares, with Andrew one of three harvest planners preparing a total of 35 to 40 plans per year from their Newcastle office.

A range of different forest types is found across the region, with species harvested being predominately blue gum, blackbutt, tallowwood and turpentine.

With up to nine harvesting sites in operation at any one time, the logs are supplied to over 30 sawmills and processors, with a range of resulting products including construction timbers, bridge girders, power poles, wharf pylons, floorboards, surveying pegs, fence palings, weatherboards and paper.

Many weeks of work from a variety of specialists goes into the development of a plan for harvesting, which also incorporates road works and site safety.

"A soil scientist assesses soil type, looking at things like the potential for soil erosion and movement. This assessment can result in specific conditions for a harvesting operation such as extra gravel on roads or restriction on access during wet weather.

"A cultural heritage report is also prepared by a Forests NSW Aboriginal cultural heritage officer, after a site inspection and liaison with the local Aboriginal land council."

The cultural heritage officer spends time walking the forest, examining sites that have already been recorded, and looks for

evidence of previously unrecorded sites. These could include cave paintings, rock engravings or middens. Sites are recorded and protection measures put in place, generally a 'buffer zone' from which machinery and harvesting is excluded.

"Another extremely important aspect of the plan is flora and fauna," Andrew said. "The regional ecologist and his team of field researchers spend around two months surveying the compartment for rare and threatened plants and animals. Any unusual sightings are also recorded.

"In the State forests of the region, records include koalas, powerful owls, pygmy possums, yellow-bellied gliders and stuttering frogs. With every record, special protection measures are put in place which might be a buffer zone or could be the retention of more trees for habitat."

Andrew said that a five-year plan of operations, based on the examination of aerial photographs and historical records with field-based verification, sets the scene for the ecology staff to conduct seasonally based surveys to uncover key species when they are most active.

The next step is advising any State forest neighbours of the intention to harvest in their local forest.

"This is one of the most enjoyable aspects of the job," Andrew said. "I get to talk to a lot of people about forest management and forestry."

After consulting historical records that are kept on file about each compartment (some of which date back 60 years), a site-specific harvest plan is then prepared.

"The plan includes a map that is used by staff in the field, but also includes a detailed list of directions and conditions to implement. The plan is discussed with Forests NSW supervising forest officer and the contractors who fall, measure and load the

harvest

trees to ensure that all conditions are understood," Andrew explained.

A harvest plan may take up to a year to prepare, with the planned operations taking anywhere from weeks to months. All plans are available for the public to view at the local Forests NSW office.

"Harvesting is monitored by the supervising forest officer and may be audited by other staff, with random audits also carried out by the Department of Environment and Conservation to check our operations adhere to licences and Acts they administer."

Once completed, all goes back on file ready for another harvest planner in 30 to 40 years' time, after the forest growth cycle that has been carefully managed through a harvest plan sees trees ready for harvesting again.

"I feel good about my role as a harvest planner," Andrew said. "I feel a part of a forestry tradition and part of a process that is achieving good things socially and environmentally, at the same time maintaining a sustainable supply of different timber species to the timber industry and enthusiasts."

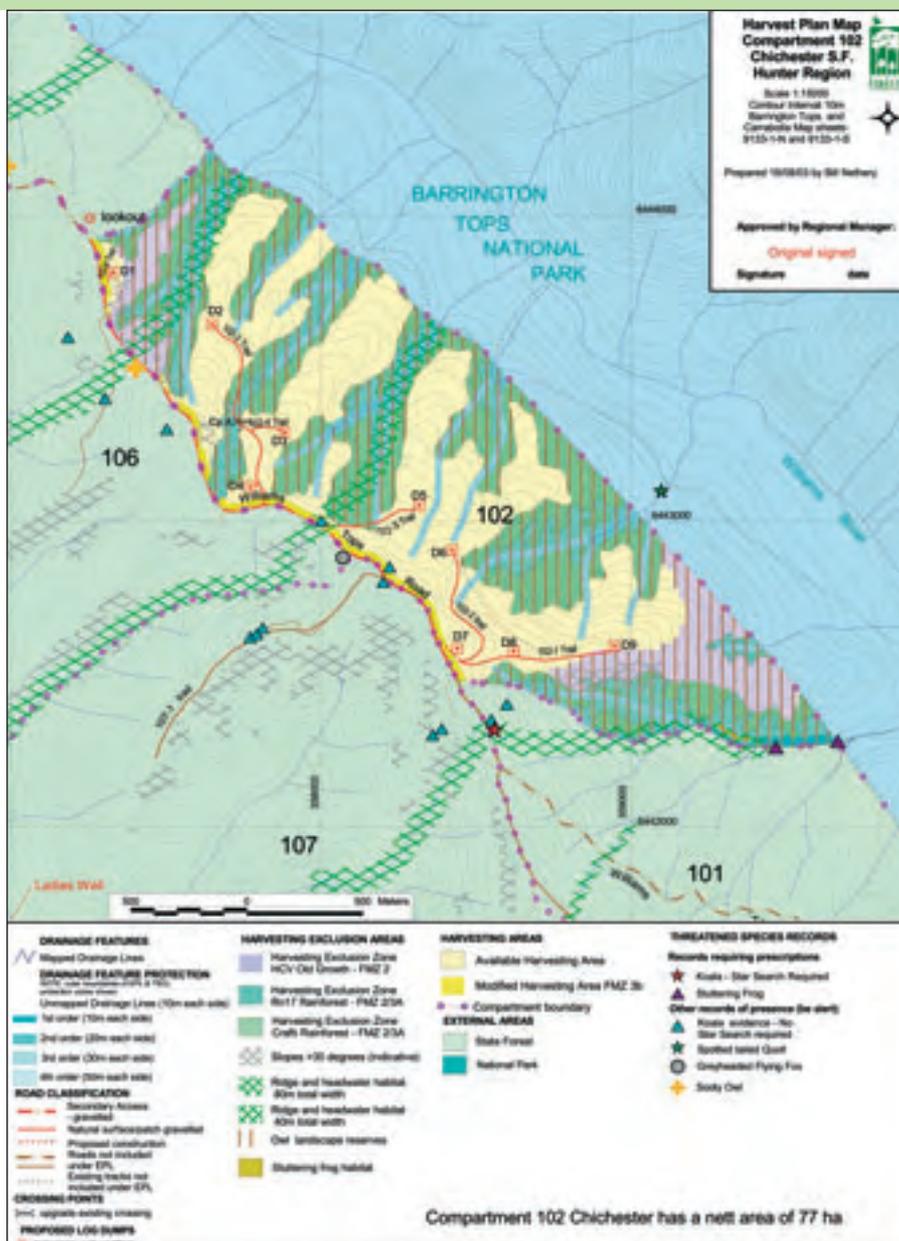
"I think harvest plans have evolved over the years to provide a clear set of instructions for field staff and contractors to carry out their operations, while at the same time ensuring they meet planned objectives and environmental, social and safety standards."

— Leah Flint Public Affairs, Sydney

Left: Forester Andrew Bayley says a harvest plan is a strategy to maintain healthy and vibrant forests.

Photo by Mike Pryjma

Right: An integral part of a plan is a customised map capturing information about the area soon to be harvested, including creeks, roads, key animal records and areas where harvesting is excluded.





PICNICKING



EUCALYPTUS OIL

Working as a Forester

Foresters work in State forests across New South Wales. Foresters are □ scientists who manage forests. This means they balance the way people use forests for things like timber and recreation with conserving special forest features like wildlife and heritage sites.

Look at the pictures around the border of this page. Some of the pictures show ways people use forests and some of the pictures show what is conserved (protected) in forests. Sort them into two lists.

Use	Conserve
.....
.....
.....

Have a go at being a Forester. Draw up a forest management plan for Sunny State Forest. The plan will help Forests NSW decide which parts of Sunny □ State Forest will be harvested for products like timber and which areas □ need protection.

Use the picture of Sunny State Forest on the next page and the information below to make a combined picture of protected areas within Sunny State Forest. Some of the protected areas may overlap and be protected for more than one reason. When you have finished marking all the protected areas look at what is left. Some of the trees in these areas may be harvested for timber.

You will need to use the scale and key on the next page.

Streams

Forests act like filters holding back dirt so it doesn't get into streams, keeping the water clean. 25 metres of forest must be left untouched around all streams. Draw a 25 metre protection zone around all stream banks. Remember streams have two banks.

Recreation and heritage sites

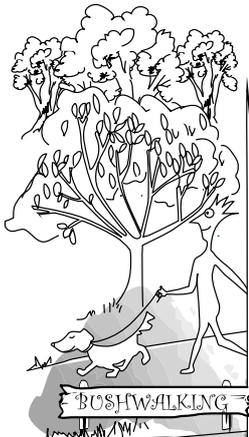
Areas set aside for picnicking and camping are called recreation areas.

Heritage sites, like Aboriginal paintings, tell us about our past and cannot □ be replaced.

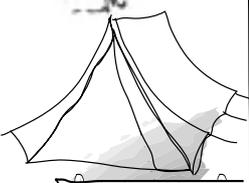
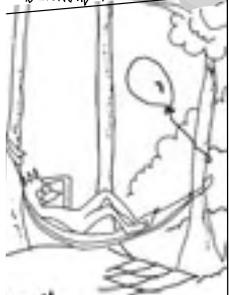
Draw a 25 metre protection zone around the perimeter of all recreation and heritage sites.

Habitat trees

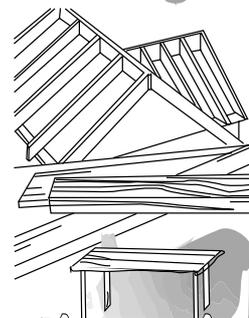
Habitat trees are big old trees with hollows that make great homes for wildlife. Like apartment blocks, habitat trees provide places for wildlife to sleep, eat and shelter. At least two habitat trees must be marked with an "X" for protection.



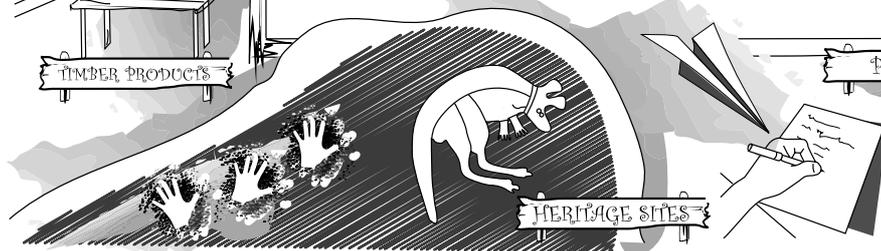
BUSHWALKING



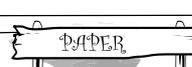
RECREATION SITES



TIMBER PRODUCTS



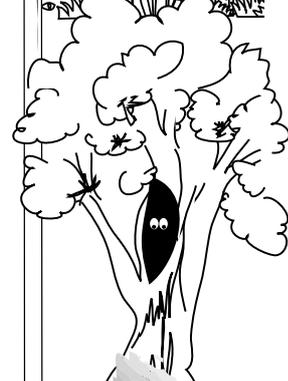
HERITAGE SITES



PAPER



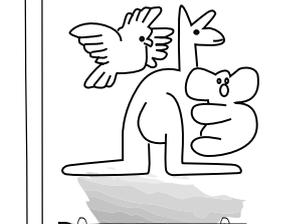
WATER



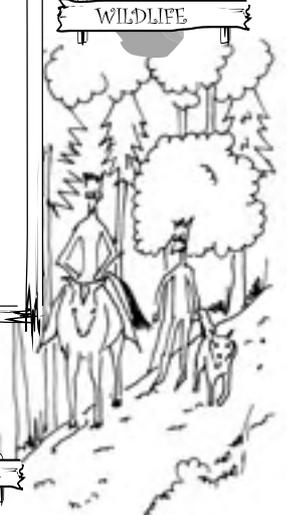
RAINFOREST



OLD TREES



WILDLIFE



HORSE RIDING



Rainforest

Forests near the coast have patches of rainforest growing in gullies where there is enough water and shelter. These rainforests make up only a small part of forests across NSW and contain large numbers of plants and animals living together. Draw a 50 metre protection zone around the perimeter of all rainforest areas.

Threatened Species

Threatened species are plants and animals facing possible extinction. The powerful owl, Australia's largest owl measuring 60-66cm, is a threatened species and has been spotted in Sunny State Forest. With the owl in the centre, draw a circle around each owl spotted to protect it. Your circle should have a radius of 100 metres, this will give the owl enough forest to hunt and roost.



SUNNY STATE FOREST



KEY

	STREAM		RECREATION SITE		HERITAGE SITE
	HABITAT TREE		RAINFOREST		POWERFUL OWL

How many trees are outside protected areas? Some of these trees may be harvested.



Eden's outdoor classroom

The wonders of the Geebung Room, an outdoor classroom area constructed in Nullica State Forest near Eden on the far south coast, will be celebrated as far away as Korea and England after a volunteer upgrade of the area.

A group from Conservation Volunteers Australia turned out to give the popular area a facelift. It is frequently used by bird watchers, school and university groups for various forest activities.

Volunteers in the group came from as far as Korea and England.

The Geebung Room itself is a bush amphitheatre in a small clearing in Nullica State Forest.

It has wooden log bench seats and a lectern from which staff can address groups before taking them on a guided walk through the surrounding forest.

"The upgrade has made it more friendly for walkers," said the original designer of the area, Forests NSW

Southern Region ecologist, Chris Slade.

"We put in some steps and minimised some slopes. The walk now goes for about 3km and moves through a number of different forest types."

Of major interest on the walking track from the Geebung Room is a tree dubbed 'Nullica Hotel', a large mountain grey gum with at least four different hollow-dwelling animals in residence. The upgraded track has been called the 'Woolybutt Wander' to reflect a major tree species found along the way.

There are more than 100 plant species recorded as well as powerful owls, masked owls, yellow-bellied gliders, sugar gliders and flying foxes all within the Eden town limits.

– **Howard Spencer** Public Affairs, Coffs Harbour

Volunteers at the Geebung Room, a unique bush classroom near Eden. It has been given a facelift by Conservation Volunteers Australia and Forests NSW. *Photo by Dean Payne*



Watch out weeds!

Weeds in the Riverina be warned: Weed Warriors, in the form of enthusiastic school children, are on their way with a mission to eradicate.

A national program, Weed Warriors encourages communities to rear biological control agents to help manage weeds.

Students from Barham Public School, the Riverina's first team of Weed Warriors, recently helped release bridal creeper leafhoppers into Campbell's Island State Forest, near Barham, in an attempt to stop infestations of bridal creeper.

Leafhoppers are a biological control agent, or natural enemy, of the bridal creeper, a weed of national significance affecting not only forests and bushland but also orchards and farmland throughout the region.

Barham Primary School bred hundreds of bridal leafhoppers from a colony established across the border at Murrabit Group School.

Students from Murrabit were also on hand to help release the leafhoppers into the forest.

Stephen Battenally, noxious weed officer from Wakool Shire and program organiser, said numerous other schools in the Riverina have shown an interest in becoming Weed Warriors.

"The program is making a significant contribution to increasing education about weeds and also providing an important weed management option.

"We are also looking at biological controls for Patterson's curse and horehound with the intention of getting the Weed Warriors involved in controlling these weeds as well," he said.

Gary Rodda forest centre manager for Forests NSW at Deniliquin said he welcomed the program.

"It provides an excellent opportunity to foster community partnerships to achieve effective pest and plant management, even across State borders," Gary said.

– **Sarah Chester** Public Affairs, Albury

Above: Barham Primary School children releasing the bridal creeper leafhoppers into Campbell's Island State Forest with help from Stephen Battenally.



Architects find inspiration

A group of leading Sydney architects recently swapped their sketches and models for hiking boots and water bottles to discover the potential of native hardwood timbers for their designs.

Touring the closest working forests to Sydney, the State forests of the Watagan mountains, the group followed the process of sustainable forest management from forest to sawmill.

"People are starting to specify environmentally-friendly building materials, especially timber from sustainably managed forests," Forests NSW marketing forester, Nick Cameron, said. "Seeing how State forests are managed for multiple uses on an ecological sustainable basis, examining native forest products, and discussing possible applications, meant the architects went away better informed about options for design and construction."

The aesthetic and diverse structural properties of Australian native timbers make them an increasingly popular choice for home renovators and builders. The tour, organised by Forests NSW and the Institute of Foresters of Australia with support from The Royal Australian Institute of Architects, will be offered again in 2005. For more information contact Nick Cameron on Ph: (02) 9980 4100.

– **Carmen Perry** Public Affairs, Newcastle

More and more people are specifying environmentally-friendly building materials, with leading architects recently touring native State forests and Sweetman's sawmill near Newcastle. *Photo by Carmen Perry*

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december 2004 – february 2005 events

- | | |
|----------------|---|
| December | Sale of Christmas trees at Cumberland State Forest Nursery located at 95 Castle Hill Road, West Pennant Hills. |
| Dec – Feb | Cumberland Activity Program
A variety of fun activities led by rangers and staff at Sydney's only metropolitan State forest.
For bookings and information Ph: 1300 655 687 or (02) 9871 3377 |
| 3 - 4 December | Hunter Teacher's Bus Trip
Free overnight camping trip for teachers investigating forests and forestry on the central coast.
Gerard Nolan Education Officer Ph: (02) 9871 0050 |
| 5 - 25 January | Cumberland State Forest holiday program
A range of kids' activities including puppet theatre and mini-rangers.
For a full list of activities visit www.forest.nsw.gov.au/cumberland .
Cumberland State Forest Ph: 1300 655 687 or (02) 9871 3377 |

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